

Perceptions of Parenting Styles and Their Associations with Mental Health and Life Satisfaction Among Urban Indonesian Adolescents

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Published online: 29 November 2014
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Abstract The study aimed at investigating the association between maternal and paternal parenting styles and psychological well-being among Indonesian adolescents. The Parental Authority Questionnaire (PAQ), General Health Questionnaire-12 (GHQ-12), and the Brief Multidimensional Students' Life Satisfaction Scale, were administered to 500 adolescents. We were unable to replicate the three-factor solution of the PAQ using confirmatory factor analysis. The permissive subscale demonstrated poor psychometric properties; it was therefore not included in any further analysis. Mothers were perceived to be more authoritative than fathers; on the other hand, fathers were perceived to be more authoritarian than mothers. Both maternal and paternal authoritative parenting styles were positively associated with outcomes. Authoritarian parenting was not associated with any outcome. Scores computed to represent perceived differences between maternal and paternal use of various parenting styles were associated with reported GHQ-12 and life satisfaction scores. Our results confirm Western findings on the positive effects of authoritative parenting, but do not replicate the negative associations of authoritarian parenting. **Future studies that examine different parenting styles at the construct level are needed to elucidate the association between parenting styles and adolescent psychological functioning in the Indonesian and other similar contexts.**

Keywords Adolescents · Indonesia · Parenting styles · Psychological well-being

Introduction

The study of parenting styles focuses on the emotional climate that parents create while raising their children (Darling and Steinberg 1993). Since the introduction of the concept, parenting styles have been a popular area of study in developmental psychology. The influence of parenting has been studied across cultural contexts, including Asia. However, most Asian studies have been carried out in countries with a Confucianist cultural influence (i.e., China, Taiwan, and Korea). With respect to the literature on parenting Indonesia, an Asian country with the largest Muslim population in the world, presents an interesting case study. Here, religion, an important cultural variable, influences parenting practices, strategies, goals, and the emotional climate at home (Acevedo et al. 2013; Danso et al. 1997; Godina 2013; Wilcox 1998).

Baumrind's (1971, 1978) typology of parenting styles has had a powerful influence on the study of parenting. According to this typology, the combination of warmth and demandingness defines three kinds of parenting styles: authoritative, authoritarian and permissive. Authoritative parenting, characterized by a child-centered approach, combines a high degree of parental warmth, structure and autonomy support (Baumrind 1972). Authoritarian parenting involves high demands for obedience and compliance to a set of rules, accompanied by low levels of parental warmth. Permissive parenting is seen as involving few behavioral expectations for the child and high levels of parental warmth. In a refinement of Baumrind's theory, a differentiation of neglectful and indulgent parents within

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the permissive parenting style has been made (Maccoby and Martin 1983).

Cross-cultural research confirms the existence of these parenting styles, as well as their salient influence on child and adolescent development (Abu-Rayya 2006; Ang 2006; Cheah et al. 2009; Eisenberg et al. 2009; Garcia and Gracia 2009; Huver et al. 2009; Snoek et al. 2007). However, the associations between parenting style and child outcomes are moderated by cultural and contextual factors as socio-cultural factors may determine both the preferred parenting styles and their associations with outcome (Assadi et al. 2007; Jackson-Newsom et al. 2008). Cultural values, norms, and goals influence parenting beliefs, practices, goals, and styles (Harkness and Super 1996).

In terms of interpersonal relationships, cultures may differ in the manner in which they emphasize the relative contribution of autonomy and relatedness (Kagitçibasi 2006; Keller 2012). In cultures where autonomy, personal achievement and self-directedness are emphasized, parents will involve children in decision-making and provide explanations both for the rules they set and the consequences of one's behavior. Authoritative parenting would be the most ideal style in such cultures; on the other hand, authoritarianism or strict parenting would be viewed negatively by children and contribute to adverse outcomes. Other cultural groups place more emphasis on group harmony, cohesion, and common goals. Respect for hierarchy and authority are considered paramount to maintaining the cohesiveness of the group. In such cultural groups, children would perceive strict parenting that is accompanied by warmth as acceptable. Recent studies among Asians (e.g., Koreans) illustrate that warm and strict parenting can co-exist (Choi et al. 2013).

Kagitçibasi (2006) noted that parenting styles may be influenced by societal developments. Many countries with a strong tradition of relatedness and interdependency are becoming more modern and urbanized as their populations acquire more education. In such countries, a value pattern in which both economic independence and emotional interdependence are valued can emerge. This leads to parenting behavior that encourages an autonomous-relational self. Parenting strategies aimed at encouraging an autonomous-related self may be especially salient for the population in Jakarta, where they are experiencing rapid social and economic changes.

In largely industrialized Western countries with highly educated populations, there is a strong socialization towards autonomy. Authoritative parenting which is associated with positive child and adolescent outcomes, such as social competence, self-reliance, and achievement orientation (Baumrind 1978; Hein and Lewko 1994; Lopez et al. 2008) is the preferred style of parenting. In these countries, authoritarian parenting has been associated with maladjustment, low

self-esteem, and poor academic performance (Herz and Gullone 1999; Lamborn 1991; Smetana 2006). Interestingly, a slightly different picture emerges in some Eastern cultures where people are more interdependent and place a high value on relatedness, interpersonal harmony, and obedience to authority. Whereas authoritative parenting is seen to be most beneficial similarly to Western cultures, findings on the influence of authoritarian parenting have been controversial. Some studies have observed that children of Asian origin benefit from authoritarian parenting, while others report the lack of an effect. For instance, Chao (1994) observed that authoritarian parenting was associated with higher academic performance among children of Chinese immigrants in the US. She notes that differences in how the concept functions among Chinese parents may result from an ethnocentric, Western-based conceptualization. Chao proposed a different approach in conceptualizing and interpreting parenting styles adopted by Chinese parents. Specifically, she explains that Chinese parents tend to view socialization as “training”, hence the positive effects of a controlling parenting approach in the Chinese context. In line with this view, a study by Leung et al. (1998) found that an authoritarian parenting style was positively associated with the academic achievement of Hong Kong Chinese students, whereas an authoritative style was unrelated to academic achievement. These findings have not been consistently replicated, with researchers such as Pong et al. (2009) reporting that authoritarianism had a negative impact on children's (both European Americans and Asian Americans) academic achievement in the US and in Taiwan. These inconsistent results provide the impetus for further research in this field.

Similarly, the relationships between permissiveness and adolescent outcome are not consistent. Several studies have reported that permissiveness, like authoritarianism, had a negative impact on child outcome. It has been suggested that undercontrolled environments, typical of permissive homes, do not foster self-regulation in children, which may result in children who are impulsive and underachieving (Barber 1996; Onatsu-Arvilommi and Nurmi 1997). However, other studies have associated permissiveness with positive psychological adjustment. For instance, Garcia and Garcia (2009) in an investigation involving 1,416 teenagers from Spain reported that their findings suggested that indulgent (permissive) parenting was the optimum style of parenting in the Spanish context. Adolescents whose parents favored this parenting style scored higher in self-esteem and lower in anxiety than their counterparts with authoritative parents.

Understanding parenting in Indonesia requires knowledge of both the cultural and religious background, as religion constitutes an important component of Indonesian culture. It is important to keep in mind that religious beliefs

help shape socialization goals and parenting strategies of Indonesian parents, even though it is impossible to disentangle cultural and religious factors. Islam emphasizes group harmony, coupled with a strong leaning towards respect and deference to the authority of elders and parents in particular. The vast majority of Indonesian families therefore emphasize closeness and harmony (*rukun*), loyalty, obligation, respect (*hormat*), and voluntary cooperation (*gotong-royong*) (Adamson 2007; Magnis-Suseno 1991; Piercy et al. 2005). It is an obligation for children to obey their parents and elders and to preserve family honor. Social relationships are strictly regulated with a strong tendency towards maintaining a respectable distance from those in authority. The father, who is customarily the head of the family, makes most of the important decisions for the family. Magnis-Suseno (1991) observed that Indonesian fathers largely keep their distance from their children and are expected to punish any gross misbehavior by them. Mothers, on the other hand, spend more time with children and are responsible for their care and discipline. Despite the father's formal 'leadership position' within the Indonesian family context, the mother is very influential. Older daughters are expected to take up some maternal responsibilities, such as household chores and sibling care. Parents' socialization processes are therefore geared towards ensuring that children are ready to take up these responsibilities within the family and the larger society.

Both parent and child gender may influence the parenting style adopted. As noted by Forehand and Nousiainen (1993), most studies have not considered the potential differences between mothers' and fathers' parenting. And yet, research has reported differences in adolescents' perceptions of their mothers and fathers and in the influences of mothers' and fathers' parenting practices on adolescent outcomes. For example, adolescents from the US tend to link more emotional attributes to mothers and more rigid and formal attributes to fathers (Pipp et al. 1985). Moreover, it has been found that there is a difference in the preferred parenting styles among couples, and that these differences may have a significant impact on child outcomes. In a recent study among Dutch adolescents, Hoeve et al. (2011) observed that about half of the parent dyads in their study demonstrated discrepant parenting styles with fathers adopting different styles from mothers. Important differences in the relationship between adolescent delinquent behavior and parenting styles emerged when they investigated the effects of differing styles of fathers and mothers. Furthermore, the study found that although any inconsistency between parenting styles tends to be damaging to the child, the benefits of having at least one authoritative parent outweighed the negative effects of inconsistent parenting styles (Hoeve et al. 2011). These

findings provide a sound justification for investigating paternal and maternal parenting styles separately. In cultures where there is still a strong emphasis on different roles for mothers and fathers such as in Indonesia, these differences are likely to be amplified. In the traditional Indonesian setting, as the head of the family, the father is expected to cater for family needs, make important decisions on behalf of the family, and punish grave misconduct on the part of the children (Setiadi 2006). On the other hand, mothers provide emotional support to the family alongside providing day to day care for the child (Setiadi 2006). Such apparent delineation of gender roles is likely to contribute to differences in patterns of mother–child interactions compared to father–child interactions.

As stated earlier, the child's gender may influence perceived parenting styles (Chen et al. 2000). A significant number of studies indicate that boys report a higher score on authoritarianism in comparison to girls. It is likely that boys have a tendency towards seeking relatively more autonomy from parents compared to girls. The differential treatment of sons and daughters has been observed in varying contexts. We therefore expect that the relationships between gender and parenting in Indonesia will be similar to what has been reported in other cultural contexts.

Past studies indicate that several sociodemographic characteristics, including parental education and socioeconomic status, influence preferred parenting practices. In one of these studies, Bluestone and Tamis (1999) observed that maternal education was positively associated with preferences for child-centered practices (authoritative parenting) among working and middle class African American families. Similar findings have been reported among an Iranian (Assadi 2007) and Malaysian sample (Tam et al. 2013). However, contrary to these findings, Lipps et al. (2012) observed that parental education does not influence preferred parenting style in studies carried out in four Caribbean Islands. The literature suggests that parenting can be conceptualized as mediating the link between background variables and socialization outcomes (e.g., Bank et al. 1993; Raver et al. 2007; Raviv et al. 2004). This link is tested in the current study.

Little if any research has been carried out on parenting in the Indonesian context. We could only identify two unpublished reports (both bachelor's theses) addressing the effects of parenting styles on adolescent outcomes. In the first study involving adolescents aged 16–18 years, Apriaty (2005) reported that there was a similar number of authoritative and authoritarian parents ($N_{\text{authoritative}} = 48$; $N_{\text{authoritarian}} = 47$) in her sample. This number was higher than that of permissive ($N = 33$) and uninvolved parents ($N = 30$). The second study on parenting styles in Jakarta, reported that most adolescents (aged 12–14 years)

perceived their parents as practicing authoritative ($N = 66$) rather than authoritarian ($N = 46$) or permissive parenting ($N = 32$) (Pahur 2008). The first study found no significant relationship between parenting and self-concept (Apriliaty 2005), while the study by Pahur (2008) found that the social-interaction abilities of adolescents with authoritative parents were more developed than those of adolescents with authoritarian or permissive parents. These widely discrepant results on the relationship between parenting and outcome may be attributed to various reasons including sample characteristics, sample size, analytic approach, and measurement instruments, among others. Further evaluation of Indonesian parenting styles will address the existing knowledge gap by providing a more in-depth understanding of the association between parenting styles and adolescent outcomes.

We aimed to evaluate possible differences in parenting styles of Indonesian mothers and fathers, as reported by their adolescent children, and investigate the relationship between parenting styles and psychological well-being of adolescents. Based on the reviewed literature and the sociocultural context of the study, we set out to test the following hypotheses:

Hypothesis 1 There are significant differences between maternal and paternal parenting styles with mothers scoring higher on authoritative and permissive parenting compared to fathers, who score higher on authoritarianism;

Hypothesis 2a There is a significant difference between boys' and girls' perceptions of parenting styles, with boys expected to report more authoritarianism than girls, and girls expected to report more authoritativeness than boys;

Hypothesis 2b Parental education is negatively associated with the use of an authoritarian parenting style and positively associated with the use of authoritativeness;

Hypothesis 2c There is a significant association between a child's age and parenting styles. Older children are expected to report more authoritarian parenting;

Hypothesis 3a Both maternal and paternal authoritative parenting styles show a positive association with psychological well-being of adolescents;

Hypothesis 3b_i There is a significant positive association between adolescent psychological well-being and both maternal and paternal authoritarianism;

Hypothesis 3b_{ii} There is a significant negative association between adolescent psychological well-being and both maternal and paternal authoritarianism; and,

Hypothesis 4 Inconsistency in the style preferred by mothers and fathers is negatively associated with the adolescents' psychological functioning.

Method

Participants

A total of 500 participants were recruited from five schools. Data from 16 pupils were excluded from further analysis because of incomplete questionnaires. The mean age of respondents was 15.67 years ($SD = .71$, min. = 14, max. = 18). Fifty-five percent of those who responded were female. The majority of the participants were Muslims 89.6 % ($n = 432$), with Christians and Hindus constituting 9.5 % ($n = 46$) and 0.4 % ($n = 2$) of the sample, respectively. There was one Buddhist and one self-identified atheist in the sample. Data on parental educational level showed that there were fewer fathers ($n = 5$, 1 %) than mothers ($n = 18$, 3.7 %) with no schooling at all; 9.1 % ($n = 44$) of mothers compared to 5.6 % ($n = 26$) of fathers had achieved primary school education; while the majority of both parents had completed secondary school (mothers: 52.7 %, $n = 255$; fathers: 47.1 %, $n = 228$) and post-secondary school training (mothers: 34.5 %, $n = 167$; fathers: 46.5 %, $n = 225$).

Procedures

Students attending five randomly selected secondary schools in Jakarta were sampled for inclusion in this study. Permission for collecting data in the school was sought from the heads of schools and departments in accordance with procedures laid down by the schools. After obtaining permission from the school, we sought and obtained assent from the students. Research assistants then administered the questionnaires to the students during scheduled group sessions. Three research assistants were present at each session to give instructions and ensure that each student filled in the questionnaire independently.

Measures

Using a forward translation and back-translation approach, an expert panel comprising the second, third, and fourth authors, together with a research assistant adapted all the measures into Bahasa, the national language of Indonesia. Any discrepancies in the translations were resolved through a committee approach. A pilot study involving 60 adolescents (not included in the main study) was carried out prior to the main study to establish whether or not the students could understand and respond to the questionnaires. We conducted a psychometric evaluation of all the measures used in the study.

Parenting Styles

The Parental Authority Questionnaire (PAQ; Buri 1991) is a 30-item questionnaire designed to measure parental

authority, or disciplinary practices, from the point of view of the child (of any age). The PAQ has three subscales: permissive, authoritarian, and authoritative/flexible parenting. The items are rated using Likert scale format, with scores ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include ‘As I was growing up my mother gave me clear direction for my behavior and activities, but also understood when I disagreed with her’ and ‘As I was growing up my mother directed the activities and decisions of the children in the family through reasoning and discipline’. Given that this was a new measure in the Indonesian setting, we carried out a full validation of the scale (discussed in the “Results” section).

Poor Mental Health

The 12-item General Health Questionnaire (GHQ-12) was administered to evaluate mental health (Goldberg 1992). The GHQ-12 was developed as a screening tool for detecting minor psychiatric disturbance or strain. The measure assesses changes in affective and somatic symptoms. In the current study, a Likert-type response scale was used, with scoring options of 0–1–2–3 (e.g. ‘Have you recently felt that you couldn’t overcome your difficulties, 0 = not at all, 1 = no more than usual, 2 = rather more than usual, 3 = much more than usual’).

Life Satisfaction

The Brief Multidimensional Students’ Life Satisfaction Scales (BMSLSS) which is scored on a 7-point Likert scale ranging from 1 (*terrible*) to 7 (*delighted*) was also administered (Huebner et al. 2006). This scale has five items inquiring on satisfaction with different domains (e.g., school and family) as well as a global question. A sample item includes ‘I would describe my satisfaction with my school experiences as...’.

Social Demographics

We collected information on students’ age, gender, religious affiliations and parental education.

Data Analysis Plan

Three steps were followed in analyzing the data. First, given that the PAQ is relatively new in Indonesia and that no validation study has been conducted as yet, we used confirmatory factor analysis (CFA) to investigate the factorial structure of the PAQ. We assessed the goodness of fit for each model using various parameters. The general guideline is that a non-significant Chi square reflects an acceptable fit to the data. However, given its sensitivity to

sample size, we did not consider the Chi square in the current study. We instead used the Tucker Lewis Index (TLI) and Comparative Fit Index (CFI) for which values $>.95$ are considered to reflect an excellent fit, while values between .95 and .90 are indicative of an acceptable fit. In a multigroup analysis, the change in CFI is an important indicator for evaluating the suitability of hierarchically nested models; a CFI change of $<.010$ is taken to be supportive of the more restrictive model. To supplement the fit tests, the root mean square error of approximation (RMSEA) is also reported since it has been shown to be sensitive to model misspecification; values of $<.06$ are considered indicative of a good fit to the model while those between .06 and .08 are considered acceptable. Second, to investigate between group differences a series of *t* tests were carried out. Finally, path analytic procedures were used to investigate the relationship between background variables, parenting styles and adolescent mental health outcomes.

Results

The three-factor model proposed for the PAQ maternal and paternal scales by the authors had poor fit indices on the CFA (see Fig. 1 for the evaluated model and fit indices). An exploratory factor analysis (EFA) not reported here also confirmed that the structure could not be replicated in this sample. For both maternal and paternal models, the fit problems were related to the permissiveness scale. Few items loaded significantly on the permissiveness factor. To understand which of the subscales still had acceptable psychometric properties, we conducted CFAs for each separately. The authoritative scales had an acceptable fit for both maternal and paternal items, $\chi^2(33, N = 488) = 92.131, p < .001, \chi^2/df = 2.632, TLI = .906, CFI = .927, RMSEA = .058$, and $\chi^2(34, N = 488) = 93.99, p < .001, \chi^2/df = 2.888, TLI = .922, CFI = .940, RMSEA = .062$, respectively. For the maternal scales, the modification indices indicated the need to correlate some errors between items. To the extent that it allowed for comparison of the scores from these groups, we carried out a multigroup invariance analysis to check if the factor structure for the subscales for mothers and fathers was similar (see Table 1 for the results of the multiple group analysis). Results from this analysis indicate that we achieved partial scalar invariance. We removed constraints for one of the items (Item 11: ‘As I was growing up I knew what my mother expected of me in my family, but I also felt free to discuss those expectations with my mother when I felt they were unreasonable’) to achieve acceptable fit indices. The authoritarian scales had an acceptable fit for both maternal, $\chi^2(33, N = 488) = 92.131, p < .001, \chi^2/$

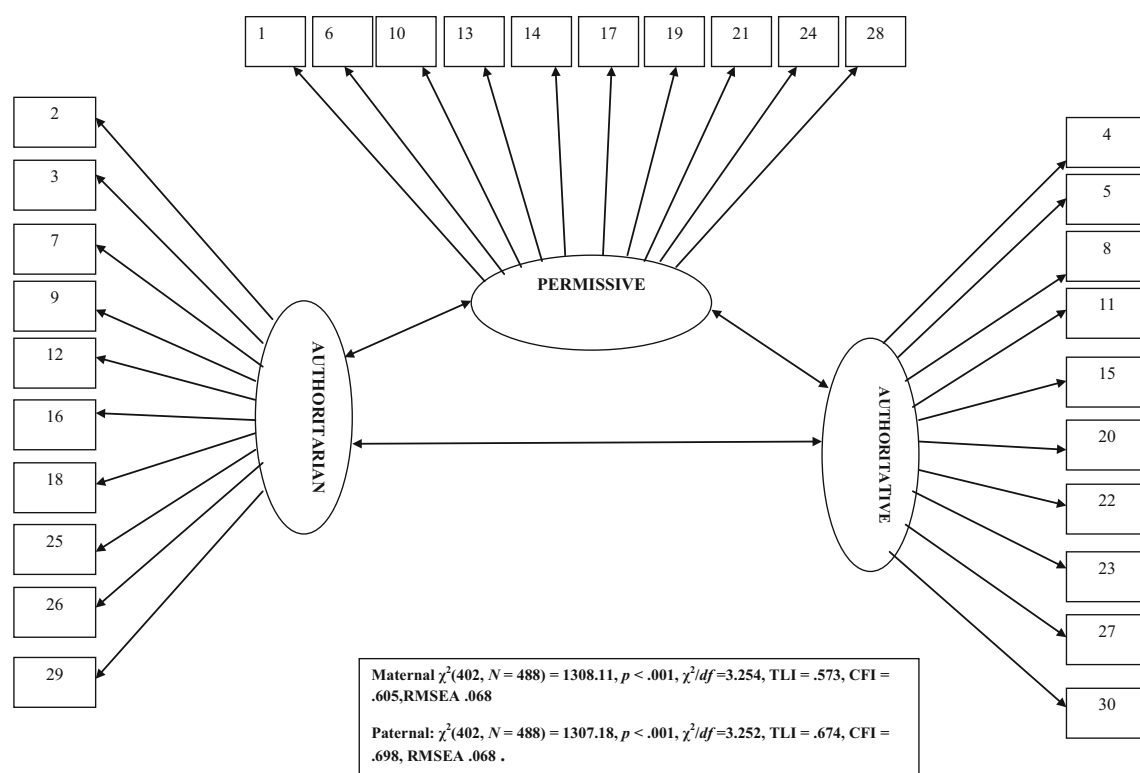


Fig. 1 Factorial structure of the PAQ and fit indices of this model in our samples

$df = 2.632$, $TLI = .906$, $CFI = .927$, $RMSEA = .058$, and paternal items, $\chi^2(34, N = 488) = 93.99, p < .001, \chi^2/df = 2.888$, $TLI = .922$, $CFI = .940$, $RMSEA = .062$. Moreover a multiple group analysis indicating that we achieved scalar invariance justified the comparison of scores from these two scales. The permissiveness subscale had a poor fit for both maternal, $\chi^2(35, N = 488) = 207.21, p < .001, \chi^2/df = 5.920$, $TLI = .495$, $CFI = .607$, $RMSEA = .101$; and paternal items, $\chi^2(35, N = 488) = 335.69, p < .001, \chi^2/df = 9.59$, $TLI = .264$, $CFI = .428$, $RMSEA = .133$. Further analyses, using both EFA and CFA indicated two problems with this scale. First, negatively worded items formed a different subscale; in analyses not documented here, modeling the impact of negatively worded items significantly improved the fit of the scales. Second, two of the items in this scale performed very badly, either by having very low or negative loadings; an example is item 1 (While I was growing up my mother felt that in a well-run home the children should have their way in the family as often as the parents do'). Given the generally problematic fit and a poor alpha (.51) for the permissiveness scale we did not use it any further. Further analyses therefore only focus on the authoritarian and authoritative subscales. Table 2 presents the alpha coefficients for each of the scales. The alphas for all our scales were above the recommended value of .70, with the

exception of the maternal authoritarian scale whose value was .66 (this scale was retained as it was because, apart from good fit indices in the structural equation modeling analyses, its alpha level was within the acceptable range).

There was a significant difference in the scores for mother's ($M = 39.19, SD = 5.45$) and father's authoritative/flexible style ($M = 37.92, SD = 5.93$), $t(487) = 6.06, p < .001$. These results suggest that Indonesian adolescents perceived their mothers to show more authoritative/flexible patterns than their fathers although the effect size was small (Cohen's $d = .22$). With the authoritarian subscale, fathers ($M = 30.23, SD = 6.12$) scored significantly higher than mothers ($M = 29.70, SD = 5.43$), $t(487) = 2.41, p < .016$. The effect size was small ($d = .09$). These results support the first hypothesis.

Table 2 presents a correlation matrix of background factors, parenting styles and child outcomes. We postulated a full mediation model in which background factors (age, gender, and parental education) would have a direct effect on parenting styles and parenting style would have a direct effect on psychological well-being (life satisfaction and mental health).

While the hypothesized model for the authoritative subscale showed a good fit to the data, several path coefficients were not significant. The model was modified to exclude non-significant paths (Fig. 1 shows the

Table 1 Invariance of paternal and maternal measures

Model	χ^2	df	$\Delta\chi^2$ (df)	χ^2/df	RMSEA	TLI	CFI	ΔCFI
Authoritarian model								
Unconstrained model	147.76	70	–	2.11	.034	.897	.920	–
Measurement weights	160.80	79	13.04(9)	2.03	.033	.904	.916	.004
Measurement intercepts (full scalar invariance)	177.80	89	17.00(10)	1.99	.032	.908	.909	–.005
Authoritative model								
Unconstrained model	223.29	70	–	3.19	.047	.895	.918	–
Measurement weights	247.21	79	24.92(9)	3.12	.047	.898	.910	.002
Measurement intercepts (partial scalar invariance)	274.12	88	26.91(9)	3.11	.047	.898	.901	.009

Table 2 Means, SDs and correlations between the key study variables

	Mean (SD)	Alpha	1	2	3	4	5	6
1 Maternal authoritativeness	39.19 (5.24)	.75	1					
2 Maternal authoritarianism	29.70 (5.43)	.66	.035	1				
3 Paternal authoritativeness	37.93 (5.93)	.75	.514**	.108*	1			
4 Paternal authoritarianism	30.23 (6.12)	.73	.070	.596**	.096*	1		
5 Life satisfaction	27.13 (4.63)	.78	.219**	.055	.252**	.061	1	
6 Mental health	11.50 (6.28)	.82	–.218**	.007	–.331**	–.046	–.417**	1
7 Parental education	–	–	.019	–.071	.030	.065	–.035	–.051

* $p < .05$; ** $p < .01$

non-significant paths using dashed lines). The modified model was tested and it showed a non-significant Chi square fit value ($\chi^2(1, N = 488) = 1.703, p = .977, \chi^2/df = 1.703$), pointing to an excellent fit. Other fit indices showed similar results, TLI = .977, CFI = .998, and RMSEA = .038, suggesting a good fit of the data to the hypothesized model (Kline 2005). The model explained 11 % of the variance in mental health outcomes and 7 % in life satisfaction. The model indicated that authoritative parenting was positively associated with psychological well-being. Our results support Hypothesis 3a; however, Hypotheses 2a–2c were not supported as authoritative parenting was unrelated to gender, education and child's age.

The hypothesized model for the authoritarian subscale showed a good fit to the data; however, since several path coefficients were not significant, we modified the model. Figure 2 displays the model with non-significant paths presented as dashed lines. The modified path analytic model excluding all non-significant paths was tested and the results showed a non-significant Chi square fit value ($\chi^2(4, N = 488) = 3.950, p = .413, \chi^2/df = .988$), which points to an excellent fit. Other fit indices showed similar results, TLI = 1.00, CFI = 1.00 and RMSEA = .000, confirming the fit of the data to the hypothesized model

(Kline 2005). The model indicated that in this sample, authoritarian parenting was not associated with psychological well-being. Neither Hypothesis 3b_i nor 3b_{ii} were supported, since authoritarianism did not have any relationship with psychological well-being. In addition, we observed only a partial confirmation of Hypothesis 2a–2c, as the background variables were only related to authoritarianism and some of the relationships were in an unexpected direction.

To investigate the degree of concordance in the use of different styles, we computed the absolute difference in scores between maternal and paternal parenting styles. The difference scores were then included in a path model in which they were predictors of life satisfaction and mental health. The results indicated that several path coefficients were not significant. The model was modified to exclude path coefficients that were not significant; Fig. 3 shows the non-significant paths using dashed lines. The modified path analytic model showed a non-significant Chi square fit value ($\chi^2(1, N = 488) = 1.819, p = .177, \chi^2/df = 1.819$), which points to an excellent fit. Other fit indices showed similar results, TLI = .956, CFI = .996, and RMSEA = .041. The model explained only 4 % of the variance in mental health and 1 % in life satisfaction. Our fourth

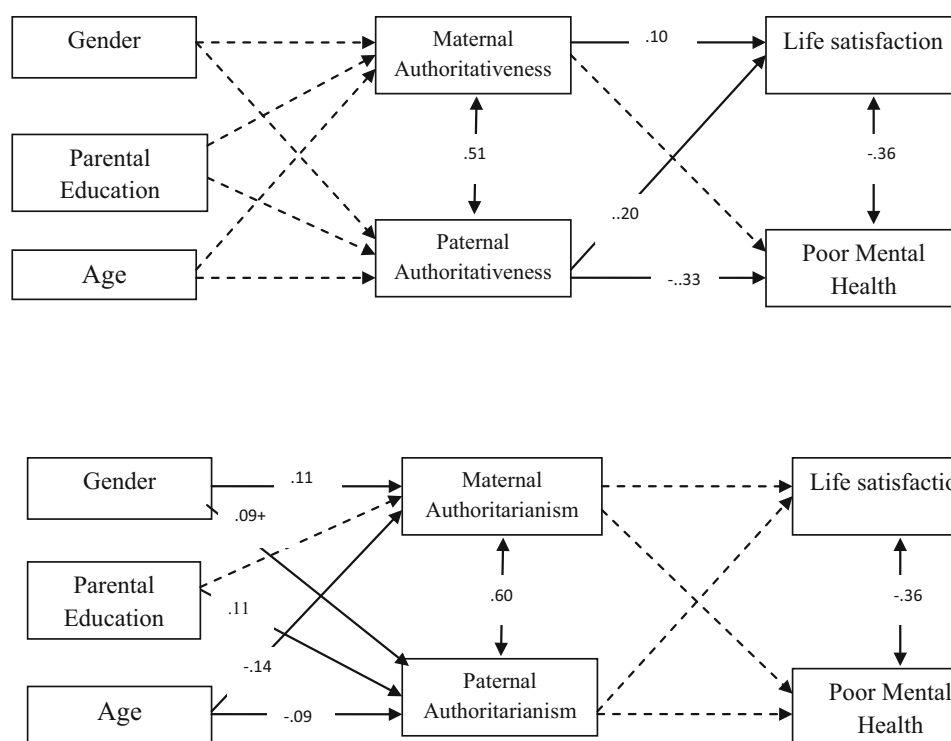
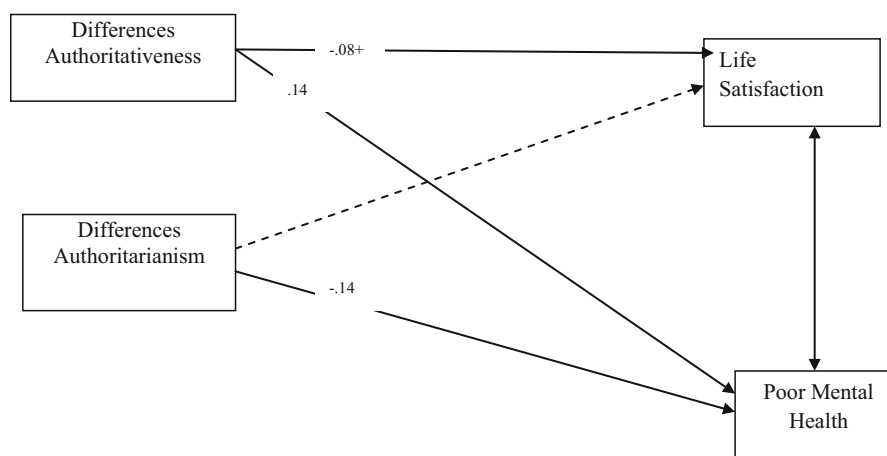


Fig. 2 The standardized coefficients on the antecedents and consequences of different parenting styles. *Note:* All path coefficients presented are significant at $p < .05$. + $p = .051$. Dotted arrows

represent non-significant coefficients, *solid arrows* represent significant coefficients. Female coded as 1, male coded as 2

Fig. 3 The standardized coefficients on the relationship between differences in scores between maternal and paternal parenting styles and psychological well-being. *Note:* + $p = .051$. The dotted arrows represents non-significant coefficients, *solid arrows* represent significant coefficients. Parenting styles were allowed to correlate and all these correlations were significant



hypothesis was only partially supported. The relationships between parental inconsistency and adolescent outcomes are much more nuanced than hypothesized as its association with psychological function seems to vary with parenting style.

Discussion

The current study aimed at investigating the influence of maternal and paternal parenting styles on the psychological

adaptation of Indonesian adolescents. We carried out a series of confirmatory analyses to examine the factorial structure of the PAQ. Consistent with earlier findings, such as a recent study in India by Raval et al. (2013), we were not able to replicate the underlying three-factor structure of the PAQ. In terms of psychometric properties, Raval et al. (2013) also observed that the authoritarian scale showed the best performance whereas the permissiveness scale was the most problematic. Our conclusions differ slightly from those of a recent study from Japan which was able to replicate the three-factor solution of the PAQ (Uji et al.

2013). Closer scrutiny however reveals that the authors excluded up to five items on the problematic permissiveness scale. We offer two potential explanations for the problematic nature of the permissiveness scale. Firstly, the permissiveness construct is probably not sufficiently clear as currently assessed by PAQ. The lack of a distinction between neglectful and indulgent parenting is potentially a problem, especially in a cross-cultural study. Secondly, item wording may also be potentially problematic. We were not able to examine the first explanation further in our sample; however, we found strong evidence to support the second explanation. Several negatively worded items within the permissive scale seem to create a spurious second factor within the scale. Future attempts to simplify the wording of this scale may produce a better measure of permissiveness in a cross-cultural context.

Consistent with our first hypothesis and evidenced by studies from elsewhere (Shek 1998), mothers were perceived to be more authoritative and permissive, whereas fathers were perceived to be more authoritarian. The observed results concur with our knowledge of the Indonesian cultural context. Social interactions are strictly regulated and the father, the main disciplinarian in the family, is shown respect and deference. Within such a context, fathers are likely to appear to be more authoritarian (i.e., less warm) than the mother. Our findings are however in contrast with findings from studies in other largely Muslim, collectivistic cultures like the Arab world, where no differences were observed between maternal and paternal style (Dwairy et al. 2006). Noteworthy is the findings from studies within cultures that are geographically and culturally similar to Indonesia. A study in Malaysia observed other differences in reported parenting styles (Elias and Yee 2009). Mothers in that study were more likely to display authoritarian styles compared to fathers. These differing patterns could be attributed to methodological issues. Elias and Yee (2009) classified parents according to the dimension in which they scored highest whereas we used the highest mean score to determine which parenting style was more common (we also did not allocate parents to specific styles based on scale means). The use of mean scores and midpoints is questionable because of its overreliance on sample-specific parameters. This can lead to misclassification especially in homogeneous samples where all scores may be relatively high or low (see Arends-Tóth and van de Vijver 2007 for the same classification issues in acculturation research).

The literature has not conclusively established what the preferred parenting style in non-western contexts is (Juang et al. 2013). A few studies have suggested that authoritarianism may be relatively common; however, other researchers have questioned the cultural invariance of the concept itself. For instance, Chao (1994) argues that one of the main issues

is that the construct as defined may not be relevant to the Chinese culture; rather, it may be better perceived as ‘training’. Our study generally supports the view that, like parents in the West, most Indonesian parents prefer to use the authoritative style. Three aspects are worth highlighting. First, is that some of the associations we noted in our study may be due to the urban nature of our sample. Compared to their rural counterparts, parents in Jakarta, being largely middle class, with higher educational levels and a relatively high exposure to the Western cultural context, were more likely to experience change in the way they structure their family life and their parenting behavior, in line with the family change model (Kagitçibasi 2005). Second, a study where vignettes (which ensure ecological validity and reduce measurement bias due to social desirability) rather than a standard scale (such as the PAQ) were used reported that Indian students preferred authoritative parenting over other styles (Barnhart et al. 2013). This convergence of results indicates that the preference for authoritative parenting may be more common in non-Western cultures than previously acknowledged. Third, the positive influence of authoritarian parenting that has been reported among the Chinese may be due to the role of training. Confucian cultures tend to value training and self-improvement highly; in such a context, authoritarian parents are probably more focused on teaching their children. Confucianism is not salient in Indonesia. Therefore, authoritarianism effects may be comparable to those in most parts of the world.

Our findings demonstrate that the authoritative parenting style is most likely to be associated with positive socialization outcomes across cultural contexts. Both maternal and paternal authoritative parenting styles were positively associated with mental health and life satisfaction of the adolescents. Contrary to earlier findings, we did not find any relationship between authoritarianism and psychological well-being (Chao 1994; Leung 1998). Whereas authoritarianism has an adverse effect in the West, these negative effects have not been reported through studies in several Middle-Eastern and Chinese samples. Two major lines of thinking may explain the observed patterns of results. First, it has been suggested that there is a need to interpret these results within the larger cultural context. In Western cultures where strict parenting practices may be construed as rejection and denial of love, children will have adverse outcomes due to the distress created by these practices. On the other hand, in cultures where parental authority and respect for hierarchy is the norm, children may expect and accept strict parenting. Based on this hypothesis, Dwairy et al. (2006; see also Dwairy 2008, 2010) posit that the negative impact of parenting styles adopted by parents may result from inconsistencies between the parenting style and the cultural context. Dwairy et al. (2006) concluded that the ‘inconsistency

between authoritarian parenting and the liberal culture in the west, rather than authoritarianism per se, constitutes the main reason behind the negative impact of authoritarian parenting in western society' (p. 23). Second, a new line of research indicates that the Western conceptualization of parenting styles may not adequately capture the construct in other cultural groups. Choi et al. (2013) observe that 'results present a nuanced and detailed picture of Korean American parenting as a blend of Western concepts of Authoritative and Authoritarian styles and show the coexistence of positive and-although limited-negative parenting' (p. 26).

Children experiencing inconsistency in parenting styles were more likely to experience poor mental health and lowered life satisfaction. These results are in line with empirical evidence (Dwairy 2010; Fletcher et al. 1999) and theory, particularly the family systems theory which proposes that mother's and father's parenting styles can interdependently contribute to adolescent outcomes. A more refined analysis of the different patterns of inconsistency or a study of the family parenting typology will provide a clearer understanding of the differential impact of various combinations of parenting styles. It is noteworthy that the amount of variance explained by our analysis was small. Given the differences in methods (both data collection and analytic), it is difficult to carry out a direct comparison of our findings with those of earlier studies. However, an examination of one of the most thorough investigations of this topic in the literature (Dwairy 2010) indicates that in general, the association between parental inconsistency and psychological functioning of adolescents was weak.

Fathers are often ignored in the parenting literature; yet, their influence on adolescent development may be stronger than mothers in some instances (Hoeve et al. 2009). Our dataset demonstrated a stronger relationship between paternal authoritativeness and poor mental health than that found for maternal authoritativeness. These results are consistent with findings from other populations. A meta-analysis of the influence of parenting on delinquency observed that although only 20 % of the studies included fathers in their samples, the lack of paternal support was found to be potentially more detrimental to outcomes than lack of maternal support (Hoeve et al. 2009). These results provide the impetus for more research involving fathers especially in understudied populations such as Indonesia.

Limitations

Several factors may limit the generalizability of the current findings. The first relates to the measurement instrument. The PAQ has been widely used in the investigation of Baumrind's typology of parenting across different cultural

contexts; however, despite using a comprehensive approach to evaluating the scale, we were not able to fully replicate its factor structure. Two characteristics of the scale may account for this failure. The first, with regards to item formulation, relates to the potential problems arising from the length of the items, complexity of wording, negatively worded and double-barreled items. The second, at the construct level could be the bias introduced through the use of items that are too similar to clearly differentiate between permissive and authoritative parenting styles. Our study findings therefore suggested that the PAQ does not seem to function well in the Indonesian context, and that a more emic approach is needed to develop satisfactory items. **Future research concerned with refinement of the items and scale is required if the scale is to be used in a non-Western context.**

Another limitation of this study is the use of an **exclusively urban sample**. This may have precluded the opportunity to obtain information on parenting styles and its influences from a more traditional Indonesian sample. **Future efforts should focus on a broader sample.** Moreover, our study involved only a limited number of antecedents and outcome variables. **The inclusion of more antecedent factors such as parental working hours, family size and structure may have explained a greater proportion of the variance observed, thus improving our study findings.** A study of other aspects like **academic achievement** could also potentially yield more information on the impact of different parenting styles on adolescent outcomes. Lastly, our use of cross-sectional data in the form of single informant reports (rather than observations) means we can only base our conclusions on associations rather than causations.

As measured by the PAQ, authoritative and authoritarian, but not permissive, parenting seems to be valid constructs the Indonesian context. A further refinement of the scales to adequately capture the different parenting styles is necessary. The differences between maternal and paternal parenting styles were small; however, their relationships to adolescent development point to meaningful and partially universal patterns (notably the positive associations of authoritative parenting with children's well-being and mental health) that may be specific to the context of our study (the lack of influence of authoritarianism). These results emphasize the need to study maternal and paternal parenting styles separately in order to understand their influence within a given socio-cultural context.

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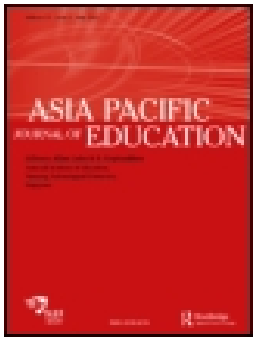
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To cite this article: Amal Alhadabi, Said Aldhafri, Hussain Alkharusi, Ibrahim Al-Harthy, Marwa Alrajhi & Hafidha AlBarashdi (2019): Modelling parenting styles, moral intelligence, academic self-efficacy and learning motivation among adolescents in grades 7–11 , Asia Pacific Journal of Education, DOI: [10.1080/02188791.2019.1575795](https://doi.org/10.1080/02188791.2019.1575795)

To link to this article: <https://doi.org/10.1080/02188791.2019.1575795>



Published online: 27 Feb 2019.



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Modelling parenting styles, moral intelligence, academic self-efficacy and learning motivation among adolescents in grades 7–11

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ABSTRACT

The current study investigated the associations between three maternal and paternal parenting styles, moral intelligence, academic self-efficacy and learning motivation in three serial mediation models. Omani adolescents enrolled in 7th to 11th grades ($N = 296$) responded to an online survey containing demographic items and scales measuring the variables noted above. Results of Path Analysis indicated that the three models had a good overall fit. In detail, the three paternal styles (authoritative, authoritarian and permissive) had direct associations with moral intelligence and indirect associations with learning motivation. However, only two maternal parenting styles (i.e., authoritative and authoritarian) correlated directly with learning motivation and these two styles did not associate with moral intelligence. All effects were in the hypothesized direction except the effect of authoritative maternal and paternal styles. Moral intelligence had a positive direct correlation with students' academic self-efficacy and learning motivation. Moral intelligence also mediated the negative associations between three types of fathers' parenting styles and students' motivation. Academic self-efficacy had a positive association with students' motivation. These findings provided useful insights about the various association between external factors (e.g., parenting styles), internal factors (i.e., moral intelligence and self-efficacy) and students' motivation among adolescents in middle and high schools.

ARTICLE HISTORY

Received 28 November 2017
Accepted 25 January 2019

KEYWORDS

Learning motivation; paternal and maternal parenting styles; moral intelligence; academic self-efficacy; adolescents

1. Introduction

Learning motivation specifies students' goals approaches, learning strategies and attitudes towards learning. Specifically, the literature has elucidated that learning motivation correlates positively with better learning strategies and analytical skills (Griep, Hess, & Trees, 2003), adopting mastery achievement goals (i.e., a desire to develop a competence, master a skill and understand the learning material; Harackiewicz, Durik, Barron, & Linnenbrink, 2008) and accomplishing better academic performance (Alrajhi, Alkharusi, & Aldhafri, 2016). Yet students hold diverse motives in term of quantity and quality.

Multiple factors found to be influencing learning motivation have been explored in several theoretical and applied studies. According to the Ecological Theory, some factors are environmental such as parenting styles, teacher–student relations and peers' interaction (Bronfenbrenner, 1979). In particular, paternal and maternal parenting styles are fundamental contributors in the students' development and play a key role in learning motivation. That is, parental autonomy support correlates with high grades, high standardized tests scores and intrinsic motivation (Deci,

Driver, Hotchkiss, Robbins, & Wilson, 1993). Froiland (2011) demonstrated that students of parents who received autonomy supportive communication techniques had a higher intrinsic motivation to do homework compared with the control group.

However, the quality of parenting style consequences depends greatly on type of the dominant parenting style. That is, three parenting styles (i.e., authoritative, authoritarian and permissive) have been proposed (Baumrind, 1971). Adolescents of authoritative parents are more willing to engage in exploratory behaviour, are more self-reliant and are intrinsically motivated (Gonzalez, Holbein, & Quilter, 2002). Adolescents of authoritarian families are more dependent on authority figures (e.g., parents) for making decisions, are less likely to engage in exploratory behaviours and adopt performance approach goals (i.e., attaining favourable judgements of competence), resulting in surface learning (Aldhafri & Alharthy, 2016; Duff, 2004). The students of permissive families lack self-reliance and are less likely to persist in learning tasks (Aunola, Stattin, & Nurmi, 2000). In light of the above, these three parenting styles have been demonstrating inconsistent effects on learning motivation for both maternal and paternal styles (Cheung & McBride-Chang, 2008; Gonzalez et al., 2002).

Most critically, various personal qualities mediate the aforementioned ramifications of negative rearing and strengthen the effects of positive rearing styles. According to Social Cognitive Theory, personal qualities along with external factors (i.e., parenting styles in this case) shape students' motivation (Bandura, 1986). In the current study, the main scope of interest is oriented to two personal qualities, which are moral intelligence and academic self-efficacy. Clarken (2009) indicated that moral intelligence is a one of the individualistic factors that determine directly students' academic and personal behaviours. That is, it reflects the ability to apply ethical principles to goals and actions. High levels of moral intelligence motivate students to acquire knowledge in a proper way and reduce the likelihood of academic dishonesty (Bélanger, Leonard, & LeBrasseur, 2012). Indirectly, it mitigates the negative ramifications of inappropriate parenting styles on students' outcomes (Alreeny, 2009). Related to academic self-efficacy, literature has illustrated that students with positive self-image and high self-efficacy have higher levels of long-term educational goals, persist longer with difficult activities, enjoy their academic work more and set challenging academic goals (Areepattamannil, Freeman, & Klinger, 2011; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005).

Examining the factors affecting adolescents' motivation specifically in Oman is a priority as a starting point to increase adolescents' positive engagement and academic achievement. According to TIMSS (Trends in International Mathematics and Science Study) 2015 statistics (Mullis, Martin, Foy, & Hooper, 2016), Oman is at the intermediate level for both 4th ($M = 431$) and 8th grades ($M = 455$) in science, which applies to many developing countries in the Middle East. Despite the fact that there was growth in Omani students' performance from 2011 to 2015, still the intermediate benchmark is an alarming indicator. Hence, Omani educational policymakers and researchers seek to develop various initiatives for enhancing students' learning motivation. Correspondingly, understanding the role of external and personal factors affecting motivation is necessitated specifically among adolescents in 7th to 11th grades, who undergo many developmental changes (i.e., cognitive, emotional and physical development). We argue in this paper that some personal mediators might help in understanding the associations between three parenting styles and students' learning motivation. Therefore, the current study aimed to determine the associations between parenting styles, moral intelligence, academic self-efficacy and learning motivation. In particular, the direct and indirect associations between the above-mentioned variables among Omani adolescents were investigated in a serial mediation model.

2. Literature review

2.1 Learning motivation

Learning motivation is a vital component to ensure a successful academic performance. That is, it shapes middle and high school students' willingness to expend effort, take challenges and learn

despite any potential chance of failure (Kiemer, Gröschner, Pehmer, & Seidel, 2015). Brophy (2004) defined motivation as a combination of thoughts, skills and values that promote students' engagement in learning activities. In the current study, learning motivation represents an intrinsic and extrinsic state that fosters students' tendencies to adopt certain behaviours which contribute positively in achieving academic objectives and enjoying deep learning (Aldhafri & Alhadabi, 2015). According to the self-determination theory, there are two types of motivation: intrinsic and extrinsic motivations (Ryan & Deci, 2010). Intrinsically motivated students show inherent interest in learning activities and derive their tendency to learn from arousal, interest and curiosity; whereas extrinsically motivated students exhibit interest in the learning process due to external impetus like rewards, grades and the approval of parents and teachers (Gorges, Maehler, Koch, & Offerhaus, 2016).

Clearly, motivation associates with students' outcomes academically, emotionally and behaviourally. At the academic level, motivated students embrace cognitive and behavioural practices like asking questions, solving problems, seeking advice, mastering learning strategies, and participating in classes, labs and study groups (Schunk, Pintrich, & Meece, 2008). Such practices foster higher academic performance (Bryan, Glynn, & Kittleson, 2011). Among 10th grade students, Schumm and Bogner (2016) clarified a linear relationship between motivation and content knowledge. At the emotional and behavioural levels, motivation correlates positively with students' engagement (Martin, Ginns, & Papworth, 2017). Markedly, Martin et al. (2017) presented a wheel explaining the impact of adaptive motivation (i.e., self-efficacy and mastery goals) on increasing adaptive engagement (i.e., persistence and task management). In other words, highly motivated students are proud of their accomplishments and they demonstrate active engagement in the academic tasks.

In contrast, maladaptive features of motivation (e.g., anxiety and failure avoidance) lead to negative engagement such as disengagement and self-handicapping (Martin et al., 2017). Alivernini and Lucidi (2011) underlined that self-determined motivation was the best predictor of 9th to 13th grades students' intention to drop out of school. Moreover, motivation influences absenteeism (Moore, Armstrong, & Pearson, 2008). The subsequent literature review discusses the factors affecting learning motivation, starting from contextual to personal/academic variables in a sequential manner. Furthermore, moral intelligence is reviewed before academic self-efficacy because it is a personal/social variable under the direct influence of parents' core values and rearing style; whereas academic self-efficacy relates directly to learning motivation.

2.2 Parenting styles

Parenting styles are defined as patterns of rearing, or parents' regular approach to responding to and interaction with children (Gamble, Ramakumar, & Diaz, 2007). Baumrind's (1971) theory seems to be a powerful psychological conceptualization that has been adopted widely across individualistic and collective cultures (e.g., Aldhafri, 2011; Kokkinos & Hatzinikolaou, 2011). The parenting styles are classified based on two dimensions, which include (1) responsiveness (i.e., warmth, supportiveness, fostering individuality and self-regulation), and (2) demandingness (i.e., control, supervision and disciplinary efforts; Alkharusi, Aldhafri, Kazem, Alzubaidi, & Al-Bahrani, 2011).

Correspondingly, three styles are mainly recognized (i.e., authoritative, authoritarian and permissive), which affect children's growth to different degrees. Authoritative parents show a balance between responsiveness and control; that is, they encourage autonomy and rely on explanation of rules rather than emphasizing strict obedience. Therefore, their adolescents are more self-reliant and intrinsically motivated (Gonzalez et al., 2002). However, authoritarian parents, practise more control and a low degree of responsiveness, which imply rules with punitive consequences for disobedience. Adolescents from authoritarian families are less self-reliant and they depend on authority figures for making decisions. As such, they are less likely to engage in exploratory and challenge-seeking behaviour. Permissive parents provide a high

degree of responsiveness and exert little control over children's behaviour; that is, those adolescents usually lack self-reliance and have little tolerance for frustration. Therefore, they are less likely to persist in learning tasks (Aunola et al., 2000).

Numerous studies indicated that maternal parenting styles were the main scope of investigation in the early period of examining parenting (Hoeve, Dubas, Gerris, van der Laan, & Smeenk, 2011; Winsler, Madigan, & Aquilino, 2005). However, there has been an increased interest in investigating both maternal and paternal styles (Hoeve et al., 2011). For instance, the literature demonstrates that parents who use effective authoritative parenting strategies tend to have spouses with a similar parenting style, whereas, parents using less effective parenting strategies tend to disagree with their spouses (Deal, Halverson, & Wampler, 1989). Winsler et al. (2005) revealed just modest similarity in parenting styles between two parents within the same home. To elaborate further, fathers perceived their spouses to be more authoritative, more permissive and less authoritarian than themselves, whereas mothers only perceived themselves to be more authoritative than their spouses. In particular, parents who shared similar parenting styles were more accurate at reporting on their spouse's parenting styles than parents with differing styles (Winsler et al., 2005). Thus, the literature has suggested investigating models with similar maternal and parental styles.

Significantly, parenting styles have inconsistent associations with academic outcomes and specifically motivational manifestations like autonomous motivation, learning attitudes, achievement goals orientations, creativity and academic achievement (Froiland & Oros, 2013; Gurland & Grolnick, 2005). For the authoritative families, Aunola et al. (2000) showed that their adolescents applied adaptive achievement strategies like self-enhancing attribution. Simultaneously, these adolescents showed low levels of failure expectations, task-irrelevant behaviour and passivity. Hoang (2007) delineated that these students reported more intrinsic reasons for completing assignments. That is, authoritative parenting served as the strongest individual predictor of mastery goals, leading to deep learning (Lau & Lee, 2008). Among 1599 Omani adolescents, Aldhafri (2011) clarified that authoritative parenting styles were effective in predicting adolescents' school well-being directly and indirectly through academic self-efficacy.

In contrast, previous research has indicated that the other two parenting styles have negative ramifications on adolescents' academic outcomes. That is, a number of studies have found that authoritarian parenting is a positive predictor of a performance approach orientation. Performance approach goals reflect students' attempts to learn in order to score the highest grade, and to be valued by their family, teachers and peers. As such, these adolescents tend to acquire surface and strategic learning (i.e., aimed at maximizing academic performance with little interest in deep learning; Duff, 2004). Concurrently, adolescents with performance goals reduce effort in the face of failure and have low task enjoyment (Bodmann, 2008).

Comparatively, adolescents from permissive families applied maladaptive strategies such as high levels of task-irrelevant behaviour, passivity and self-handicapping (Aunola et al., 2000). Gonzalez et al. (2002) articulated that these children practised less persistence and performed lower, relative to children of authoritative parents. In an Omani context, Aldhafri and Alharthy (2016) illustrated that both authoritarian and permissive parenting styles affected the diffusion dimension of academic identity. In other words, students who live with high control (i.e., authoritarian families) or high responsiveness (i.e., permissive families) are less likely to adopt identity decisions, or take constructive actions in orienting their goals.

Likewise, parenting styles affect adolescents' social adjustment and well-being. That is, adolescents from authoritative families show better psychosocial development, less anxiety, active problem coping and less delinquent behaviour (Alkharusi et al., 2011; Gonzalez et al., 2002; Hoeve et al., 2011; Wolfradt, Hempel, & Miles, 2003). The literature emphasizes that authoritative parents' teenagers eat more fruit, drink less alcohol, smoke less and are less likely to use marijuana (Huver, Otten, de Vries, & Engels, 2010). Arabic literature supports the positive association between authoritative style and moral intelligence (Alreeny, 2009; Mohammed, 2012). Authoritative style predicted healthy well-being directly and indirectly through physical self-concept among Omani

adolescents (Aldhafri, 2011), whereas, several studies have revealed that authoritarian and permissive parenting styles associate with multiple negative behaviours. Hence, the literature highlights that permissive parenting correlates with higher levels of delinquency in males and females (Hoeve et al., 2011). The perceived parental stress correlates positively with anxiety, alcohol abuse and high levels of frustration and criminal behaviour among adolescents (Aldhafri, 2014; Wolfradt et al., 2003). Mohammed (2012) emphasized that some moral qualities like empathy attenuated the ramifications of harsh parenting styles in the Arabic context.

2.3 Moral intelligence

Moral intelligence is a major quality that determine adolescents' behaviour in the learning environment and social context. Nevertheless, the literature has stated that moral intelligence is one of the under-examined concepts compared with cognitive and emotional intelligence, despite its substantive potential to improve adolescents' learning and behaviours (Clarken, 2009). Borba (2001) elucidated that moral intelligence is the capacity to understand right from wrong, to have strong ethical convictions and to act on them to behave in a right and honourable way. The literature has identified diverse components of moral intelligence. Some scholars clarify three components (i.e., cognition, emotions and behaviour; Eysenck, 2004; Sigelman, 1999). Lennick and Keil (2005) identified 4 facets (i.e., integrity, responsibility, compassion, and forgiveness) and 10 competences, whereas Borba (2001) presented seven values (i.e., empathy, conscience, self-control, respect, kindness, tolerance and fairness). The current study adopted Borba's seven values to build a tool measuring moral intelligence among adolescents for multiple reasons. First, Borba's values illustrate a comprehensive framework of moral intelligence. Second, to date there has been a lack of studies examining this framework in the Omani context. Nevertheless, investigating the seven values more fully is not within the scope of the current research.

Generally, moral values determine adolescents' cognitive and behavioural attitudes towards life dilemmas. For instance, the literature has implied that moral values predict decision-making among middle adolescents and young adults (Krettenauer, Colasante, Buchmann, & Malti, 2014) and subsequent rule internalization (Aksan & Kochanska, 2005). The degree of adopting these values underlines adolescents' concerns about the issues of justice, equality, abstaining from harm, and caring for others (Eisenberg, Spinrad, & Morris, 2014). Additionally, several studies have indicated that moral intelligence correlates with self-concept (Khalil, 2015), self-efficacy (Hassani & Shohoudi, 2016), self-esteem (Borba, 2001) and social behaviour at school (Abu Awad, 2011).

Mostly importantly, moral intelligence associates with adolescent academic outcomes too. Hoseinpoor and Ranjdoost (2013) clarified that moral intelligence – specifically honesty, forgiveness and compassion – associates positively with students' achievement among 1600 high school students. Niemi (2016) revealed that children's capacities to be collaborative and playful in classroom activities highlight their competences for moral autonomy and responsibility in the absence of a teacher. Nevertheless, few studies have examined the relationship of moral intelligence with academic outcomes, specifically learning motivation.

2.4 Academic self-efficacy

Academic self-efficacy has been receiving more focus in educational literature (Huang, 2013; Mohammadyari, 2012). It is defined as "personal judgments of one's capabilities to organize and execute courses of action to attain designated types of educational performances" (Zimmerman, 1995, p. 203). Students who have high academic self-efficacy typically have better attendance in class, spend more hours studying, misbehave less during class and have higher academic satisfaction and engagement (Sivandani, Koohbanani, & Vahidi, 2013). Moreover, Schnell, Ringeisen, Raufelder, and Rohrmann (2015) expressed that students with high academic self-efficacy tend to set mastery goals, do more challenging tasks and obtain better grades. According to Schwarzer's framework, high-efficacious students set high

goals. As the value of these goals increases, the more effort and persistence these students invest to achieve them (Luszczynska & Schwarzer, 2005). In other words, academic self-efficacy influences effort investment and modifying learning strategies, which enable students to achieve learning tasks and show better performance (Schnell et al., 2015). Significantly, academic self-efficacy correlates with multiple students' outcomes. In more detailed terms, academic self-efficacy skills (i.e., self-evaluation, self-directing and self-regulation) are significant predictors of academic achievement among high school students (Motlagh, Amrai, Yazdani, Abderahim, & Souri, 2011) and, as one study found, amongst 935 students aged from 11 to 18 years through middle and high school (Carroll et al., 2009).

Academic self-efficacy influences students' attitudes towards academic tasks. Specifically, academic self-efficacy had positive relationships with academic aspiration of middle and high school students (Carroll et al., 2009). Additionally, analysing the data of 605 junior students clarified that competence and relatedness satisfaction predicts learning engagement (Zhen et al., 2017). Furthermore, academic self-efficacy mediated the associations between both competence and relatedness satisfaction to learning engagement. However, on the other hand, low self-efficacy evokes anxiety (Mills, Pajares, & Herron, 2006) and disengagement or school dropout (Ouweneel, Le Blanc, & Schaufeli, 2014).

2.5 Study model

In light of the above-mentioned review, multiple factors formulate adolescents' learning motivation. Theoretically, many frameworks explain these factors such as social cognitive theory, ecological theory and self-determination theory. These theories present different though interconnected explanations about the mechanism by which factors influence students' outcomes, specifically learning motivation. Generally, some factors are external and belong to the microsystem level of Bronfenbrenner's ecological framework. That is, the quality of these interactions plays a role in shaping adolescent perceptions, attitudes and behaviours. Hence, the literature has revealed that the parenting style is one of the main interactions on the microsystem level, resulting directly in a positive or negative effect on account of the dominant parenting style. This indicates that encouraging positive parenting styles (i.e., authoritative) fosters high academic motivation, achievement and social adjustment (Aldhafri, 2014; Froiland, 2015; Gonzalez et al., 2002), whereas negative parenting styles (i.e., authoritarian and permissive styles) handicap adolescents' academic and social growth to some extent (Hoang, 2007; Hoeve et al., 2011).

On the contrary, Bandura's theory emphasizes the role of personal variables in the associations between contextual variables (i.e., parenting styles) and adolescent behaviour (i.e., learning motivation). In the current study, these personal qualities were moral intelligence and academic self-efficacy. Collectively, the above-mentioned review has suggested that having higher sense of moral intelligence and academic self-efficacy strengthens the effects of authoritative style and limits the unfavourable effects of authoritarian and permissive parenting on motivation. That is, these personal variables play a mediating role in the association between parenting and motivation.

The positionality of two mediators in the sequential model is determined based on the theoretical foundation. First, moral intelligence is under the direct influence of parenting styles as students move from childhood to adolescence. That is, there is growth in the abstract and complex moral reasoning and integration of affect and cognition in children's morality from middle childhood to early adolescence (Bilsky et al., 2013; Daniel, Dys, Buchmann, & Malti, 2014; Hardy & Carlo, 2011). Constructive parenting styles foster a high level of moral intelligence (Kiser & Black, 2005; Zadanbeh & Zakerian, 2011). Second, moral intelligence correlates with general self-efficacy (Hassani & Shohoudi, 2016) and moral qualities (e.g., empathy) which mitigate the consequences of unconstructive parenting styles (Mohammadyari, 2012). Third, multiple studies have disclosed the direct associations between parenting styles, academic self-efficacy and learning motivation (e.g., Aldhafri, 2011; Huang, 2013; Mohammadyari, 2012; Schnell et al., 2015). Nevertheless, little is known about the correlations

between parenting styles, moral intelligence and learning motivation (e.g., Hoseinpoor & Ranjdoost, 2013). Most importantly, none of the studies investigated all the study variables.

Furthermore, a recent body of literature emphasizes the significance of investigating parental and maternal styles simultaneously (Hoeve et al., 2011; Winsler et al., 2005). That is, literature has suggested investigating models with similar maternal and parental styles. In a systematic review of a large body of studies investigating parenting styles, almost 64.15% of the parenting studies investigated maternal and paternal parenting styles from the perspective of the parents themselves, yet only 3.77% of the studies assessed the perception of children (Olivari, Tagliabue, & Confalonieri, 2013). Findings also illustrated that only 11.32% of studies examined pre-adolescent /adolescent samples despite the criticality of this developmental stage, at which the quality of the parent–adolescent interaction and relationship shapes the prosocial, antisocial and academic outcomes. Aldhafri (2014) indicated variations in the predictive values of each of the maternal and paternal parenting styles among the Omani sample. Therefore, the current study proposed three sequential conceptual models. Each model has consistent paternal and maternal parenting styles from the perspective of adolescents.

In summary, the proposed three models aimed to investigate the direct and indirect effect of paternal and maternal parenting styles, moral intelligence and academic self-efficacy on the middle and high school adolescents' learning motivation. These models are: (1) authoritative styles (see Figure 1 – Model 1), (2) authoritarian styles (see Figure 1 – Model 2), and (3) permissive styles (see Figure 1 – Model 3). The directions are shown by one-way arrows between the study's variables. The models were examined using a series of hypotheses (H) detailed below.

3. Hypotheses

(H1) Direct and Indirect Hypotheses:

(H1A) Authoritative Paternal (F_tive) and Maternal (M_tive) parenting styles have positive direct and indirect relations with adolescents' Learning Motivation (MTL).

(H2B) Authoritarian Paternal (F_ran) and Maternal (M_ran) parenting styles have negative direct and indirect associations with adolescents' Learning Motivation (MTL).

(H2C) Permissive Paternal (F_Perm) and Maternal (M_Perm) parenting styles have negative direct and indirect associations with adolescents' Learning Motivation (MTL).

(H3D) Authoritative Paternal (F_tive) and Maternal (M_tive) parenting styles correlate positively with Moral Intelligence (MI).

(H4E) Authoritarian and Permissive Paternal and Maternal parenting styles have negative direct associations with Moral Intelligence (MI).

(H5G) Moral intelligence (MI) has direct positive associations with students' Learning Motivation (MTL) and Academic Self-Efficacy (ASE).

(H6H) Academic Self-Efficacy (ASE) has a positive direct effect on students' Learning Motivation (MTL).

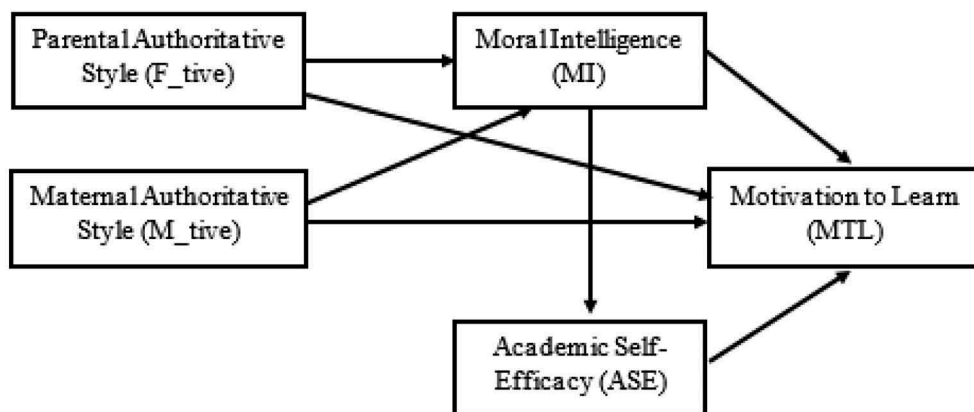
(H2) Serial Mediation Hypothesis:

(H2A) Parenting styles have indirect effects on learning motivation through multiple mediators including Moral-Intelligence (MI) and Academic Self-Efficacy (ASE).

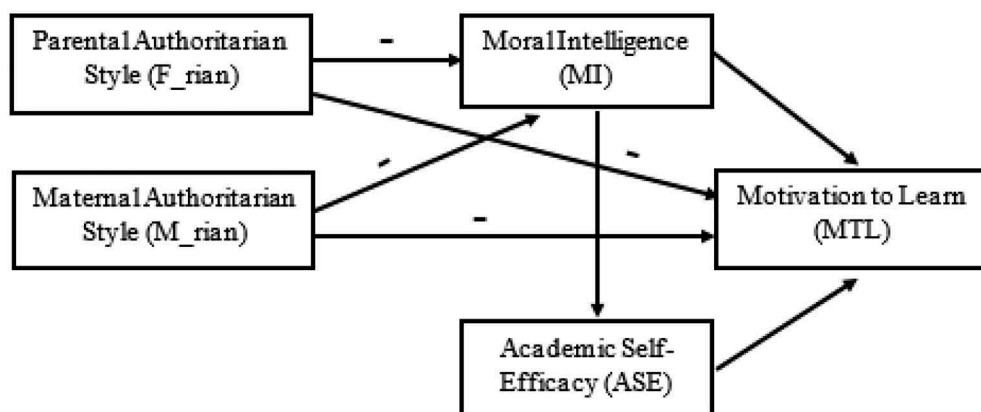
4. Methods

4.1. Participants and procedures

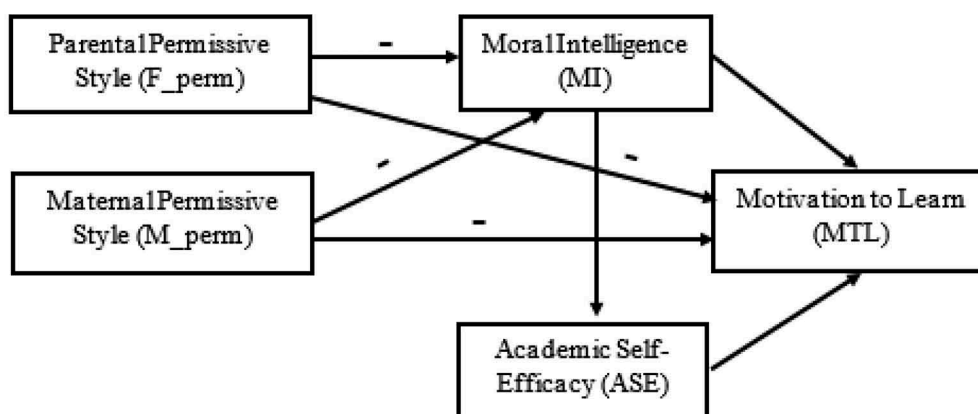
After obtaining approval from the Ministry of Education Research Ethics committee, invitations were sent through emails to middle and high school principals in two governorates (i.e., South Al-Batinah and Muscat). The invitation presented an overview of the study aims, duration of the survey, link to an online Quatricks survey, and procedures to preserve privacy and confidentiality of



Model 1



Model 2



Model 3

Figure 1. Conceptual three initial models.

the responses. Furthermore, the invitations confirmed that participation was voluntary and gave assurances that no risk was associated with the study. Additionally, there was no compensation for participation. There were two reasons for selecting these governorates. First, Muscat is an urban and modern governorate, while South Al-Batinah has many rural areas. The governorates are representative of the Omani regions' geographical structure. Second, both governorates have good accessibility to an Internet network connection, which facilitated the completion of the online survey.

The sample contained 296 students from middle and high schools in grades 7–11 from the South Al-Batinah and Muscat governorates in the Sultanate of Oman. There were 126 (42.6%) of lower grades of middle school students (i.e., 7th and 8th grade) and 170 (49.95%) of upper grades of middle and high school students (i.e., 9th, 10th and 11th grade). The mean age of the sample was 13.66 ($SD = 1.62$). Furthermore, there were 117 (39.5%) males and 179 (60.5%) females. Data were collected in the academic year 2016/2017.

4.2. Measures

The current study administered an online survey that consisted of five sections including: (1) demographic information; (2) short version of the Parental Authority Questionnaire (Alkharusi et al., 2011); (3) Moral Intelligence Scale (Abu Awad, 2011); (4) Academic Self-Efficacy Scale (Alhadabi, 2017); and (5) short form of Motivation to Learn Scale (Aldhafri & Alhadabi, 2015). Demographic information included items such as grade, gender and educational governorate.

The short version of the Parental Authority Questionnaire consists of 20 items and has 2 forms (i.e., father and mother forms). Items reflect three parenting styles, which include (1) authoritative style, (2) authoritarian style, and (3) permissive style. The questionnaire uses a 5-point Likert scale ranging from "Strongly Disagree" (Coded 1) to "Strongly Agree" (Coded 5). Internal consistency coefficients were noted to be good for father's and mother's forms (Cronbach's α ranging from .65 to .75).

In the current study, the scale showed relatively good reliability for the father's form (Cronbach's $\alpha = .76$ for the total scale and for the dimensions are Authoritative: $\alpha = .61$, Authoritarian: $\alpha = .58$, and Permissive: $\alpha = .51$). The reliability of the mother's form (Cronbach's $\alpha = .77$ for the total scale and for the dimensions are Authoritative: $\alpha = .60$, Authoritarian: $\alpha = .54$, and Permissive: $\alpha = .53$). Questions have been raised about the reliability of sub-dimensions. The literature provides a justification for such relatively low values. Olivari et al. (2013) articulated in their systematic meta-analysis of 53 studies that the magnitude of coefficient of internal reliability (i.e., Cronbach Alpha) is the greatest for authoritative style followed by authoritarian and lastly permissive style. This pattern is applied to the parenting styles' coefficients in the current study. Most importantly, Olivari et al.'s (2013) findings showed that Cronbach Alpha values of the sub-dimensions were considerably lower (i.e., below .65) among European, African, Asian and Oceania samples compared to American and Canadian samples. For instance, the lowest reliability values ranging from (.58-.50) for the permissive dimension (Kern & Jonyniene, 2012).

The second measure, the Moral Intelligence Scale, consists of 61 items rated on a 5-point Likert scale ranging from "Strongly not applied to me" (Coded 1) to "Strongly apply to me" (Coded 5). The items are distributed among seven dimensions: empathy, conscience, self-control, respect, kindness, tolerance and fairness. Yet the current study was concerned with total scale score and not the dimensions. The scale had high internal consistency reliability from previous studies (Cronbach's $\alpha = .83$; Abu Awad, 2011) and a high reliability in the current study sample (Cronbach's $\alpha = .96$).

The third measure is a seven-item scale that measures academic self-efficacy features (Alhadabi, 2017). The items reflect students' beliefs about their academic competencies. Examples of items include: "I'm capable to excel in the class" and "I own strong capability to get high grades in my study". It adopts a 5-point Likert scale ranging from "Strongly not applied to me" (Coded 1) to "Strongly apply to me" (Coded 5). Internal consistency was noted

to be good (Cronbach's $\alpha = .80$; Alhadabi, 2017). Significantly, the scale performed well among the study participants (Cronbach's $\alpha = .81$).

The short version of the Motivation to Learn Scale consists of 21 items reflecting a range of learning motivation features. The shortened version was modified from Aldhafri and Alhadabi's (2015) scale of motivation to learn science. This scale was developed based on the theoretical insights of reciprocal interaction in the social cognitive theory (Bandura, 1986) and two types of motivation in self-determination theory (i.e., intrinsic and extrinsic motives; Ryan & Deci, 2010). Aldhafri and Alhadabi (2015) illustrated that students' academic behaviours (e.g., academic engagement) are influenced by the type and level of their inner, intrinsic motives (e.g., interest and curiosity) and external impetus (i.e., teachers' approval and grades). The original scale consisted of 46 items measuring general motivation to learn features among adolescents. This scale uses a 5-point Likert scale ranging from "Strongly not applied to me" (Coded 1) to "Strongly apply to me" (Coded 5). Examples of items include: "I feel satisfied when my teachers are pleased with my performance", "I enjoy learning despite it is difficult" and "I study better when I got high grades in exams". It had a high internal consistency reliability from previous studies (Cronbach's $\alpha = .94$; Aldhafri & Alhadabi, 2015) and a good reliability in the current study sample (Cronbach's $\alpha = .89$).

4.3. Data analysis

Path Analysis (PA) was used to analyse the data in the current study. PA has five main model steps: (1) Specification; (2) Identification; (3) Estimation; (4) Testing; and (5) Modification. In the first step, the model was specified using the existing literature as noted in the previous section. For the second step, Schumacker and Lomax (2010) stated that the model should be over-identified or just-identified using a criterion for model identification. That is, the number of distinct values in the sample matrix S should be greater or equal to the number of free parameters estimated in the model. For each in the current study, there are 15 distinct values in the matrix S and 13 free parameters. This indicates that the model has been identified properly and is over-identified. In the third step, a model estimation method is selected after examining the descriptive statistics for each variable. Data screening (e.g., missing data, outliers, etc.), descriptive statistics and Pearson correlations were analysed in Statistical Package for Social Sciences (SPSS) for Windows Version 24.0 before conducting PA (Tabachnick & Fidell, 2007). Based on the above information, Maximum Likelihood (ML) was selected as the estimation method using LISREL 9.0 to test the model, identify the fit indices, and calculate the direct and indirect relationships.

Prior to model testing, the adequacy of the sample size was examined. Kline (1998) suggested that the sample size should be 10 to 20 times as many participants as parameters and at least 200 cases to have sufficient power. Additionally, Hoyle (1995) recommended a minimum sample size of 100 to 200 to ensure confidence in the Goodness-of-Fit (GoF) statistics. The current study had 13 parameters, which indicates that the current sample exceeds Kline's and Hoyle's recommendations.

In the testing step, several GoF indices were examined to evaluate the model's fit to the data. These indices included Chi-Square, Root-Mean-Square-Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Normed Fit Index (NFI) and Standardized Root-Mean-Residual (SRMR). According to Kremelberg (2009), a χ^2 (i.e., divided by the df) value of five or less is indicative of good model fit. For the RMSEA, if values are $\leq .05$, then the model fit is considered good. Above $.05$, RMSEA values ranging to $.08$ are considered acceptable. The model is considered to be marginal if the RMSEA is from $.08$ to $.10$ (Schumacker & Lomax, 2010). Comparatively, the SRMR should be $< .05$ to demonstrate a good model fit. The GFI, AGFI and NFI fit indices have the same criterion where 1 represents perfect fit and 0 indicates no fit. Models with values $\geq .90$ are considered acceptable and values $\geq .95$ are good (Hu & Bentler, 1999; Schumacker, & Lomax, 2010). In addition to the above indices, statistically significant direct and indirect effects ($p < .05$) were interpreted. Finally, the last step in the process is modification, in

which poorly fitting models are revised if there are non-significant paths or marginal to poor model fit indices (Schumacker & Lomax, 2010).

Examining the direct, indirect and total effects assists the identification of mediation types (i.e., mediation and suppression). Despite the great similarity between the two types, the literature has supported the differences between the two types in the path analysis model. That is, mediation analysis aims to examine whether the intermediate variable attenuates the association between the predictor and the outcome (i.e., resulting in a mediation effect) or strengthens the association between the predictor and the outcome (i.e., resulting in a suppression effect; MacKinnon, Fairchild, & Fritz, 2007). That is, the suppressor variable is

a variable which increases the predictive validity of another variable (or set of variables) by its inclusion in a regression equation. Thus, a situation in which the magnitude of the relationship between an independent variable and a dependent variable becomes larger when a third variable is included would indicate suppression. (MacKinnon, Krull, & Lockwood, 2000, p. 175)

The effect of the mediation/suppression can be assessed using: (1) the technique of difference between the direct and total effect ($\tau - \tau'$; Baron and Kenny, 1986), and (2) the multiplication technique ($\alpha\beta$). MacKinnon et al. (2000) illustrated in great depth the criteria of identifying the mediation/suppression effect using Baron and Kenny's traditional approach and multiplication. Yet there are many valid concerns related to the difference technique (Rosopa & Stone-Romero, 2008). Therefore, the current study judged the type of mediation using multiplication technique ($\alpha\beta$, provided by LISREL output) guided by MacKinnon et al.'s (2000) criteria.

4.4. Results

4.4.1. Descriptive statistics, correlation, and assumptions checking

Descriptive statistics (see Table 1) were examined in addition to outliers ($z \pm 2.58$) on the nine main variables. Zero-order Pearson correlation coefficients between the variables were reviewed. The hypothesized correlations (see Table 1) were in the expected direction and statistically significant ($p < .05$) except for three correlations. That is, authoritative maternal and paternal styles correlated negatively with learning motivation, academic self-efficacy and moral intelligence. Maternal authoritarian and permissive styles did not correlate with the same three variables. The assumption of normality was also examined, and it was met.

4.4.2. Initial model

Results of the initial PA for three models demonstrated some non-significant t-values that implied conducting slight modification (see Figure 2). More specifically, the model 1 result revealed a non-significant association between authoritative maternal style and moral intelligence and non-

Table 1. Descriptive statistics and pearson correlation coefficients for study variables.

Variables	M	SD	S	K	1	2	3	4	5	6	7	8	9
1. M_Tive	3.52	.63	-.46	.42	-	.46**	.41**	.50**	.20**	.14**	-.21**	-.12*	-.12*
2. M_Rian	3.46	.63	-.26	-.12		-	.55**	.23**	.51**	.25**	-.13*	-.00	-.04
3. M_Perm	3.49	.70	-.31	-.27			-	.27**	.30**	.50**	-.10	-.04	-.07
4. F_Tive	3.43	.65	-.54	.76				-	.51**	.45**	-.20**	-.15*	-.19**
5. F_Rian	3.33	.64	-.34	.30					-	.52**	-.17**	-.12*	-.23**
6. F_Perm	3.30	.74	-.46	.13						-	-.15*	-.17**	-.18**
7. MTL	2.15	.63	.65	.68							-	.72**	.61**
8. ASE	2.01	.74	.87	.72								-	.60**
9. MI	2.06	.63	1.18	2.47									-

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. Maternal Authoritative style = M_Tive; Maternal Authoritarian style = M_Rian; Maternal Permissive style = M_Perm; Paternal Authoritative style = F_Tive; Paternal Authoritarian style = F_Rian; Paternal Permissive style = F_Perm; Learning Motivation = MTL; Academic Self-Efficacy = ASE; Moral Intelligence = MI; S = Skewness; K = Kurtosis.

significant association between authoritative paternal style and learning motivation. Similarly, model 2 revealed that authoritarian maternal style had a non-significant association with moral intelligence and authoritarian parental style did not correlate with motivation. However, it was not the case with the permissive parenting. In other words, maternal permissive styles had a non-significant correlation with moral intelligence and learning motivation. In general, maternal styles had non-significant direct associations with moral intelligence across the parenting styles. Similarly, paternal parenting had non-significant direct correlations with learning motivation across different styles. Hence, modifications were conducted. The path analyses were re-examined after eliminating non-significant associations based on the t-value.

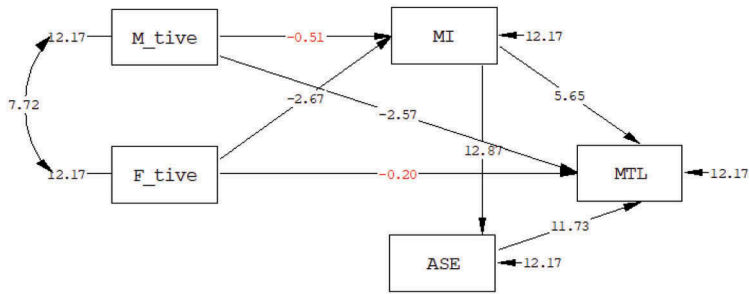
4.4.3. Final model

The final PA results demonstrated a general good fit for the three models (see Table 2). For model 1, the non-significant Chi-square ($\chi^2[4] = 1.41; p = .84$) showed that there is no difference between the sample covariance matrix and model-implied covariance matrix. RMSEF was .00 (90% confidence interval [CI] = .00, .08) and the SRMR was .02, supporting a good model fit. The GFI, AGFI and NFI were all .99. All paths were significant ($p < .05$) and in the hypothesized directions except two paths related to authoritative parenting styles. The largest two positive standardized path coefficients (see Figure 3) were from moral intelligence to academic self-efficacy ($\beta = .60$) and academic self-efficacy to motivation ($\beta = .56$). Similarly, moral intelligence associated positively with motivation ($\beta = .27$). In contrast, authoritative maternal style had a negative correlation with motivation ($\beta = -.12$) and authoritative paternal style related negatively to moral intelligence ($\beta = -.19$). Furthermore, paternal authoritative style had negative indirect associations with motivation and academic self-efficacy ($\beta = -.12$; see Table 3). According to MacKinnon et al.'s (2000) criteria, the indirect effect ($\alpha\beta = .33$) and direct effect ($\tau' = .27$) were positive, and total effect ($\tau = .60$) was greater than direct effect ($\tau > \tau'$). Thus, moral intelligence mediated the correlation of paternal authoritative style with motivation and academic self-efficacy. In total, maternal authoritative style, academic self-efficacy and moral intelligence explained 58% of variance on motivation.

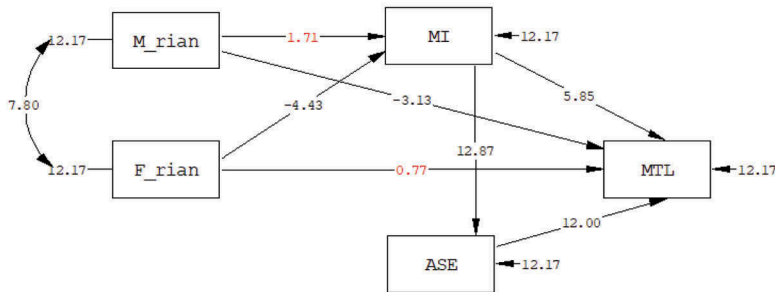
Model 2 fit indices were good too, as follows: non-significant Chi-square ($\chi^2[4] = 3.75; p = .44$); RMSEF = .00 (90% confidence interval [CI] = .00, .09); SRMR = .03; GFI, AGFI and NFI = .99, .98, .99 respectively. Additionally, all paths were significant in the hypothesized directions ($p < .05$). Path coefficients between three variables (i.e., moral intelligence, academic self-efficacy and learning

Table 2. Maximum likelihood estimate and selected fit indices for the study model.

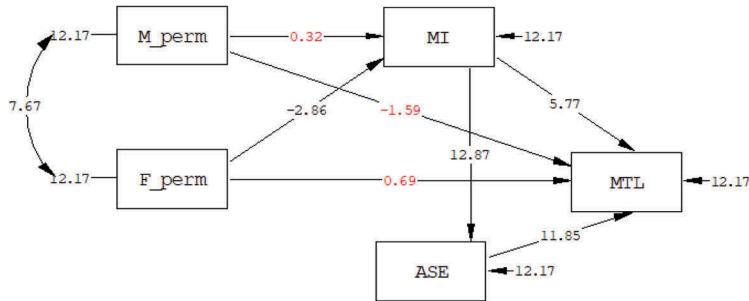
Description	Standardized estimates		T-values
Direct Paths			
Authoritative Maternal style → Learning Motivation	-.12		-3.07
Authoritative Paternal style → Moral Intelligence	-.19		-3.38
Authoritarian Maternal style → Learning Motivation	-.38		-3.16
Authoritarian Paternal style → Moral Intelligence	.18		-4.12
Permissive Paternal style → Moral Intelligence	-.18		-3.11
Moral Intelligence → Learning Motivation	.27		5.78
Moral Intelligence → Academic Self-efficacy	.60		12.87
Academic Self-efficacy → Learning Motivation	.56		12.00
Equation error variances			
	Model 1	Model 2	Model 3
Learning Motivation	.58	.59	.57
Academic self-efficacy	.36	.36	.36
Moral Intelligence	.04	.05	.03
Selected fit indices			
	Model 1	Model 2	Model 3
χ^2	1.41	3.75	1.88
Root-Mean square error of approximation (RMSEA)	.00	.00	.00
Standardized root-mean-square residual (SRMR)	.02	.03	.02
Goodness-of-fit model (GFI)	.99	.99	.99
Adjusted goodness-of-fit model (AGFI)	.99	.98	.98
Normed Fit Index	.99	.99	.99



Model 1



Model 2



Model 3

Figure 2. Initial model with T-value.

motivation) had the same values in Model 1 (see Figure 3 – Model 2). Maternal authoritarian style had a negative correlation with motivation ($\beta = -.12$) and paternal authoritarian style correlated negatively with moral intelligence ($\beta = -.23$). Furthermore, paternal authoritarian style had a negative indirect effect on motivation and academic self-efficacy ($\beta = -.14$). Comparatively, moral intelligence mediated the correlation of the paternal authoritarian style with motivation and academic self-efficacy in Model 2 (MacKinnon et al., 2000). Maternal authoritarian style, academic self-efficacy and moral intelligence explained 59% of variance on students' motivation.

Model 3 had a good model fit (see Figure 3 – Model 3). The model indices were as follows: non-significant Chi-square ($\chi^2[2] = 1.88; p = .39$); RMSE = .00 (90% confidence interval [CI] = .00, .11); SRMR = .02; GFI, AGFI and NFI = .99, .98, .99 respectively. All paths were significant ($p < .05$) in the hypothesized direction. Significantly, paternal permissive style had a negative direct association with moral intelligence ($\beta = -.18$) and a negative indirect effect with motivation and academic self-efficacy ($\beta = -.11$). In light of MacKinnon et al.'s (2000) criteria, the moral intelligence mediated the

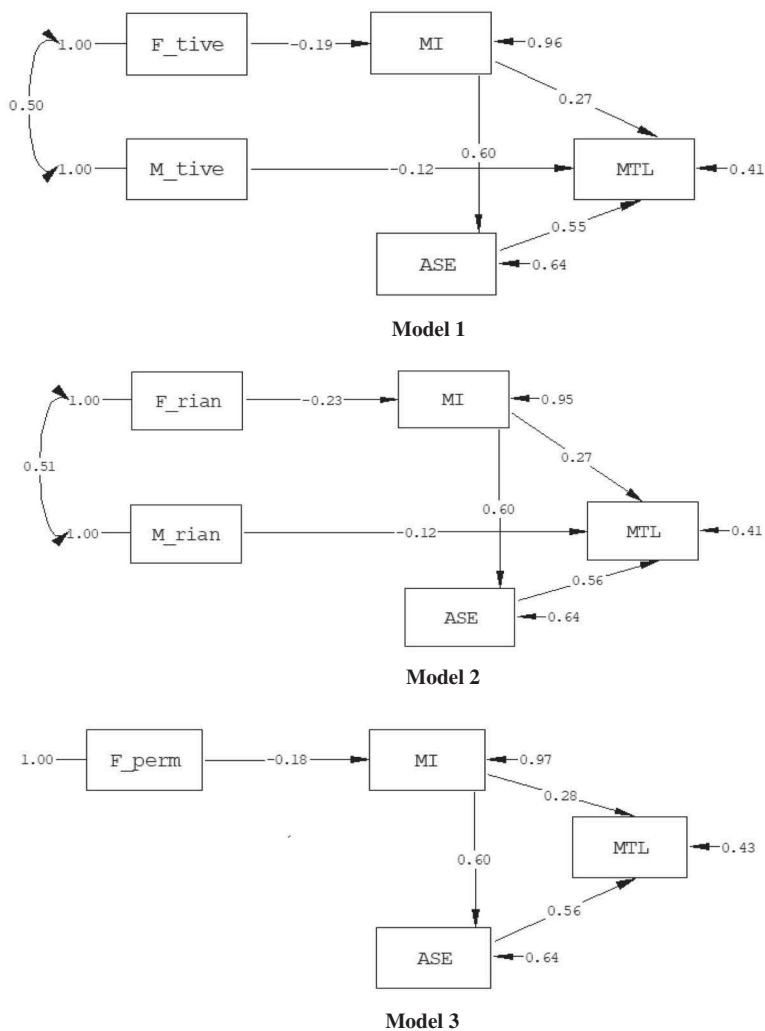


Figure 3. Three Parenting Styles Models with Standardized Coefficients

correlations between paternal permissive style, academic self-efficacy and motivation. Academic self-efficacy and moral intelligence explained 57% of variance on students' motivation.

5. Discussion

The quality and quantity of students' learning motivation are fundamental components in the learning process specifically for adolescents (Aldhafri & Alhadabi, 2015; Areepattamannil et al., 2011; Schumm & Bogner, 2016). That is, as students move from childhood to adolescence, learning motivation tends to decrease gradually (Aldhafri & Alhadabi, 2015). The literature has illustrated inconsistent associations between learning motivation and three types of paternal and maternal parenting styles. Furthermore, internal factors (i.e., ASE and MI) may mediate these associations by strengthening the positive associations and attenuating the pessimistic associations.

Table 3. Mediation model: total, direct, and indirect effects.

Variables	Direct Effect (r')/T-values	Indirect Effect ($\alpha\beta$)/T-values	Total Effect (τ)/T-values
Model 1			
M_tive $\rightarrow$ MTL	-.12 (-3.07)	0	-.12 (-3.07)
F_tive $\rightarrow$ MTL	0	-.12 (-3.28)	-.12 (-3.28)
F_tive $\rightarrow$ ASE	0	-.12 (-3.27)	-.12 (-3.27)
F_tive $\rightarrow$ MI	-.19 (-3.38)	0	-.19 (-3.38)
MI $\rightarrow$ MTL	.27 (5.78)	.33 (8.67)	.60 (13.13)
MI $\rightarrow$ ASE	.60 (12.87)	0	.60 (12.87)
ASE $\rightarrow$ MTL	.55 (11.73)	0	.55 (11.73)
Model 2			
M_ran $\rightarrow$ MTL	-.12 (-3.16)	0	-.12 (-3.16)
F_ran $\rightarrow$ MTL	0	-.14 (-3.94)	-.14 (-3.94)
F_ran $\rightarrow$ ASE	0	-.14 (-3.93)	-.14 (-3.93)
F_ran $\rightarrow$ MI	-.23 (-4.12)	0	-.23 (-4.12)
MI $\rightarrow$ MTL	.27 (5.78)	.33 (8.78)	.60 (13.25)
MI $\rightarrow$ ASE	.60 (12.87)	0	.60 (12.87)
ASE $\rightarrow$ MTL	.56 (12.00)	0	.56 (12.00)
Model 3			
F_perm $\rightarrow$ MTL	0	-.11 (-3.03)	-.11 (-3.03)
F_perm $\rightarrow$ ASE	0	-.11 (-3.03)	-.11 (-3.03)
F_perm $\rightarrow$ MI	-.18 (-3.11)	0	-.18 (-3.11)
MI $\rightarrow$ MTL	.28 (5.78)	.33 (8.67)	.61 (13.28)
MI $\rightarrow$ ASE	.60 (12.87)	0	.60 (12.87)
ASE $\rightarrow$ MTL	.56 (11.73)	0	.56 (11.73)

Note: Maternal Authoritative style = M_tive; Maternal Authoritarian style = M_ran; Maternal Permissive style = M_perm; Paternal Authoritative style = F_tive; Paternal Authoritarian style = F_ran; Paternal Permissive style = F_perm; Learning Motivation = MTL; Academic Self-Efficacy = ASE; Moral Intelligence = MI.

Therefore, the current study hypothesized a three-path model (see Figure 1) that examines the direct and indirect effects of consistent paternal and maternal parenting styles on adolescents' motivation. In detail, the primary models proposed that authoritative parenting styles have positive direct and indirect correlations with motivation and moral intelligence, whereas authoritarian and permissive styles have negative direct and indirect associations with motivation and moral intelligence. Academic self-efficacy and moral intelligence associate positively with learning motivation. Lastly, moral intelligence mediates the associations between parenting styles and motivation. The initial models illustrated multiple non-significant paths and were modified by deleting these paths. The indices of the modified model demonstrated a good model fit. These findings provided a theoretical framework for the direct and indirect effects between study variables in the context of middle and high school.

All associations were in the hypothesized directions except the association of authoritative maternal and paternal styles. In detail, the three paternal styles (i.e., authoritative, authoritarian and permissive) have direct negative correlations with moral intelligence and indirect negative correlations with learning motivation. As expected, authoritarian and permissive paternal styles had negative associations with moral intelligence and learning motivation, supporting previous findings (Aunola et al., 2000; Gonzalez et al., 2002; Hoang, 2007). That is, the authoritarian style was associated with performance achievement goals and low academic achievement (Alkharusi et al., 2011; Hoang, 2007) and the permissive style correlated with high levels of task-irrelevant behaviour, passivity and self-handicapping (Aunola et al., 2000).

Authoritative and authoritarian maternal parenting styles directly correlate with student motivation. However, they do not correlate with moral intelligence. The direct relationships of maternal styles (and not paternal styles) with learning motivation can be explained by the fact that Omani mothers pay more daily effort and attention to adolescents' homework, quizzes and exams compared with fathers, who are more responsible for financial issues. This finding reconciled with Cheung and McBride-Chang (2008) who demonstrated that perceived maternal support and encouragement explained unique variance in learning motivation.

Surprisingly, authoritative maternal and paternal styles have negative associations with learning motivation and moral intelligence, which disagrees with the majority of the previous literature (Aldhafri, 2014; Froiland, 2015; Gonzalez et al., 2002). The characteristics of the current study sample can explain such findings; meaning that the descriptive statistics (i.e., means ranging from 2.15 to 2.01) demonstrated low levels of learning motivation, academic self-efficacy and moral intelligence among students in the current study. The authors speculated that the parents of these students tend to practise more controlling involvement in students' academic performance, or what is known as helicopter parenting (i.e., over-involvement and focused attention to protect the children and ensure their social and academic success; Darlow, Norvilitis, & Schuetze, 2017). That is, parents tend to adopt helicopter parenting because they have a deep desire for their children to succeed. By following this style, parents think that exerting pressure on unmotivated adolescents will strengthen diligence and learning effort (Froiland, 2015). However, the literature has demonstrated that helicopter parenting backfires, negatively affecting students' emotional health, mortality and autonomous learning motivation (Deci & Ryan 2008 ;Schiffrrin et al., 2014). Schiffrrin and Liss (2017) supported the current study results because maternal helicopter parenting has been associated with maladaptive academic motivation such as avoidance goals, extrinsic motivation and poor academic performance.

Moral intelligence had a positive direct relationship with academic self-efficacy and learning motivation. This finding presents an additional contribution to the body of literature about moral intelligence effects. That is, the literature has emphasized the positive associations between moral intelligence and multiple variables, including (1) achievement (Hoseinpoor & Ranjdoost, 2013); (2) collaborative group work during class (Niemi, 2016); (3) self-concept (Khalil, 2015); (4) self-esteem (Borba, 2001); (5) self-efficacy (Hassani & Shohoudi, 2016); and (6) social behaviour (Abu Awad, 2011). Most importantly, moral intelligence mediates the relationships between parenting styles and learning motivation. Thus, moral intelligence reduces the negative indirect effects of unconstructive parenting style with learning motivation, resulting in weak small indirect associations between parenting styles and motivation. This finding supports the additional value that this study aims to achieve. It concurs with Mohammed's (2012) findings that illustrate the role of some moral qualities (e.g., empathy) in alleviating the consequences of negative parenting styles. Clarken (2009) clarified that moral intelligence indirectly resists the negative association of inappropriate parenting styles with students' outcomes in school environment, like students' motivation.

As expected, academic self-efficacy had a positive direct effect on learning motivation. This result is supported by multiple literature findings. From this perspective, Given that, academic self-efficacy is thus associated with learning outcomes like academic achievement and aspiration (Carroll et al., 2009); self-evaluation, self-directing and self-regulation (Motlagh et al., 2011); academic aspiration and learning engagement (Zhen et al., 2017); positive emotions (e.g., pride and enjoyment; Fredrickson & Branigan, 2005); and low levels of anxiety (Mills et al., 2006).

6. Implications and limitations

The current study holds many practical implications. Designing quasi-experimental studies that aim to enhance parenting practices can be beneficial for developing moral intelligence and fostering high learning motivation among middle and high school students. Moreover, the current study suggests designing training programmes for adolescents about moral intelligence, which could contribute positively to student academic and social outcomes directly and indirectly by resisting any external negative factors like negative parenting styles. It could reduce any possibility of academic dishonesty as well.

This study also has some limitations. First, the study sample contained adolescents in 7th to 11th grades from public schools, which limits generalizability to other environments. Therefore, a larger sample covering both public and private schools could provide representative findings. Due to low Internal Reliability coefficients of the parenting style, the current study suggests

adopting other parenting styles questionnaires specifically in the collective cultures. One of the possible limitations that leads to a surprising effect of authoritative parenting style is common-method variance. The common-method variance implies that the observed variance is caused by the measurement method rather than the underlying construct specifically in behavioural studies due to social desirability, acquiescence, leniency effects and yes–no effect (Campbell & Fiske, 1959). Podsakoff, MacKenzie, Lee, and Podsakoff (2003) stressed that the observed correlation between two constructs might be reduced to half despite there being actual perfect correlation between the same constructs due to common-method variance. Relating to the current study, students might respond similarly to different items in the parenting style questionnaire. Therefore, students' responses to authoritative and authoritarian items are sort of similar, leading to consistent negative associations for different constructs (authoritative and authoritarian) with the outcome variable (i.e., motivation). Future studies should focus on the association of seven dimensions of moral intelligence and student motivation.

7. Conclusion

In conclusion, parenting styles, moral intelligence and academic self-efficacy explained 57% to 59% of variance on adolescents' learning motivation across the three models. Generally, maternal parenting styles held direct and greater influences on learning motivation compared with paternal parenting styles. On the contrary, moral intelligence associated directly with paternal parenting styles and not with maternal styles. Unconstructive parenting styles correlated negatively with moral intelligence and learning motivation. However, moral intelligence mediated the negative associations between parenting styles and learning motivation. Personal qualities, specifically moral intelligence and academic self-efficacy, have positive direct associations with student motivation. The study findings advocate the mediating role of moral intelligence between parenting styles and learning motivation among middle and high schools.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Parenting Style Dimensions As Predictors of Adolescent Antisocial Behavior

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Antisocial behavior is strongly associated with academic failure in adolescence. There is a solid body of evidence that points to parenting style as one of its main predictors. The objective of this work is to elaborate a reduced, valid, and reliable version of the questionnaire by Oliva et al. (2007) to evaluate the dimensions of parenting style and to analyze its psychometric properties in a sample of Spanish adolescents. To that end, the designed questionnaire was applied to 1974 adolescents 12–18 years of age from Asturias (Spain). Regarding construct validity, the results show that the model that best represents the data is composed of six dimensions of parenting style, just as in the original scale, namely affection and communication; promotion of autonomy; behavioral control; psychological control; self-disclosure; and humor. The psychological control factor negatively correlates with the other factors, with the exception of behavioral control, with which it positively correlates. The remaining correlations among the factors in the parenting style questionnaire are positive. Regarding internal consistency, the reliability analysis for each factor supports the suitability of this six-factor model. With regard to criterion validity, as expected based on the evidence available, the six dimensions of parenting style correlate in a statistically significant manner with the three antisocial behavior measures used as criteria (off-line school aggression, antisocial behavior, and antisocial friendships). Specifically, all dimensions negatively correlate with the three variables, except for psychological control. In the latter case, the correlation is positive. The theoretical and practical implications of these results are discussed.

Keywords: family, parenting style, antisocial behavior, adolescence, evaluation

OPEN ACCESS

Edited by:

José Jesús Gázquez,
University of Almería, Spain

Reviewed by:

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University of Liverpool, UK
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Specialty section:

This article was submitted to
Educational Psychology,
a section of the journal
Frontiers in Psychology

Received: 29 May 2016

Accepted: 30 August 2016

Published: 13 September 2016

Citation:

Álvarez-García D, García T,
Barreiro-Collazo A, Dobarro A and
Antúnez Á (2016) Parenting Style
Dimensions As Predictors
of Adolescent Antisocial Behavior.
Front. Psychol. 7:1383.
doi: 10.3389/fpsyg.2016.01383

INTRODUCTION

Antisocial behavior, which is defined as behavior that violates social norms and the rights of others (Burt, 2012), constitutes an important problem in adolescence. Regarding the most serious, identified, and proven cases of antisocial behavior, the rate of minors between 14 and 17 of age in Spain who were convicted in 2014 is 8.7 per 1000 (National Statistical Institute [Instituto Nacional de Estadística], 2015). However, it is reasonable to assume that the prevalence of antisocial behavior among young people, although difficult to specify, is greater than the data indicate. This type of behavior causes significant personal and social damage. Those who engage in antisocial behavior considerably reduce their educational and employment opportunities; those who suffer it must endure its physical, emotional, or economic consequences. In the social sphere, these problems

consume a large amount of resources related to mental health, education, and juvenile justice (Sawyer et al., 2015).

Among the various factors identified as predictors of antisocial behavior in adolescence, the type of educational and relational practices exercised by parents stand out (Álvarez-García et al., 2015; Cutrin et al., 2015). Although these types of practices may vary in different situations, relatively stable attitudes and behavioral patterns with specific effects on the behavior of children can be identified. These practices are called “parenting styles” (Torío et al., 2008). One of the most commonly used typologies of parenting style is that proposed by MacCoby and Martin (1983) based on a reformulation of the work by Baumrind (1967). This classification distinguishes four types of parenting styles, based on two dimensions (*responsiveness/acceptance* and *demandingness/control*): authoritative (responsive and demanding); indulgent (responsive but not demanding); authoritarian (demanding but not responsive); and neglectful (neither responsive nor demanding).

Previous research offers consistent results regarding the existence of a significant association between parenting style and antisocial behavior in adolescents. Thus, parental practices characterized by affection, communication, and support (responsiveness) are negatively associated with antisocial behavior in children, including drug use (García and Gracia, 2009; Pérez, 2012; Calafat et al., 2014), criminal behavior (García and Gracia, 2009; Ginsburg et al., 2009; Hoeve et al., 2011), inconsiderate and disrespectful treatment of parents (Pérez, 2012), behavioral problems in school (García and Gracia, 2009), and bullying (Kokkinos, 2013; Gómez-Ortiz et al., 2015). These studies point to the neglectful parenting style (low responsiveness and demandingness) as that which is most positively associated with antisocial behavior in adolescents.

Although the role of responsiveness (affection, communication, and support) in child behavior seems to be clear, that of demandingness is less clear. Its effect on general adolescent behavior, particularly on the adolescent’s possible antisocial behavior depends on the type of demandingness exercised by parents. In general terms, positive and negative demandingness can be differentiated (Alegre, 2011). Positive demandingness involves parental practices that include the parent’s reasoned guidance of children on desirable behavior, empathetic explanations, behavior monitoring, the promotion of autonomy in children, and demands and expectations according to children’s degree of maturity. By contrast, negative demandingness involves parental practices that include psychological control that hampers child autonomy through behaviors such as excessive control, emotional blackmail, and the withdrawal of affection and attention or guilt induction if the child does not do what is asked, in addition to punitive (screams, punishments, and threats) and severe discipline. Negative parental demandingness, compared to positive demandingness, is associated with an increased likelihood of internalized and externalized problems and with less emotional competence in children (Alegre, 2011).

Because all of these nuances must be taken into account, more dimensions than the two basic dimensions proposed by MacCoby and Martin (1983) are being considered to define the

different types of parenting styles. A good example is the six-dimension model proposed by Oliva et al. (2008). In this model, four parental control-related variables are considered: *behavioral control* (establishing behavioral boundaries and monitoring activities, friendships, and places frequented by the children when the parents are not present); *self-disclosure* (a subtle form of control consisting of children’s spontaneous disclosure to their parents of what they do in their free time, typically resulting from an affective and communicative bond between parents and children); *psychological control* (the parental use of manipulative strategies, including guilt induction or emotional blackmail); and the *promotion of autonomy* (the parental stimulation of children’s freedom and independence in decision-making processes related to the problems that affect them). The two remaining variables relate to family communication: *affection* (parental attitudes that include listening, supporting, and understanding their children) and *humor* (a relaxed, cheerful, and optimistic parental attitude). From the scores obtained by parents in these six dimensions, Oliva et al. (2008) distinguish three types of parents: democratic, strict, and indifferent.

The diversity of models regarding parenting dimensions and styles has given rise to a variety of instruments to assess them. One of these instruments is the parenting style questionnaire proposed by Oliva et al. (2007), based on the six-dimension model by Oliva et al. (2008). This questionnaire has been chosen by other researchers to analyze the relationship between parenting styles and various aspects in adolescents including reading comprehension development (Carpio et al., 2012), academic failure (Sabán et al., 2013), pregnancy risk (Pérez-López et al., 2015), psychopathological symptoms (Rosa-Alcázar et al., 2014), resilience (Gómez-Ortiz et al., 2015), child-on-parent violence (Calvete et al., 2014), and involvement in bullying (Gómez-Ortiz et al., 2014). The previous studies that use this questionnaire to analyze the relationship between its dimensions and antisocial behavior in adolescents found that affection and communication, promotion of autonomy, behavioral control, and humor perceived by adolescents in their parents and self-disclosure reported by adolescents correlate negatively with external problems and substance abuse (Oliva et al., 2007), and hostility (Rosa-Alcázar et al., 2014); while parental psychological control perceived by adolescents correlate positively with these antisocial behaviors. Calvete et al. (2014), using only the affection and communication factor, found that this dimension is a significant protective factor of both physical and psychological aggression against parents.

The parenting style questionnaire by Oliva et al. (2007) has shown its theoretical and practical utility in the various studies in which it has been used. It is based on a solid theoretical model, and contrasted with the validation test, it displays adequate psychometric properties. It has helped identify the parenting style of the parents evaluated and analyze the relationship of each style with the behavior of children. However, one possible problem with its application can be its length. It consists of 82 items, which, when applied within a battery of tests and particularly when applied to younger people, can be problematic. Developing an abbreviated version of the test and checking whether it can provide researchers with a valid and reliable measure of the

parenting style dimensions that is sufficiently informative and useful for their research purposes would be of great interest.

For all of these reasons, the objective of this work is to elaborate a reduced, valid, and reliable version of the questionnaire to evaluate the parenting style dimensions proposed by Oliva et al. (2007) and to analyze its psychometric properties in a sample of Spanish adolescents. Shortening the test is not expected to adversely affect the validity and reliability of its measurements.

MATERIALS AND METHODS

Participants

A total of 2045 adolescents from 10 schools participated in the study. They were selected through stratified random sampling from all schools in Asturias (Spain) supported with public funds that provide Compulsory Secondary Education (Educación Secundaria Obligatoria – ESO). Schools supported with public funds constitute 95.9% of the schools that provide ESO in Asturias. To select the sample, the schools were divided according to their ownership (public or semi-private), and in each stratum, a number of schools proportionate to the population were selected. In Spain, public schools are those in which both their management and funding are entirely public, and semi-private schools (*centros concertados*) are those with private management but partial public financing. This stratification variable was used as previous studies suggest that public and semi-private schools in Asturias differ in the socioeconomic status of families and students' academic performance (Fernández and Muñiz, 2012). As a result, six public and four semi-private schools were selected. All students under ESO at each school were evaluated.

Once samples with a significant number of blank or void responses were discarded, the final sample comprised 1974 adolescents between 12 and 18 years of age (mean = 14.02; $SD = 1.38$). A total of 49.1% were girls; 28.1% of the students evaluated are in their first year, 25.4% in their second year, 25.0% in their third year, and 21.5% in their fourth year.

Measurement Instruments

Parenting Style

An adaptation of the parenting style scale by Oliva et al. (2007) was developed. The original scale measured six parental dimensions: affection and communication; promotion of autonomy; behavioral control; psychological control; self-disclosure; and humor. To that end, adolescents must respond to 41 items regarding their father's parenting style and 41 regarding their mother's parenting style (82 total). The response format is a six-point Likert-type scale. The adapted version, used in the present work, introduces three modifications to the original scale: after a pilot test, the number of items was reduced from 41 to 24 (four per factor), once factor loadings and item correlations were analyzed; the subject is asked to jointly assess both parents' parenting style, if he or she has two parents (therefore, the subject answers only 24 items); and the response options are reduced from six to four (1 = completely false; 2 = somewhat false; 3 = somewhat true; 4 = completely true). The students had to

indicate the extent to which each assertion in the scale was true. The final questionnaire applied to the students is shown in the Appendix.

Off-Line School Aggression

A self-report scale, which was designed and previously used by the research team, was used in this study (Álvarez-García et al., 2016). It has six items involving the frequency with which the subject expressed having behaved aggressively in the physical school environment over the last 3 months: "No he dejado participar en mi grupo a algún compañero, durante alguna actividad de recreo o de Educación Física" ["I excluded some of my classmates from interacting in my group, during some leisure activity or in Physical Education class"], "No he dejado participar en mi grupo a algún compañero en alguna actividad de clase" ["I excluded some of my classmates from participating in some class activities in my group"], "Me he reído y burlado de algún/a compañero/a" ["I laughed at and made fun of a classmate"], "He hablado mal de algún/a compañero/a a sus espaldas" ["I spoke ill of some classmates behind their backs"], "He insultado a la cara a algún/a compañero/a" ["I insulted some of my classmates to their face"], and "He pegado a algún/a alumno/a del centro, dentro o a la salida del recinto escolar" ["I hit a student in school or when leaving school grounds"]. The response is a four-point Likert-type scale (1 = never; 2 = a few times; 3 = many times; 4 = always). The internal consistency of the scale in the sample for this study is high ($\alpha = 0.84$).

Antisocial Behavior

A scale developed *ad hoc* for this study was used adapting some items from the "Antisocial and criminal behavior scale in adolescents" by Andreu and Peña (2013). The scale used consists of six items: "He ensuciado, dañado o destruido conscientemente mobiliario público (por ej., una pared, una papelera, una farola, asientos del autobús)" ["I consciously soiled, damaged, or destroyed public furniture (e.g., a wall, a trashcan, a lamppost, seats on the bus)"], "He robado algo de una tienda, del colegio o de una casa" ["I stole something from a shop, school, or a private home"], "He entrado sin permiso en una propiedad privada" ["I trespassed on private property"], "He golpeado o me he peleado con un desconocido hasta dañarle" ["I have hit or fought with a stranger to the point of harming him/her"], "He consumido drogas ilegales" ["I used illegal drugs"], and "Me he emborrachado" ["I have gotten drunk"]. The requested response is dichotomous (true/false), stating whether the subject has performed these actions over the last year. The internal consistency of the scale in this sample is acceptable ($KR20 = 0.73$).

Antisocial Friendships

A scale developed *ad hoc* for this study was used. Inspired by some of the indicators of antisocial behavior proposed by Andreu and Peña (2013), it is composed of four items: "Alguno/a de mis mejores amigos/as ha ensuciado, dañado o destruido conscientemente mobiliario público (por ej., una pared, una papelera, una farola, asientos del autobús)" ["One or some of my best friends have soiled, damaged, or destroyed public furniture

(e.g., a wall, a trashcan, a lamppost, seats on the bus)], “Alguno/a de mis mejores amigos/as ha robado algo de una tienda, del colegio o de casa” [“One or some of my best friends have stolen something from a shop, school, or a private home”], “Alguno/a de mis mejores amigos/as se ha peleado físicamente en serio con otro/a chico/a” [“One or some of my best friends have had a real physical fight with another young person”], and “Alguno/a de mis mejores amigos/as ha consumido drogas ilegales” [“One or some of my best friends have consumed illegal drugs”]. The requested response is dichotomous (true/false), stating whether the subject has performed these actions over the last year. The internal consistency of the scale in this sample is acceptable ($KR20 = 0.71$).

Procedure

First, the questionnaires used in the study were selected or designed. Subsequently, 10 schools, whose students constitute the study sample, were selected. Then, permission to apply the questionnaires was requested from the schools’ respective head management teams. Each management team was informed of the objectives and procedures of the study, its voluntary and anonymous nature, and the confidential treatment of the results. Once the schools agreed to participate, informed consent was requested from the parents or guardians of students because the students are minors. Before answering the questionnaire, the students were also informed of the anonymous, confidential, and voluntary nature of their participation. In general, the students had 20 min to complete the questionnaires, although timing was flexible depending on the age and characteristics of the subjects. The test was applied by the investigating team to all groups in each school during school hours.

Data Analysis

The factorial validity of the scores from the parenting style questionnaire was analyzed using the EQS 6.2 statistical program (Bentler, 2014). Although not severe, given the non-normality of the data and the ordinal nature of the scale, the robust maximum likelihood estimating method was used, and the analyses were conducted based on the polychoric correlations matrix (Hoyle, 2012). Questionnaires with three or more blank or null items were removed (71). To avoid losing more samples and to be able to use all available data, the missing values were treated by computing the covariance matrix through the pairwise method.

To determine the degree of fit of the models tested, the Satorra-Bentler scaled chi-square ($SB\chi^2$ /degrees of freedom (df), the robust comparative fit index (RCFI), the robust Bentler-Bonett non-normed fit index (RNNFI), the root mean square error of approximation (RMSEA), and the robust Akaike information criterion (RAIC) were used. Typically, values indicative of a good fit are $CFI \geq 0.95$, $NNFI \geq 0.95$, and $RMSEA \leq 0.06$ (Hu and Bentler, 1999), and $\chi^2/df < 3$ (Ruiz et al., 2010). The RAIC makes it possible to compare models, and that with the lowest value is preferable.

Once the model with the best fit to the data was identified, its discriminant validity was studied by analyzing the correlation between its factors and each item’s factorial weight. Very

high correlations ($r \geq 0.85$) warn of potential collinearity or redundancy among factors, thus pointing to poor discriminant validity (Brown, 2015). Factorial weights above 0.30 are typically considered acceptable (Izquierdo et al., 2014).

Reliability for each subscale was analyzed in terms of internal consistency; each subscale’s Cronbach alpha coefficient, from the polychoric correlations matrix, was found. The squared multiple correlation of each item was estimated to indicate the variance proportion in the item explained by the latent variable, thus calculating each item’s reliability to measure the variable (Bollen, 1989).

Finally, SPSS 21 (IBM Corp, 2012) statistical software was used to analyze criterion validity. To that end, the Spearman coefficient of correlation between the score in each of the six factors in the parenting style questionnaire and the three external criteria was calculated. Regarding the three measures used as criteria, namely, off-line school aggression, antisocial behavior, and antisocial friendships, there is evidence of their association with parenting style. The score in each of these three factors was obtained by adding the scores for each of the items that compose them.

RESULTS

Construct Validity

The goodness of fit of the 6FM (six-factor model; the model that best fitted the data in the validation study of the original questionnaire) was tested with the reduced version of the scale, which was designed and administered in the present study. Subsequently, its fit was compared with that of another model that was also plausible from a theoretical perspective. This alternative model, composed of two factors [2FM (two-factor model)], corresponds to the classical two-dimension distinction that defines parenting styles: affection and control (Table 1). In both models, the factors are latent variables that are significantly related to each other and free from error of measurement; each item (observable indicator) is explained only by a factor and is associated with a certain error of measurement. The results obtained show that the 6FM is the model that best fits the empirical data obtained (Table 2).

TABLE 1 | Proposed models to analyze the dimensionality of the reduced parenting style questionnaire.

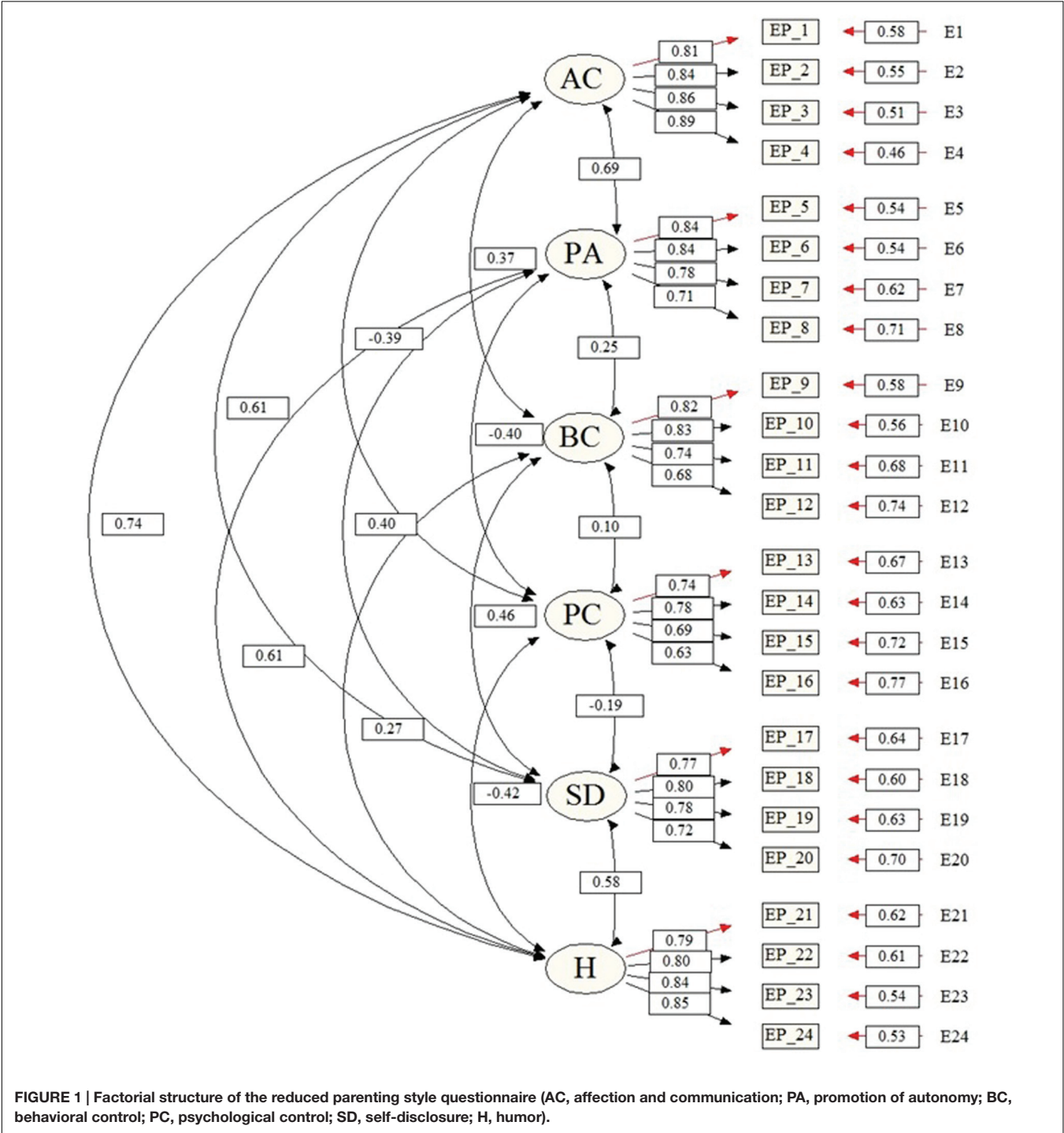
Model	Factors	Items
2FM	Responsiveness/acceptance	1, 2, 3, 4, 21, 22, 23, and 24
	Demandingness/control	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20
6FM	Affection and communication	1, 2, 3, and 4
	Promotion of autonomy	5, 6, 7, and 8
	Behavioral control	9, 10, 11, and 12
	Psychological control	13, 14, 15, and 16
	Self-disclosure	17, 18, 19, and 20
	Humor	21, 22, 23, and 24

2FM, two-factor model; 6FM, six-factor model.

TABLE 2 | Goodness-of-fit indexes of the two models tested for the reduced parenting style questionnaire with the total sample (N = 1974).

Model	$SB\chi^2$	df	p	$SB\chi^2/df$	RCFI	RNNFI	RMSEA (CI 90%)	RAIC
2FM	7437.56	251	<0.001	29.63	0.869	0.856	0.120 (0.118–0.123)	6935.56
6FM	838.33	237	<0.001	3.54	0.989	0.987	0.036 (0.033–0.038)	364.33

2FM, two-factor model; 6FM, six-factor model; $SB\chi^2$, Satorra-Bentler Scaled Chi-Square; df, degrees of freedom; p, probability; RCFI, robust comparative fit index; RNNFI, robust non-normed fit index; RMSEA, root mean square error of approximation; CI, confidence interval; RAIC, robust Akaike information criterion.



As shown in **Figure 1**, the psychological control factor negatively correlates with the other factors. The only exception is behavioral control, with which it positively correlated. The other correlations among the factors are positive. None of the correlations among the factors is greater than 0.85. The strongest correlation is found between the affection and communication factor and the humor factor ($r = 0.74$), and the weakest correlation is found between behavioral control and psychological control ($r = 0.10$). All correlations are significant.

The factorial weights of each item in its factor generally present high values (**Figure 1**). In 21 of the 24 items, the standardized regression coefficient is greater than 0.70. The three exceptions (items 12, 15, and 16) present values higher than 0.60.

Reliability

The internal consistency of the scores for each factor is high. The Cronbach's alpha coefficient is greater than 0.80 for all factors (**Table 3**). Nonetheless, redundant items do not appear: the polychoric correlations between items of the same factor present values between 0.70 and 0.82 for affection and communication;

between 0.56 and 0.79 for promotion of autonomy; between 0.52 and 0.71 for behavioral control; between 0.45 and 0.61 for psychological control; between 0.53 and 0.65 for self-disclosure; and between 0.64 and 0.76 for humor. Item reliability (R^2) is moderate or high. The proportion of item variance explained by the latent variable is between 40.0 and 79.1% (**Table 3**).

Criterion Validity

The scores obtained in each of the six factors of the reduced parenting style questionnaire significantly correlate with the scores in each of the three external criteria analyzed: off-line school aggression, antisocial behavior, and antisocial friendships (**Table 4**). Psychological control positively correlates with these three variables. The other five factors of the parenting style questionnaire negatively correlate with them. The magnitude of the correlation coefficients is, in general terms, weak.

DISCUSSION

The objective of this work was to elaborate a reduced, valid, and reliable version of the questionnaire by Oliva et al. (2007) to evaluate the dimensions of parenting style and to analyze its psychometric properties in a sample of Spanish adolescents. As initially hypothesized, the results obtained show that shortening the test does not adversely affect the validity and reliability of its measurements, presenting suitable metric properties to be administered with the purpose for which it was designed.

Regarding construct validity, the 6FM proposed by Oliva et al. (2007) has shown a good fit to the data obtained when applying the short version designed in the present work. The fit indexes obtained are even better than those obtained by its creators in the validation of the original scale (Oliva et al., 2007). The factorial weight for each item in its factor is high, generally higher than those obtained by Oliva et al. (2007).

The six dimensions of parenting style measured by the questionnaire significantly correlate with each other, with a moderate magnitude. This result supports the discriminant validity of the scores obtained: although the six dimensions are related, they have sufficient entity to be considered distinct constructs. The correlations between factors are not sufficiently

TABLE 3 | Reliability for each factor and item in the reduced parenting style questionnaire (N = 1974).

Factor	Item	α	R^2
Affection and communication	1	0.925	0.663
	2		0.700
	3		0.744
	4		0.791
Promotion of autonomy	5	0.878	0.705
	6		0.709
	7		0.611
	8		0.501
Behavioral control	9	0.854	0.667
	10		0.689
	11		0.542
	12		0.457
Psychological control	13	0.806	0.554
	14		0.609
	15		0.478
	16		0.400
Self-disclosure	17	0.859	0.593
	18		0.639
	19		0.607
	20		0.517
Humor	21	0.902	0.621
	22		0.633
	23		0.710
	24		0.717

α , Cronbach's alpha coefficient; R^2 , Squared multiple correlation.

TABLE 4 | Spearman's correlation coefficient between the score in each factor of the reduced parenting style questionnaire and scores in the scales: off-line school aggression, antisocial behavior, and antisocial friendships (N = 1974).

	Off-line school aggression	Antisocial behavior	Antisocial friendships
Affection and communication	-0.19*	-0.22*	-0.20*
Promotion of autonomy	-0.14*	-0.08*	-0.10*
Behavioral control	-0.11*	-0.21*	-0.14*
Psychological control	0.15*	0.14*	0.18*
Self-disclosure	-0.26*	-0.34*	-0.29*
Humor	-0.19*	-0.16*	-0.16*

* $p \leq 0.001$.

high to be considered redundant. In general, the pattern of results is very similar to that obtained by Oliva et al. (2007) when validating the original questionnaire. On the one hand, higher correlations are found among affection and communication, humor, promotion of autonomy, and self-disclosure. On the other hand, psychological control negatively correlates with the other factors with the exception of behavioral control, with which it positively correlates. The remaining correlations among factors are positive. These results suggest some important issues. First, although promotion of autonomy and self-disclosure are concerned with parental control, they are closely related to affection and communication and humor, as originally predicted. Although the methodology used does not make it possible to establish causal relationships, prior longitudinal studies (Kearney and Bussey, 2015) suggest that close and optimistic parents may promote greater autonomy in children and create an atmosphere in which adolescents feel confident to spontaneously tell their parents what they have done or how they feel. Second, the results of this study suggest that disclosure is more likely to occur in a context in which adolescents perceive that their parents are interested in what happens to them (behavioral control) and that it is less likely to occur in a context in which the use of excessive control or manipulative strategies (psychological control) is perceived. Previous studies combining transverse and longitudinal analysis coincide with the present work in finding a significant cross association between these variables, although the results of the longitudinal analysis cast doubt on the causal nature of the relationship between control and disclosure (Kearney and Bussey, 2015). This aspect must be further investigated in the future. Third, psychological control, defined as excessive control and the use of manipulative strategies, relates to parental practices characterized by little affection and communication, humor, and promotion of autonomy. Psychological control only positively correlates with behavioral control, most likely because both aim at establishing behavioral boundaries, although the strategies for achieving them are different. However, the correlation between behavioral control and psychological control is the weakest among those found between factors in this study.

The reliability analysis of the scores obtained with the test supports the relevance of the 6FM. The internal consistency for the scores in each factor is high. The alpha values obtained for each factor are similar and in some cases even higher than those found in the original scale (Oliva et al., 2007; Sabán et al., 2013; Calvete et al., 2014; Rosa-Alcázar et al., 2014; Gómez-Ortiz et al., 2015). Therefore, reducing the items by factor to four does not seem to have negatively affected factor internal consistency. Item reliability is also high, suggesting that the observable indicators used are good descriptors of the questionnaire dimensions.

With regard to criterion validity, as expected based on the evidence available, the six dimensions of parenting style present a significant association with the three antisocial behavior measures used as criteria (off-line school aggression, antisocial behavior, and antisocial friendships). In particular, the results obtained show that the greater the affection and communication, promotion of autonomy, behavioral control, and humor perceived by adolescents in their parents and the greater the self-disclosure reported by adolescents, the lower

the off-line school aggression, antisocial behavior, and antisocial friendships recognized by adolescents. By contrast, the greater the parental psychological control perceived by adolescents is, the greater the off-line school aggression, antisocial behavior, and antisocial friendships recognized by them. Self-disclosure is the dimension that is most closely related to these three antisocial behavior variables. These results are consistent with previous studies that use the original version of the parenting style questionnaire by Oliva et al. (2007): the same pattern of results regarding the external problems and substance abuse variables (Oliva et al., 2007) and hostility (Rosa-Alcázar et al., 2014) variables is found. Calvete et al. (2014) use only the affection and communication factor in their study, finding that it is a significant protective factor of both physical and psychological aggression against fathers and mothers. As in the present study, correlations magnitude in previous research is commonly weak, due to the existence of additional variables, different from the parenting style dimensions analyzed, that also affect the emergence of antisocial behavior in adolescence (Slattery and Meyers, 2014).

Other studies that have analyzed the relationship between parenting styles and antisocial behavior in adolescence using different assessment instruments have obtained similar results. As indicated in the Introduction, parental practices characterized by affection, communication, and support are negatively associated with antisocial behavior in children, including drug use (García and Gracia, 2009; Pérez, 2012; Calafat et al., 2014), criminal behavior (García and Gracia, 2009; Ginsburg et al., 2009; Hoeve et al., 2011), inconsiderate and disrespectful treatment of their parents (Pérez, 2012), behavioral problems in school (García and Gracia, 2009), and active involvement in bullying (Kokkinos, 2013; Gómez-Ortiz et al., 2015).

In this study, the parenting style dimension most closely associated with low levels of antisocial behavior is self-disclosure. This variable stands out in previous studies as a control method that is potentially more effective in the prevention of antisocial behavior than active parental methods of control (asking questions). In these studies, parent-child closeness is positively related to self-disclosure by adolescents. In turn, self-disclosure positively relates to parental awareness of what children do, and this knowledge is negatively related to antisocial behavior in children (Soenens et al., 2006; Vieno et al., 2009).

Regarding psychological control – the only parental dimension positively associated with antisocial behavior in children – previous meta-analysis studies have emphasized that this variable is a significant predictor of delinquency, even greater than behavioral control (Hoeve et al., 2009). The negative correlation between psychological control and self-disclosure can be found among the varied mechanisms that may explain the relationship between psychological control and delinquency. This negative correlation may affect parental awareness regarding children's behavior, in addition to substance abuse and delinquency (Soenens et al., 2006). Obtaining results that are consistent with prior available evidence supports the criterion validity of the test.

The present work has various theoretical and practical implications. From a theoretical perspective, the results support the relevance of the six-dimension model of parenting styles

considered in the original scale. The dimensions considered have an entity of their own, although they are interrelated, and the observable indicators used are good descriptors of the construct evaluated. From a practical perspective, a brief questionnaire with sufficient metric guarantees for the evaluation of six fundamental dimensions to identify the parenting style from the perspective of the adolescent is made available to researchers and professionals in psychology. The relationship between the parenting style dimensions and the three external criteria observed in this study supports the importance of taking into account parenting styles in the prevention and treatment of antisocial behavior in adolescents. Affection and communication with children constitute an essential variable in preventing and treating this type of behavior.

For all of these reasons, the present work represents a contribution to the study of the relationship between parenting styles and antisocial behavior in adolescents. However, it also presents some limitations. First, the developed and validated short questionnaire does not allow one to distinguish certain aspects related to family context that may affect adolescents' social behavior, including the type of family structure (Breivik and Olweus, 2006), the shared parenting style by both parents (Berkien et al., 2012), and which style in the couple has a greater effect on adolescent behavior (Tur-Porcar et al., 2012). The original questionnaire asked adolescents to evaluate their fathers and mothers separately. By contrast, the abbreviated questionnaire forces adolescents to decide which is the predominant style in their family. Previous studies using the original version of the questionnaire show moderate-to-high correlations between the father and the mother in each factor (between 0.61 and 0.85 in Gómez-Ortiz et al., 2015; between 0.46 and 0.79 for girls and between 0.57 and 0.84 for boys in Oliva et al., 2007). In addition, the metric properties of both versions were almost identical in the validation by Oliva et al. (2007). However, testing the reduced version of the scale for each member of the couple separately would be appropriate in the future due to its practical utility. Second, readers should bear in mind that a significant percentage of young people with antisocial behavior live in shelters or have completely dysfunctional families, with a lack of parental figures and constant changes in guardianship (Orrego et al., 2016). Therefore, this questionnaire would not apply in these cases, although the evaluator should record this circumstance. Third, the questionnaire has been validated with

a random and broad sample of adolescents but a sample that is limited to some ages and a specific geographical context. Therefore, any generalization of the study results to other ages and contexts should be made with caution. In the future, validating this scale in other ages and contexts would be of interest. Fourth, the relationship between the questionnaire dimensions and the three antisocial behavior variables was analyzed using a correlational methodology. Thus, the results obtained in this study do not make it possible to establish causal relationships between the variables analyzed. Although the review of evidence has made it possible to refine these results, it would be interesting to use this questionnaire in longitudinal studies in the future. Fifth, some of the questionnaires used were designed *ad hoc* for the present study; thus, they were not previously validated in other samples. Sixth and finally, in analyzing the relationship between parenting style and antisocial behavior, the role of other potentially relevant variables, such as the socioeconomic situation of the family, which can be an important stressor, has not been taken into account.

AUTHOR CONTRIBUTIONS

DA-G: Designed the study, analyzed the data, and wrote the manuscript. TG: Analyzed the data and wrote the manuscript. AB-C, AD, and AA: Recruited the subjects, collected data, and contributed to interpretation of data and critical revision of the article.

FUNDING

This work was financed by the Consejería de Economía y Empleo del Principado de Asturias [Council of Economy and Employment of the Principedom of Asturias] (Spain; Ref. FC-15-GRUPIN14-053).

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <http://journal.frontiersin.org/article/10.3389/fpsyg.2016.01383>

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Personality and Social Psychology

Parenting styles and **trait emotional intelligence** in adolescence

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Argyriou, E., Bakoyannis, G. & Tantaros, S. (2016). Parenting styles and trait emotional intelligence in adolescence. *Scandinavian Journal of Psychology*, 57, 42–49.

The existence of individual differences in **trait emotional intelligence (trait EI)** makes the investigation of factors that contribute to such variations critical. Given the paucity of research in this area, the purpose of this study was **the examination of the relationship between parenting styles and trait EI** in an adolescent population. The sample of our study consisted of 127 adolescents (M age = 16.4, SD = 0.96; 42.2% female) from Greek schools, 15–19 years old, who were asked to complete questionnaires of perceived parenting (Parental Authority Questionnaire – PAQ) and trait EI (Trait Emotional Intelligence Questionnaire–Adolescent Short Form – TEIQue–ASF). The estimation of the association between parenting scores and trait EI was based on a multivariable mixed-effects regression model. **An association between parenting styles and trait EI**, statistically significant for **authoritativeness** ($b = 0.27$, $z = 3.92$, $p < 0.001$) and marginally significant for **authoritarianism** ($b = -0.10$, $z = -1.77$, $p = 0.08$), emerged even after controlling for a set of potential predictors of trait EI. Additionally, statistically significant associations of adolescents' **gender** ($b = -0.29$, $z = -2.37$, $p = 0.02$) and **parental education** ($b = 0.32$, $z = 2.54$, $p = 0.01$) with trait EI were found. These findings provide insight in the field of trait EI antecedents and underline the potential significance of primary prevention programs with parents that aim to develop trait EI at a young age.

Key words: Trait emotional intelligence, parenting styles, TEIQue-ASF, PAQ, emotion, adolescence.

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INTRODUCTION

Trait emotional intelligence (EI) has been repeatedly identified as a predictor of various outcomes in previous research, including physical and psychological health, psychopathology (Davis & Humphrey, 2012; Fernández-Abascal & Martín-Díaz, 2015; Mikolajczak, Petrides & Hurry, 2009), academic performance, deviant behavior, and internalizing and externalizing problems (Cleveland, 2014; Gugliandolo, Costa, Cuzzocrea, Larcan & Petrides, 2015; Petrides, Sangareau, Furnham & Frederickson, 2006; Santesso, Reker, Schmidt & Segalowitz, 2006). However, little is known about the antecedents of trait EI. In this study, we sought to fill this gap in existing literature by investigating the potential relationship between parenting styles and adolescent trait EI.

EMOTIONAL INTELLIGENCE

Although the term “emotional intelligence” dates back to 1960s a more comprehensive scientific research in the field of emotional intelligence initiated in the 1990s (Mayer, Roberts & Barsade, 2008). One of the most prominent theoretical models for EI was Salovey and Mayer's (1990) model. Mayer and Salovey defined EI as the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions, based on the idea that emotions and reasoning interact resulting in thought enhancement (Mayer, DiPaolo & Salovey, 1990; Salovey & Mayer, 1990). After extended research in the field, two distinct constructs emerged that could theoretically coexist (Austin, Parker, Petrides & Saklofske, 2008). The first is emotional intelligence as a

cognitive ability (ability EI), pertaining to emotion-related abilities and belonging to the domain of cognition, measured by problem-based tests, and the second is emotional intelligence as a personality trait (trait EI) pertaining to emotion-related behavioral dispositions and self-perceived abilities, and belonging in the domain of personality, measured by self-report questionnaires (Petrides, 2011).

The subjectivity of emotional experiences and the resulting methodological issues that limit the valid measurement of ability EI (Brody, 2004; Matthews, Roberts & Zeidner, 2004) led Petrides and Furnham (2001) to examine EI as a trait instead of an ability. Subsequently, they confirmed its discriminant validity, testing its location in the personality space, and its incremental validity, identifying a considerable number of outcomes, which trait EI significantly predicted (Petrides, Pita & Kokkinaki, 2007). The definition of trait EI, which is adopted in the present study, is that of a constellation of emotion-related dispositions and self-perceptions located at the lower levels of personality hierarchies (Petrides, 2011; Petrides *et al.*, 2007). The facets comprising trait EI, as proposed by Petrides *et al.* (2007) are: adaptability, assertiveness, emotion perception, emotion expression, emotion management, emotion regulation, impulsiveness, relationships, self-esteem, self-motivation, social awareness, stress management, trait empathy, trait happiness and trait optimism.

PARENTING STYLES

Human development is best understood in the context of multilevel biopsychosocial dynamic systems (Sameroff, 2010). Family is a component of those systems constituting the first and most critical context in which early socialization and,

consequently, emotional development, take place, and these family effects on human development remain important during childhood and adolescence (Dmitrieva, Chen, Greenberger & Gil-Rivas, 2004; Lerner & Steinberg, 2009). Darling and Steinberg (1993) have distinguished parenting in three dimensions: parental goals, parenting practices and parenting styles. Parenting style is the emotional climate in which parents raise their children and this factor mediates the relationship between parenting practices and developmental outcomes (Darling & Steinberg, 1993).

Baumrind (1978, 1991) has proposed three parenting styles focusing on the normal variation of parental authority: authoritative, authoritarian and permissive parenting style. An authoritative parent exerts firm control, but in a supportive manner, by enhancing verbal interaction. Authoritarian parents exert control as well, but they discourage verbal interaction (e.g., "give and take") and value obedience. Finally, permissive parents do not consider themselves as responsible for shaping their offspring's behavior and tend to yield to their child's demands uncritically (i.e., what Macoby & Martin, 1983, later defined as indulgent parents) or avoid responsibility for the child's development (i.e., what Macoby & Martin, 1983 defined as neglectful parents; Baumrind, 1978, 1991).

LINKS BETWEEN PARENTING AND TRAIT EI

While trait EI's outcomes have extensively been examined, its antecedents have been neglected by existing literature. So far, research has examined its heritability and the contribution of intrinsic characteristics to its development, suggesting that there is an amount of genetic influence from parents (Vernon, Petrides, Bratko & Schermer, 2008) and an important impact of temperament (Gardner, Qualter & Whiteley, 2011). As far as environmental factors are concerned, the results of a study conducted by Gunkel, Schlägel, and Engle (2014) indicated a relationship between trait EI and cultural values. However, the contribution of parenting to trait EI has scarcely been investigated. Alegre (2012a) revealed positive associations between the amount of time mothers spend with their children and various aspects of children's trait EI. Additionally, Gugliandolo, Costa, Cuzzocrea and Larcan (2014) showed that parental psychological control predicts trait EI, which in turn influences behavior problems; however, potential effects of positive parenting on children's trait EI were left unexplored. Only one study aiming to investigate directly the relationship between parenting styles and trait EI has been conducted (Alegre, 2012b); however, in this study no statistically significant associations were observed. These null results should be considered cautiously, as the response rate of the participants was low (approximately 20% in the first phase and 12% in the second) which could lead to selection bias in the results, rendering the findings inconclusive. One review paper conducted by Alegre (2011), suggested that there is evidence that parenting styles are associated with various constructs tightly linked to Petrides' suggested facets of trait EI, as discussed below.

First, parenting style is related to adaptability, emotion regulation and impulsiveness. Williams, Ciarrochi and Heaven (2012) found that high school adolescents with authoritative parents scored higher in their ability to appropriately adapt to

environmental demands and internal experiences in order to achieve their goals (psychological flexibility). In contrast, adolescents with authoritarian parents demonstrated lower psychological flexibility. Furthermore, parenting styles characterized by high responsiveness and support were significantly related to the access to multiple and more advantageous emotion regulation strategies in children, such as optimal active and support-seeking strategies (Kliewer, Fearnow & Miller, 1996; Morris, Silk, Myers & Robinson, 2007; Valiente, Fabes, Eisenberg & Spinrad, 2004). Moreover, authoritative parenting correlated negatively with impulsive Internet use (Floros & Siomos, 2013), impulsive symptoms and alcohol-related problems, through higher levels of monitoring (Patock-Peckham, King, Morgan-Lopez & Ulloa, 2011). On the other hand, suboptimal parenting, indulgent or neglectful, has been linked to drug use and misconduct (Lamborn, Mounts, Steinberg & Dornbusch, 1991) and emotional eating (Tophama, Hubbs-Taita, Rutledgea *et al.*, 2011).

Moreover, previous research has provided evidence for the effect of parenting style on adolescents' self-esteem, self-motivation and stress regulation. Adolescents from authoritative homes have higher self-esteem (Milevsky, Schlechter & Netter, 2007), whereas parental authoritarianism is inversely related to self-confidence and self-conceptions (Chan & Koo, 2011; Furnham & Cheng, 2000; Heaven & Ciarrochi, 2008; Lamborn *et al.*, 1991). Additionally, Padilla-Walker, Day, Dyer & Black (2013) found that authoritative fathers tend to have offspring with higher perseverance, persistent despite delays and obstacles, and internal motivational sources. Regarding the ability to regulate stress, children and adolescents from authoritative homes have less internalized distress, unlike those from authoritarian ones (Steinberg *et al.*, 1994). Likewise, Sideridis and Kafetsios (2008) found that students' perceptions of their fathers' parenting style were highly related to their stress response during a class presentation.

Additionally, adolescents who perceive their parents as authoritative tend to have better social skills, to be more popular, and to demonstrate more socially adaptive behavior and empathy (Baumrind, 1991; Steinberg, Lamborn, Darling, Mounts & Dornbusch, 1994). Alternatively, adolescents with intrusive or overprotective parents appear to be less socially skillful and engage in more delinquent behavior (McElhaney & Allen, 2001). Positive parenting appears to affect friendship quality, possibly through the development of social skills (Betts, Trueman, Chiverton, Stanbridge & Stephens, 2013) and adolescents' competence in interpersonal relationships, including intimate relationships (Drózd & Pokorski, 2007). Supportive and responsive parenting has also been linked to empathy-related responding in children and adolescents, providing evidence for the effect of parenting on the ability to take someone else's perspective (Eisenberg, Fabes, Schaller, Carlo & Miller, 1991; Laible & Carlo, 2004). Furthermore, developed empathy, in part, explains the relationship between maternal support and friendship quality (Soenens, Duriez, Vansteenkiste & Goossens, 2007), while the underdeveloped empathy due to permissive parenting appears to boost antisocial behavior (Schaffer, Clark & Jeglic, 2009).

Finally, family interactions and authoritative parenting have been associated with higher levels of happiness among children

and adolescents (Furnham & Cheng, 2000; Holder & Coleman, 2009). Optimism seems to be affected by authoritativeness as well and to function as a moderator of parenting, and self-esteem, depression and university adjustment (Jackson, Pratt & Pancer, 2005).

PRESENT STUDY

The purpose of this study was to examine the potential relationship of parenting styles with trait EI in an adolescent population. As previously mentioned, research exploring the association between parenting and trait EI is limited. Nevertheless, the literature presented above, linking specific parental practices to trait EI and parenting styles to emotional constructs closely related to trait EI facets (e.g. emotion regulation and self-esteem), suggests that parenting styles would significantly contribute to adolescents' global trait EI. Since parenting style reflects parents' attitudes toward the children, which create an emotional climate, we believe that a negative/hostile emotional climate would result in emotional reactivity and insecurity (Morris *et al.*, 2007), and, thus, poor emotional self-perceptions. On the other hand, a positive/consistent emotional climate allowing free expression of emotions is expected to lead in emotional competence (Morris *et al.*, 2007) and, thus, strong emotional self-perceptions. Findings suggesting that trait EI can be improved after training (Nelis, Quoidbach, Mikolajczak & Hansenne, 2009; Rutledge & Petrides, 2012), providing evidence for the flexibility of this characteristic, make the investigation of this relationship even more critical from a practical perspective. Specifically, our study aims to develop better understanding of how parenting styles contribute to the development of trait EI, with the long term goal of advancing our knowledge of how parenting styles could serve as a prime intervention target to improve trait EI and, consequently, prevent adolescent behavioral problems or other conditions that could emerge due to poorly developed trait EI (Gugliandolo *et al.*, 2015).

We examined the following hypotheses: (1) Authoritative parenting is positively related to trait EI (Milevsky, Schlechter & Netter, 2007; Williams *et al.*, 2012) and (2) Permissive and authoritarian parenting is negatively related to trait EI (Furnham & Cheng, 2000; Heaven & Ciarrochi, 2008; Milevsky *et al.*, 2007). In order to avoid potentially significant confounding issues, we adjusted for a number of characteristics that are expected to relate to adolescents' trait EI. Specifically, based on findings that show a link between parents' divorce and children's psychological wellbeing (Amato & Sobolewski, 2001), we assumed that marital status plays a role in adolescent trait EI. Furthermore, as parental education, partially indicative of the socioeconomic status of the family, is linked to adolescent stress coping, substance abuse (Wills, McNamara & Vaccaro, 1995), and wellbeing (Bradley & Corwyn, 2002), it was expected that it would contribute to adolescent trait EI as well. Regarding gender, studies examining its effect on trait EI are inconclusive (Gugliandolo *et al.*, 2015; Tsousis & Kazi, 2013); thus, we decided to control for this effect and to evaluate its contribution to trait EI in the current study. Additionally, given that trait EI or at least some of its components have been found to change with age (Derksen, Kramer & Katzko, 2002; Palmer, Manocha, Gignac &

Stough, 2003), we assumed that adolescent trait EI would be higher in older students. Finally, given that our sample was selected based on cluster sampling (with the clusters corresponding to school classes), participants of the same cluster, namely, adolescents from the same class, are expected to be associated. This is due to the fact that they interact on a daily basis and, also, are exposed to some extent to the same experiences and social/psychological stimuli. Therefore, we used linear-mixed effects models to account for the within-class association in our data.

To our knowledge, our study is the first to investigate parenting styles as an antecedent of trait EI, while also taking into account other possible trait EI predictors. From a scientific perspective, revealing such a relationship between parenting styles and trait EI is crucial for the advancement of developmental science and contributes to a more thorough understanding of the constellation of personality traits that are influenced by parenting styles. Also, from a practical perspective, identifying such a relationship could advance primary prevention programs by suggesting intervention on parenting style in order to enhance trait EI and reduce behavioral and psychological problems in adolescence.

METHODS

Participants

The sample consisted of 127 adolescents (47.2% females) with mean age 16.4 years (SD = 0.96 years, range = 15–19) from high schools located in Attica, Greece. The majority of the participants were Greeks (89.7%), 6.3% had Albanian ethnicity, 1.6% Greek-American, 0.8% Moldovan, 0.8% Filipino and 0.8% Korean. However, all students in this small proportion of non-Greeks were fluent Greek speakers. Forty-seven (37%) adolescents came from the first grade of high school, 48 (37.8%) from the second grade and the rest 32 (25.2%) from the third grade. Sixty-seven (40%) of the adolescents' fathers and 86 (53.2%) of the adolescents' mothers had earned a bachelor's or master's/doctoral degree. Most of the parents were married (86.4%) and a small proportion were divorced (8.8%), separated (3.1%) or widowed (1.6%). Thirty-one (24.6%) of the participants had no siblings, 79 (62.2%) had one, 11 (8.7%) had two and the rest (3.9%) had three siblings.

Materials

Trait EI. The Trait Emotional Intelligence Questionnaire - Adolescent Short Form-TEIQue-ASF (Petrides *et al.*, 2006) was used to measure trait EI. This self-reported measure is composed of 30 items, two for every facet of the model, that is, adaptability, assertiveness, emotion perception, emotion expression, emotion management, emotion regulation, impulsiveness, relationships, self-esteem, self-motivation, social awareness, stress management, trait empathy, trait happiness and trait optimism. Participants are asked to respond to the degree of agreement to each item, on a scale of 1 (completely disagree) to 7 (completely agree). Examples of the items are: "I usually find it difficult to regulate my emotions"; "I'm usually able to influence the way other people feel." The internal consistency of the scale for the current sample was good (Cronbach's alpha = 0.83). A Greek translation of the instrument was used, done by R. Pita (Aristotle University of Thessaloniki) and F. Kokkinaki (Athens University of Economics and Business) in collaboration with K. Petrides (Petrides *et al.*, 2007).

Parenting styles. The Parental Authority Questionnaire-PAQ was used to measure parenting styles. It is based on the typology of Baumrind (1971) and it assesses adolescents' perceptions of parental permissiveness,

authoritarianism and authoritativeness. This questionnaire consists of 60 items, concerning both mothers and fathers' parenting, in which participants are asked to respond to the degree of their agreement to statements scored by a five-point Likert scale (from strongly disagree to strongly agree). Sample items are: "Even if her children didn't agree with her, my mother felt that it was for our own good if we were forced to conform to what she thought was right (authoritarian)," "My mother has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable (authoritative)," "As I was growing up, my mother seldom gave me expectations and guidelines for my behavior (permissive)." Both forward and backward translations were performed in order to use the PAQ in our sample.

Due to high correlations of adolescents' perceptions of their mothers and fathers' parenting styles ($r > 0.55$, p -values < 0.001) a combination of the mothers and fathers' parenting styles (i.e. the mean score of the two parents) was considered for further analyses. Based on Wald tests from a linear mixed-effects model, there was no evidence for different effects of parenting style scores between fathers and mothers ($p > 0.429$ for all three parenting style scores). As a result, for reasons of parsimony of the multivariable model, the average score of mothers and fathers' parenting for each scale was used in order to increase statistical power. The internal consistencies (Cronbach's alpha) of the three subscales of the combined parenting styles in our sample were: Permissiveness = 0.59, Authoritarianism = 0.78, Authoritativeness = 0.84.

Procedure

We selected our sample based on random cluster sampling. Random cluster sampling is a random sampling scheme that ensures unbiasedness of linear estimators of the corresponding population parameters (Levy, 2005). We received a list containing all high schools and the corresponding classes from the Greek Ministry of Education. Based on this sampling frame, we randomly selected seven classes (or clusters in statistical sampling terminology) using the random sampling routine available in Stata 13 (StataCorp, College Station, TX). The randomly selected classes belonged to seven different high schools. Finally, our sample included all students of the seven randomly selected classes present at school the day that the questionnaires were distributed. An approval was obtained by the Ministry of Education for the conduct of this study in the selected schools. Subsequently, the school's authority and teachers gave their permission for the questionnaires administration before the start of the study. Students, after being informed about their rights, the purpose of the study, the procedures to be undergone, and the potential risks and benefits of participation, were given the option to refuse to participate in the study. After providing their consent to participate, they received and completed the questionnaires in the presence of the teacher. The study materials were completed by all students simultaneously in class during one academic hour. The questionnaires were completed anonymously in order for the students' privacy to be protected. No incentive was provided to the students in order to take part in the study. The response rate was 100% with all students agreeing to participate and to complete the questionnaires. However, 17 participants (approximately 13%) had incomplete data in some items and, thus, were excluded from any further analysis.

Statistical analysis

Proper graphical tests (P-P plots) were used to evaluate the assumption of a normal distribution in trait EI and parenting style scores. Also, the levels of skewness and kurtosis of the distribution of these variables were checked. For trait EI, the level of skewness was -0.06 and the level of kurtosis was 0.01 . For authoritativeness, the level of skewness was -0.08 and the level of kurtosis was -0.32 . For authoritarianism, the level of skewness was 0.36 and the level of kurtosis was 0.02 . For permissiveness, the level of skewness was -0.23 and the level of kurtosis was 0.11 . No significant deviations from normality were observed. Consequently, any further analysis was based on parametric statistical methods that are associated with higher statistical power compared to non-parametric methods. Specifically, the bivariate associations between trait EI and each parenting style were estimated using the Pearson's correlation coefficient. To test the potential difference in reported parenting styles between the two genders, we applied the Student's t -test. In order to estimate the association parameters of parenting styles with trait EI, while adjusting for potential confounders, we applied a mixed-effects linear regression model. In our setting, the usual linear regression was not valid because the assumption of independent observations was violated. This is due to the fact that adolescents from the same class interact on a daily basis and are exposed to some extent to the same experiences and stimuli. In contrast, the linear mixed-effects model, takes explicitly into account the potential association between adolescents within the same class by incorporating a class-specific random intercept in the model. An R^2 measure of explained variation for linear mixed-effects models (Xu, 2003) was also calculated. All statistical procedures were performed using Stata 13 for windows.

RESULTS

Table 1 shows the means and standard deviations (SD) of trait EI and parenting style scores by gender and overall. Independent samples t -tests provided evidence that there was a statistically significant difference on trait EI between males and females, $t(108) = 2.27$, $p = 0.03$, with males ($M = 4.95$, $SD = 0.69$) receiving higher scores than females ($M = 4.63$, $SD = 0.76$) on average. On the other hand, there was no evidence for gender differences in self-reported parenting style scores, $t(108) = 0.95$, $p = 0.34$, for authoritativeness, $t(108) = 1.02$, $p = 0.31$ for authoritarianism, and $t(108) = -0.17$, $p = 0.86$, for permissiveness.

Bivariate correlations between the variables, that is, trait EI, authoritativeness, authoritarianism and permissiveness, are presented in Table 2. Trait EI was positively correlated with authoritativeness, $r(108) = 0.43$, $p < 0.001$ and negatively correlated with authoritarianism, $r(108) = -0.31$, $p < 0.001$. The relationship between permissiveness and trait EI was not statistically significant, $r(108) = 0.11$, $p = 0.27$.

Results from the multivariable mixed-effects model are presented in Table 3. The final model explained approximately 26% of the total variability of trait EI. The results showed that

Table 1. Means, standard deviations and significance of differences between trait EI and parenting style scores, and gender

	Males M (SD)	Females M (SD)	Overall M (SD)	t	d
Trait EI	4.95 (0.69)	4.63 (0.76)	4.81 (0.74)	2.27*	0.43
Parenting styles					
Authoritativeness	35.49 (5.17)	34.55 (5.14)	35.06 (5.15)	0.95	0.18
Authoritarianism	23.77 (5.92)	22.57 (6.52)	23.23 (6.20)	1.02	0.19
Permissiveness	29.32 (4.45)	29.46 (4.12)	29.38 (4.28)	-0.17	-0.03

Notes: d = Cohen's effect size; * $p < 0.05$.

Table 2. Correlation between trait EI and parenting styles

	Trait EI	Authoritativeness	Authoritarianism	Permissiveness
Trait EI	1	0.43***	-0.31***	0.11
Authoritativeness		1	-0.41***	0.03
Authoritarianism			1	0.04
Permissiveness				1

Note: *** $p < 0.001$.

Table 3. Multivariable mixed-effects model for trait EI

	b	SE	z	p	R ²
Authoritativeness	0.27	0.07	3.92	<0.001	0.26
Authoritarianism	-0.10	0.06	-1.77	0.08	
Permissiveness	0.08	0.07	1.05	0.29	
Gender					
Male	0				
Female	-0.29	0.12	-2.37	0.02	
Postsecondary education					
No	0				
Yes	0.32	0.13	2.54	0.01	
Age	0.04	0.07	0.52	0.61	
Married parents					
No	0				
Yes	-0.20	0.20	-1.02	0.31	
Constant	2.47	1.46	1.69	0.09	

Notes: Postsecondary education: either father or mother or both; the parenting style (authoritativeness, authoritarianism, permissiveness) effect corresponds to a five-unit increase in parenting style; the age effect corresponds to one year increase.

authoritativeness was related to higher trait EI ($b = 0.27$, $z = 3.92$, $p < 0.001$), while controlling for authoritarianism, permissiveness, age, gender, education and marital status of the parents. The association of authoritarianism with trait EI was marginally significant ($b = -0.10$, $z = -1.77$, $p = 0.08$), indicating a negative association, while controlling for the rest variables of the model. There was no evidence of an association between permissive parenting style and trait EI ($b = 0.08$, $z = 1.05$, $p = 0.29$). Females had lower trait EI on average compared to males after controlling for covariates ($b = -0.29$, $z = -2.37$, $p = 0.02$). Also, adolescents with at least one parent with postsecondary education scored better on average on trait EI ($b = 0.32$, $z = 2.54$, $p = 0.01$). In contrast, there was no evidence for a relationship between age and marital status of the parents, and self-reported trait EI ($b = 0.04$, $z = 0.52$, $p = 0.61$ and $b = -0.20$, $z = -1.02$, $p = 0.31$ for age and marital status respectively).

DISCUSSION

Given the limited research on trait EI's predictors, the present study provides the first, to our knowledge, empirical evidence that parenting styles are related to adolescents' trait EI. Based on a representative sample of Greek high school students that was selected using a random cluster sampling scheme and appropriate

statistical analyses that accounted for the potential confounders and the association between adolescents within the same class, we tested the hypotheses of positive association between authoritativeness and trait EI, and negative association between permissiveness/authoritarianism, and trait EI. In our case, the usual linear regression was not applicable due to the violation of the independent observations assumption caused by the potential association between adolescents within the same class. In contrast, the linear mixed-effects models are valid in our study since they explicitly take into account the potential interdependence of the observations. We found that trait EI was positively associated with authoritative parenting, but negatively associated with authoritarian (although the association only approached statistical significance). Finally, males self-reported higher levels of trait EI on average, while adolescents coming from homes where neither parent had completed postsecondary education tended to score lower on the trait EI scale. There was no evidence for a relationship between permissive parenting and trait EI.

As previously mentioned, the final model revealed a statistically significant positive association between adolescents' trait EI and their perceptions of their parents as authoritative, in contrast to Alegre's study findings (2012b), where no statistically significant associations were observed. We believe that the discrepancy between our study and Alegre's results is due to the following reasons (Alegre, 2012b). First, the target population of the former study was children 7–12 years old, whereas our population of interest was adolescents 15–18 years old. Since trait EI is being shaped with age, it is possible that children's trait EI is not formed yet to reflect parenting. Additionally, while in both our study and Alegre's, children's ratings are used to assess trait EI, Alegre used only mothers' ratings to assess parenting style, whereas we used adolescents' ratings. Clearly, this difference in the measures used could influence the emerged relationship. Also, the response rate in Alegre's study was low (from the 800 mothers asked to participate the relationship of parenting style and trait EI was assessed in a sample of 88 mothers and 92 children), which could potentially have resulted in selection bias. In contrast, in the current study, we did not have response rate issues and we adjusted for potential predictors of trait EI that could act as confounders and affect the actual relationship under evaluation. One further methodological asset of the present study is the random and representative sample of the adolescent population of a region (Attica) that encompasses the most populated and capital city of Greece (Athens). Thus, we are confident that our results suggest a link between positive parenting and adolescents' emotional development. While an extensive body of literature has already identified authoritative parenting as a decisive factor in the development of specific personality facets related to affect, such as emotion regulation (Morris *et al.*, 2007), self-esteem (Lamborn *et al.*, 1991) and social competence, our results suggest that it is a potential significant predictor of the global trait EI as well, at least for the Greek adolescent population. We believe that the combination of high levels of both psychological control and autonomy granting that characterizes an authoritative parent provide the base for psychological and emotional competence in general, and trait EI in particular.

On the other hand, we propose that parents who provide high control, but low care (where authoritarian differ from authoritative

parents) affect adolescent trait EI in a negative way, a finding in line with that of Gugliandolo *et al.* (2014) study. Their results have shown that a specific parenting practice inextricably linked to negative parenting, namely, parental psychological control, negatively predicts trait EI. According to our results, authoritarianism is linked to a lower level of trait EI on average (statistically significant result in the univariable and marginally significant in the multivariable analysis). As has been suggested, harsh discipline and constant criticism of a child's emotional expression may lead children to a consistent effort to gain approval from or to avoid the disapproval of the parent, rather than to understand their own internal states and regulate them appropriately (Williams *et al.*, 2012). This perspective may provide some explanation for how authoritarianism might inhibit the development of trait EI.

Our study also supports an association of gender and parents' education with adolescent trait EI. As far as gender differences are concerned, previous findings are inconclusive. Our results are consistent with Mikolajczak, Luminet, Leroy and Roy's (2007) results finding male adolescents scoring higher in global trait EI. Gugliandolo *et al.* (2015) also found gender differences, with male adolescents scoring higher on three of the four subscales of TEIQue (i.e. self-control, sociability and well-being). Studies on self-evaluations of performance have suggested that there is some degree of self-report bias for males and females, in that males tend to be more, self-enhancing and females tend to be more self-derogatory (Beyer, 1990). The observed difference, based on our results, indicates that either males simply have higher trait EI on average or one of the two genders perceives their performance on emotional abilities enhanced, or tend to derogate it. Finally, parental education related to adolescents' trait EI. There is some evidence in the literature in line with our result, as links between socioeconomic status or parental education (a partial indicator of the socioeconomic status) and children's stress coping, substance abuse and well-being have been found (Bradley & Corwyn, 2002; Wills *et al.*, 1995). Moreover, according to the family stress model (Conger & Donnellan, 2007), low socioeconomic status predicts less-than-optimal parenting through family stress. Based on the literature, we can assume that the parents' level of education is related to the financial level of the family (Conger, Wallace, Sun, Simons, McLoyd & Brody, 2002). As economic conditions have been indicated as a significant predictor of emotional distress of caregivers, they may be linked to disrupted parenting practices and poor child adjustment as well (Conger *et al.*, 2002). As a result, the observed relationship may be due to the association of parent education with other not measured factors and not a result of a direct association of this variable with adolescents' trait EI.

Several limitations of our study are noteworthy. First, although our sample was representative of the Greek adolescents' population and the random cluster-sampling scheme that we used ensured unbiasedness of any linear estimator of the corresponding population parameters (Levy, 2005), the number of participants was relatively small. As a result, while larger differences could be statistically justified given our sample size, more subtle differences may require a larger sample to be detected. The finding that permissiveness is not related to trait EI could either suggest an absence of linkage between the two variables, or it

may be a result of the relatively small number of observations in this study (potential type II error). Second, our sample was geographically, age, and racially homogeneous. Thus, findings should be replicated in more diverse samples to be more confident in the robustness of the associations. Third, the reliability of the permissiveness scale of PAQ was relatively low. This may also constitute a possible explanation for the absence of association between permissiveness and trait EI. Several studies have reported low internal consistency for the permissiveness scale (Dwairy, 2004; Tung & Yeh, 2014). This might provide some evidence that permissiveness should be perceived as two distinct constructs, indulgent and neglectful parenting style, as has been suggested by several theorists (Baumrind, 1991). As a result, future research should more thoroughly explore the role of the permissive aspect of parenting in adolescents' trait EI to form a better picture of the reality. Forth, this study was not experimental and, consequently, causal inferences cannot be substantiated. Specifically, the emerged relationship could be inverse, namely, adolescents' trait EI influences parenting style. The use of a questionnaire that asks about memories of childhood may imply that parenting preexists the development of adolescent trait EI. However, the evidence provided by such a questionnaire is not adequate to establish a causal relationship. It would be of great scientific interest to conduct a longitudinal study in order to better understand the relationship between parenting and trait EI. Last, trait EI and parenting styles measurement was based on self-report questionnaires, which is prone to many kinds of response bias. The use of questionnaires completed by both adolescents and their parents could balance the bias coming from adolescents. The use of a more objective measurement to measure trait EI is not feasible, since trait EI reflects emotion-related self-perceptions (Petrides *et al.*, 2007), unlike ability EI, which is a cognitive ability and can be measured by performance tests. Nevertheless, it might be of great interest for future studies to compare the impact of parenting on both trait and ability EI.

In conclusion, the current study provides evidence for the impact of a specific aspect of parenting, that is, parenting styles, on adolescent trait EI, extending existing literature for its antecedents in the family context. It seems that not only specific parenting practices influence adolescents' emotion-related dispositions and self-perceptions, but the emotional climate in which parents choose to raise their children plays a significant role as well. Such findings have both scientific and practical significance. First, they demonstrate a link between environmental experiences of adolescents and a specific personality trait, contributing to the advancement of developmental science. Second, they suggest that intervention programs with a preventive nature, targeting parents with young children, could result in a well-shaped trait EI of the children growing to adolescents. Additionally, since trait EI is a predictor of various outcomes (e.g., physical and psychological health) and is not a rigid personality trait immune to change (Nelis *et al.*, 2009), interventions targeting the modification of parenting styles could play an important role in the prevention of behavioral or psychological problems through the optimization of trait EI. Our study provides some evidence that Rutterledge and Petrides' (2012) suggestion to include parents in interventions attempting to improve adolescent behavioral problems through the optimization

of trait EI, would have a positive effect and might make the results of the intervention program more stable in time and across various contexts. Parenting style, along with other variables, such as temperament and cultural values, may constitute a key factor of the mechanism through which trait EI is being shaped, and a key target for the prevention of problems arising in socio-emotional development. The formation of trait EI at a young age, critical to the individual's development, could contribute to better subsequent emotional adaptation.

We thank the two anonymous reviewers of this paper for their constructive comments.

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Received 20 February 2015, accepted 15 October 2015



Parenting Styles and Parent–Adolescent Relationships: The Mediating Roles of Behavioral Autonomy and Parental Authority

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OPEN ACCESS

Edited by:

Claudio Longobardi,
Università degli Studi di Torino, Italy

Reviewed by:

Lei Chang,
University of Macau, China
Nicola Carone,
La Sapienza University of Rome, Italy

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Specialty section:

This article was submitted to
Developmental Psychology,
a section of the journal
Frontiers in Psychology

Received: 08 August 2018

Accepted: 23 October 2018

Published: 13 November 2018

Citation:

Bi X, Yang Y, Li H, Wang M,
Zhang W and Deater-Deckard K
(2018) Parenting Styles
and Parent–Adolescent Relationships:
The Mediating Roles of Behavioral
Autonomy and Parental Authority.
Front. Psychol. 9:2187.
doi: 10.3389/fpsyg.2018.02187

The parent–adolescent relationship has been a classic research topic, and researchers have found that parenting styles (e.g., authoritative, authoritarian) are closely related to various qualities of parent–adolescent relationships (e.g., cohesion, conflict). However, little empirical work has addressed how these variables correlate with each other in mainland China, nor has prior research addressed internal psychological mechanisms. The present study investigated the associations between parenting styles and parent–adolescent relationship factors, examined the mediating effects of adolescents' expectations of behavioral autonomy and beliefs about parental authority, and explored whether adolescent gender moderated these effects. Results from a sample of 633 Chinese adolescents (7th grade: $M_{\text{age}} = 13.50 \pm 0.62$ years, 9th grade: $M_{\text{age}} = 15.45 \pm 0.67$ years, 11th grade: $M_{\text{age}} = 17.30 \pm 0.75$ years) suggested similar levels of parent–adolescent conflict frequency for all parenting styles. However, for parent–adolescent conflict intensity, youth of neglectful and authoritarian parents reported higher levels compared to those with indulgent parents. The highest levels of cohesion with both parents were reported by adolescents with authoritative parents, followed by indulgent, authoritarian and neglect parenting styles. Cohesion with mothers for youth with authoritative or indulgent mothers was higher for girls than boys. Adolescents' expectation for behavioral autonomy mediated the links between parenting style and conflict, whereas adolescents' beliefs about the legitimacy of parental authority mediated the links between parenting style and cohesion; some of these mediating effects differed by gender. Findings highlight the importance of studying potential effects of adolescents' values and attitudes within the family system in specific cultural contexts.

Keywords: parenting style, parent–adolescent relationship, behavioral autonomy, parental authority, gender

INTRODUCTION

Variations in parenting styles and parent–child relationship qualities are long-standing research topics in developmental and family psychology. Previous research has shown that parenting styles are critical family context factors which are closely related to parent–adolescent relationships (Shek, 2002). Despite the large number of studies on the associations between parenting styles

and parent-adolescent relationships, existing research mainly has focused on the direct effects of parenting styles on parent-adolescent relationships, while the underlying mechanisms through which parenting styles are associated with parent-adolescent relationships have seldom been examined. The present study examined the possible mediating effects of adolescents' expectations for behavioral autonomy and beliefs in the legitimacy of parental authority, on the link between parenting style differences and variability in relationship conflict and cohesion, in a sample of youth from mainland China. We also tested whether the direct and mediated effects differed for girls and boys.

Parenting Styles and Parent-Adolescent Relationships

Parenting style is defined as a constellation of parents' attitudes and behaviors toward children and an emotional climate in which the parents' behaviors are expressed (Darling and Steinberg, 1993). In the field of parenting, Maccoby and Martin's (1983) and Baumrind's (1991) typological approach of conceptualizing parenting has had a tremendous impact. They classified parenting into four types based on responsiveness and demandingness (Maccoby and Martin, 1983; Baumrind, 1991). Authoritative parenting style is characterized as high in responsiveness and demandingness. Authoritative parents provide not only support and warmth, but also clearly defined rules and consistent discipline (Baumrind, 1991). Authoritarian parenting style is characterized as low in responsiveness but high in demandingness. Parents of this style tend to use hostile control or harsh punishment in an arbitrary way to gain compliance, but they seldom provide explanation or allow verbal give-and-take. Indulgent parenting style is characterized as low in demandingness but high in responsiveness. Indulgent parents are responsive to their children and satisfy children's needs, but they fail to set proper disciplinary, exhibit behavioral control, or make demands for mature behaviors. Finally, neglectful parenting style is characterized as low in responsiveness and demandingness. Neglectful parents are parent-centered and they are seldom engaged in child rearing practices. They neither provide warmth nor set rules for their children.

Adolescence is a critical developmental period that requires parents and youth to renegotiate their relationships (Laursen and Collins, 2009). Existing research has shown that variation in parenting styles is related to differences in parent-adolescent relationship features. Overall, most studies with Western samples have consistently found that authoritative parenting style is associated with higher levels of parent-adolescent cohesion (Nelson et al., 2011) and lower levels of conflict frequency (Smetana, 1995), conflict intensity (Smetana, 1995), and total conflict (McKinney and Renk, 2011). In contrast, an authoritarian parenting style is associated with lower cohesion (McKinney and Renk, 2011) and higher conflict frequency (Smetana, 1995; Sorkhabi and Middaugh, 2014), intensity (Smetana, 1995), and total conflict (McKinney and Renk, 2011). For instance, in a sample of American adolescents, Smetana (1995) found that more frequent and intense conflicts were

predicted by more authoritarian parenting and less authoritative parenting. Similarly, Sorkhabi and Middaugh (2014) analyzed data from American adolescents who had Asian, Latino, Arab, European or other ethnic background. They found that adolescents of authoritative parents reported less conflict than those with authoritarian parents.

Most previous research on the associations between parenting styles and parent-adolescent conflict and cohesion focused on one or the other (e.g., Smetana, 1995; Nelson et al., 2011; Sorkhabi and Middaugh, 2014). However, conflict is not the opposite of cohesion, nor are increases over time in one necessarily associated with decreases in the other (Zhang et al., 2006). To comprehensively understand the links between parenting styles and these two aspects of the parent-adolescent relationship, both should be examined. Also, most previous research seldom distinguished conflict frequency and intensity or examined them simultaneously. Conflict frequency refers to how often conflict occurs, whereas conflict intensity refers to the magnitude of emotional arousal that occurs during conflict. Prior research on these two aspects of conflict has yielded mixed results. For example, Smetana (1995) found that parenting styles' links with conflict frequency and intensity were very similar. In contrast, Assadi et al. (2011) reported that frequency was lower for authoritative parents and higher for authoritarian parents—but only authoritative parenting was linked to intensity. Thus, conflict intensity and frequency both should be examined.

Another major gap in the literature is that few of the relevant prior studies examined all four parenting styles. We know of only one American study (of adolescent substance abusers) that examined conflict, cohesion, and all four parenting styles (Smith and Hall, 2008). Actually, it's also important to explore the relationships between indulgent and neglectful parenting style and parent-adolescent conflict and cohesion. Especially, neglectful parenting style which is characterized as disengaged from child rearing process may be destructive to parent-adolescent relationships. Thus, in light of the gaps in literature identified above, our first major aim was to explore the associations between all four parenting styles and parent-adolescent conflict (frequency and intensity) and cohesion. Based on prior evidence, we hypothesized that conflict (frequency and intensity) would be highest, and cohesion lowest, for youth with authoritarian parents—and conflict lowest and cohesion highest for adolescents with authoritative parents.

Adolescent Autonomy and Beliefs About Parental Authority

In spite of the numerous prior studies of the link between parenting style and parent-adolescent relationship features, there are surprisingly few that have tested mechanisms that might account for the link. We also addressed this gap in the current study. According to Darling and Steinberg's (1993) integrative model, parenting styles affect adolescents' outcomes by changing the degree to which adolescents accept their parents' attempts to socialize them. When parents use specific styles to rear children, adolescents are not just passive social beings, but play an active role in shaping the parent-adolescent relationship and in interpreting parenting behavior, in ways that

influence their own outcomes. Particularly important to this psychological process are adolescents' attitudes about behavioral autonomy and the legitimacy of parental authority (Darling et al., 2007).

Adolescents' Expectation for Behavioral Autonomy

Autonomy, in contrast to forced behavior, reflects actions that arise from the agency of the self rather than others (Chen et al., 2013). Variations in parenting style are associated with individual differences in adolescents' autonomy beliefs. Authoritative parenting has been shown to be the most beneficial to youth, with regard to fostering healthy normative development of autonomy (Baumrind, 1991). In contrast, authoritarian parents provided too much strictness and supervision for their children, while indulgent and neglectful parents provided insufficient monitoring and guidance. Adolescents with non-authoritative parents are more likely to desire for more behavioral autonomy which is not satisfied in an appropriate way (Bush and Peterson, 2013). It is important to note, however, that not all studies find authoritative parenting to be optimal for youth autonomy—differences in findings that may be due to the sample characteristics or measures being used (e.g., Darling et al., 2005; Chan and Chan, 2009).

The development of adolescents' autonomy, in turn, can have effects on parent-adolescent relationship features. Parents and adolescents expect increasing autonomy with age, but adolescents typically demand autonomy earlier than their parents are ready to grant it (Jensen and Dost-Gözkán, 2015; Pérez et al., 2016). Adolescents' desire for more autonomy than their parents wish to grant them prompts youth to exert more control of their own affairs, and to be more critical of their parents' control behaviors—a pattern that causes conflict and reduces cohesion (Fuligni, 1998; Zhang and Fuligni, 2006).

Adolescents' Beliefs About Parental Authority

In addition to developmental changes in autonomy, adolescence also is a period of youths' changes in attitudes about parental authority—specifically, the extent to which parental assertion of control is seen as an appropriate extension of their role (Darling et al., 2008). Compared to other parenting styles, authoritative parents have children and adolescents who are more likely to endorse the legitimacy of parental authority (Smetana, 1995; Darling et al., 2005; Trinkner et al., 2012). In contrast, authoritarian parents tend to define issues as falling into parental jurisdiction too rigidly, and indulgent and neglectful parents define these too permissively (Smetana, 1995; Baumrind, 2005). In those cases, adolescents and parents may be deprived of opportunities to debate and negotiate appropriate boundaries, which in turn can lead youth to question and doubt the legitimacy of parental authority.

Attitudes about legitimacy of authority are also linked with parent-adolescent relationship features. Adolescents' endorsement of parental authority is associated with greater cohesion and less conflict with parents (Zhang et al., 2006;

Jensen and Dost-Gözkán, 2015)—in one study, a pattern found in Mexican, Chinese, Filipino, and European background families (Fuligni, 1998).

In sum, there are well-established links between parenting style, adolescents' beliefs (specifically, about autonomy and parental authority), and parent-adolescent relationship qualities. However, these different constructs have not been examined all together in one study. In addition, although previous studies have examined the associations between parenting styles and parent-adolescent relationships, there was no research that examined whether adolescents' expectation for behavioral autonomy and endorsement of parental authority mediated these associations. Thus, our second aim was to test the hypothesis that expectations for behavioral autonomy and beliefs in the legitimacy of parental authority both would mediate the link between parenting styles and parent-adolescent conflict and cohesion.

The Role of Adolescent Gender

The third and final aim of the current study was to examine potential gender differences in the relationships between parenting styles, parent-adolescent conflict and cohesion, adolescents' expectation for behavioral autonomy and endorsement of parental authority. There is reason to expect differences to be found, although results may differ depending on the parenting styles and parent-adolescent relationship features in question. For instance, Shek (2002) reported an association between parental negativity and greater parent-adolescent conflict, only for girls. These differences may reflect distinct socialization goals for boys and girls, with girls oriented more toward family relationships and compliance, and boys oriented toward autonomy and self-reliance (Shek, 2002; Zhang et al., 2006). Based on previous research, we expected to find stronger associations between parenting style and parent-adolescent relationship features for girls compared to boys. However, given the lack of prior research on beliefs about autonomy and parental authority as mediators, we had no hypotheses regarding gender as moderator of those mediating effects.

Chinese Cultural Context

As a final point, another rationale for the current study was to address the dearth of research on mainland Chinese families published in the international literature. The existing evidence is almost completely dominated by studies of families from Western industrial nations, even though mainland China has the single largest population of children and adolescents in the world—in 2016, 13% or nearly one in eight of the globe's 0–14-year-olds (World Bank, 2017). We know of only one relevant published study of parenting styles and parent-adolescent relationships, which found that authoritative mothers exhibited the highest levels, and authoritarian mothers the lowest levels, of mother-adolescent cohesion (Zhang et al., 2017). Adding to the literature base to include evidence from non-Western nations such as China, serves to extend and deepen knowledge of parent-adolescent relationship processes.

Studying mainland Chinese families also offers a unique opportunity for examining family processes because its culture is so distinct from Western contexts. Two features in particular

stand out. First, China has been unique in the world in its “one child policy” implemented by the government from 1979 until 2016. This led to a significant change in the family, often described as the “4-2-1” family structure (four grandparents, two parents, and one child). In this context, the relationships between parenting styles and parent-adolescent conflict and cohesion in China may be different from those in Western cultures. Second, Chinese culture is rooted in Confucianism, which emphasizes collectivist values such as conforming to social norms, submission to authority, establishing strong relationships with others, and avoiding confrontation (Peterson et al., 2005). In this strict hierarchical framework, individuals’ requests for autonomy and any behaviors that potentially threaten group harmony are discouraged, whereas great respect for parental authority is highly valued (Fuligni, 1998). Furthermore, some research has shown that autonomy and authority beliefs among adolescents covary with family relationship features in different ways depending on cultural context. For example, one study reported that conflict intensity with mothers was greater for adolescents with lower respect for parental authority in African American and Latina, but not European American, families (Dixon et al., 2008). Thus, there is a need to broaden the diversity of samples in this literature, to better understand which aspects of the relevant family processes operate similarly, or differently, in distinct cultural contexts.

In sum, the current study addressed three aims in a mainland China sample of families: (1) to explore the links between four parenting styles and parent-adolescent relationship conflict (frequency and intensity) and cohesion, including testing the hypothesis that conflict would be highest and cohesion lowest for authoritarian parents, conflict lowest and cohesion highest for authoritative parents; (2) to test the hypothesis that the links between parenting style and parent-adolescent relationship features would be statistically mediated by adolescents’ autonomy expectations and beliefs regarding parental authority; and (3) to test the hypothesis that the links between parenting style and relationship features (explored in Aim 1) would be stronger for girls than for boys—and to also explore gender differences in the mediating effects (hypothesized in Aim 2).

MATERIALS AND METHODS

Participants and Procedure

A total of 633 students (48.5% females, in line with the proportion found in the Chinese population) in the 7th ($M_{\text{age}} = 13.50 \pm 0.62$ years), 9th ($M_{\text{age}} = 15.45 \pm 0.67$ years) and 11th ($M_{\text{age}} = 17.30 \pm 0.75$ years) grades of four schools in Jinan, the capital of Shandong Province in Middle Eastern China, completed self-report questionnaires. Because of the implementation of one child policy in mainland China, 90 percent of them were only children.

Surveys were completed in class through group administration; students were asked not to communicate with each other while completing the survey. Research staff members administered the surveys to the class by introducing the purpose of this study and the voluntary nature of participation, reading

instructions and answering any questions that arose during the data collection period. All participants gave written informed consent. Additionally, all parents of participants were notified about the research and were given the opportunity to withdraw their children from study participation. All parents gave written informed consent to allow their children to participate in this study. The Institutional Review Board of Shandong Normal University approved this study procedures.

Measures

Parenting Styles

Parenting styles were assessed using the Chinese version of Steinberg et al.’s (1994) parenting styles questionnaire (Long et al., 2012). Two subscales comprise the measure of parenting: acceptance/involvement and strictness/supervision. The acceptance/involvement subscale ($\alpha = 0.84$) was the average of 15 items that were used to assess responsive, loving and involved parenting (e.g., “I can count on my parents to help me out if I have some kind of problem.”). The strictness/supervision subscale ($\alpha = 0.78$) was the average of 12 items that was used to assess monitoring and supervision (e.g., “How much do your parents try to know where you go out at night”). The adolescents were required to indicate the strength of endorsement using a 5-point scale ranging from 1 (*completely disagree*) to 5 (*completely agree*) for each item. Confirmatory factor analysis indicated that the measurement of parenting styles (as well as endorsement of parental authority, expectations for behavioral autonomy and parent-adolescent conflict and cohesion) had acceptable construct validity and strong measurement invariance across gender (see Online **Supplementary Materials and Supplementary Table S1**).

Endorsement of Parental Authority

Adolescents’ beliefs about the legitimacy of parental authority were assessed using Chinese version of Smetana’s (1988) questionnaire (Zhang and Fuligni, 2006). Students were presented with a list of 13 topics as individual items such as curfew, choosing clothes, and choosing friends, and were asked whether father or mother could make a rule about each topic. Responses for each topic/item were coded on a 4-point scale ranging from 1 (*It’s not OK*) to 4 (*It’s completely OK*). These were averaged separately for mother ($\alpha = 0.84$) and father ($\alpha = 0.86$).

Expectations for Behavioral Autonomy

Adolescents’ expectation for behavioral autonomy was measured based on the questionnaire from Fuligni (1998). Students were presented with a list of 12 behaviors (e.g., “watch as much TV as you want”). Adolescents then indicated the degree of expectation for each item using a 4-point scale ranging from 1 (*expect heavily*) and 4 (*not expect at all*) ($\alpha = 0.86$). In order to achieve consistency across all instruments so that a high score would reflect a high level of the variable being measured, these entries were reversed score so that 1 was recoded as 4, 2 as 3, 3 as 2, and 4 as 1.

Parent-Adolescent Conflict

Adolescents’ perceptions of the incidence and intensity of conflict with their mothers and fathers were measured by the Chinese

version of Issues Checklist (Prinz et al., 1979; Zhang and Fuligni, 2006). Students indicated whether the 16 specific topics (e.g., chores, cursing) were discussed or not with their parents within the past 2 weeks (using a binary scale, *yes* or *no*). Then, for each endorsed topic of discussion, adolescents reported the conflict intensity of the discussion of each topic, using a 5-point scale that varied from 1 (*very calm*) to 5 (*very angry*). To be consistent with previous research (e.g., Fuligni, 1998), conflict frequency was computed by summing the number of discussions rated as containing anger (2 or greater on the 5-point scale). Conflict intensity was obtained by averaging adolescents' rating on those items that were discussed (mother: $\alpha = 0.72$, father: $\alpha = 0.73$).

Parent-Adolescent Cohesion

Adolescents completed the cohesion subscale of the Chinese version of Family Adaptation and Cohesion Evaluation Scales (FACES) II inventory separately for each parent (Olson et al., 1979; Zhang and Fuligni, 2006). This scale included 10 items (e.g., "My mother [father] and I feel very close to each other"). Students' perception of cohesion with parents was rated on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*), separately for mother ($\alpha = 0.82$) and father ($\alpha = 0.79$).

Controlled Variables

Grade and socioeconomic status (SES) were controlled for this study. The SES score was computed by averaging the standardized education and occupation of both parents. Parents' education was coded as 1 = equal to or below primary school, 2 = junior high school, 3 = senior high school, 4 = some college or above. The occupation was coded as 1 = peasant or jobless, 2 = blue collar, 3 = professional or semiprofessional. In terms of parents' educational level, approximately 0.8% of the mothers and 0.3% of fathers had completed primary school education or less, and 38.5% of mothers and 57.1% of fathers had a college or university degree. The remainder had either a junior high school education (7.6% of mothers and 5.5% of fathers) or a senior high school education (48.2% of mothers and 31.5% of fathers). The occupational status of mothers and fathers, respectively, was as follows: 6.2 and 2.7% were peasants or jobless, 28.4 and 23.4% had blue collar position, and 64.9 and 73.6% held a professional or semiprofessional occupation.

RESULTS

Descriptive Statistics

We used Harman's single factor test to check the common method bias. The results showed that 30 factors emerged with eigenvalues greater than 1.0 and the first factor accounted for only 16.53% of total variance. Since more than one factor emerged and the first factor did not account for the majority of the variance (Podsakoff and Organ, 1986), common method bias was not a serious concern in the present study.

Cluster analysis with K-means method was used to identify the four parenting styles. Instead of defining parentings styles *a priori* based on subjective cut-off scores (Steinberg et al., 1994), in cluster analysis families are grouped according to their scores on

various parenting characteristics (Henry et al., 2005). To validate the cluster solution, we reanalyzed the data with a different cluster method — a hierarchical cluster analysis (Henry et al., 2005; Hove et al., 2007). We repeated the hierarchical cluster analysis ten times, applying the standardized Euclidian Distance method as a distance measure and using Ward's algorithm. The cross validation procedure (Mandara, 2003) result in moderate agreements ($k = 0.71$, range: 0.67–0.75).

To label the four groups, we examined the parenting styles by computing a one-way ANOVA on the standardized scores of parenting dimensions with the clusters serving as the factors. The result revealed that the clustering variables significantly differed between the parenting dimensions [acceptance/involvement: $F(3,608) = 472.58$, $p < 0.001$, $\eta^2 = 0.70$; strictness/supervision: $F(3,608) = 280.35$, $p < 0.001$, $\eta^2 = 0.58$]. Authoritative parents were those who scored high on both dimensions (acceptance/involvement: $z = 0.95$, strictness/supervision: $z = 0.76$), whereas neglectful parents scored low on both dimensions (acceptance/involvement: $z = -1.45$, strictness/supervision: $z = -1.06$). Authoritarian parents scored low on acceptance/involvement ($z = -0.61$) but high on strictness/supervision dimension ($z = 0.50$), whereas indulgent parents scored high on acceptance/involvement ($z = 0.15$) but low on strictness/supervision dimension ($z = -0.77$).

Descriptive statistics for study variables are presented in **Table 1**, and bivariate correlations are presented in **Table 2**. Regarding descriptives, the following frequencies were found for the four parenting styles: 152 (24.0% of total sample) authoritarian; 200 (31.6%) authoritative; 83 (13.1%) neglectful; and 177 (28.0%) indulgent. The average scores of beliefs in parents' authority and expectation for behavioral autonomy ranged from 2 to 3, which implied that adolescents reported medium level of endorsement of parental authority and autonomy expectations. The average scores of conflict frequency ranged from 2 to 4 and the average scores of conflict intensity ranged from 1 to 2, which suggested that adolescents reported low level of conflict frequency and intensity. Since the cohesion scored larger than 3 (except girls with neglectful parents), adolescents reported medium-high level of cohesion with parents.

Turning to correlations, although with a few exceptions, overall the adolescents' higher expectation for behavioral autonomy was associated with greater frequency and intensity of conflict, and less cohesion. Adolescents' stronger endorsement of the legitimacy of parental authority was associated with greater cohesion, but less frequent and intense conflict.

Links With Parenting Styles

A series of 4 (parenting styles) $\times$ 2 (child gender) analyses of covariance was conducted to explore the links between four parenting styles and parent-adolescent relationships. At the same time, we also explored if adolescents' expectation for behavior autonomy and endorsement of parental authority differed as a function of adolescents' gender and parenting styles. SES and grade served as covariables.

TABLE 1 | Means and standard deviations of all study variables except parenting styles.

	Indulgent		Neglectful		Authoritarian		Authoritative		Group differences
	Male	Female	Male	Female	Male	Female	Male	Female	
Beliefs about mother's authority	2.37 (0.56)	2.16 (0.44)	2.09 (0.48)	1.99 (0.44)	2.37 (0.59)	2.48 (0.58)	2.75 (0.54)	2.71 (0.52)	Aut > Aun & Ind > Neg; Ind: M > F
Beliefs about father's authority	2.39 (0.60)	2.12 (0.46)	2.00 (0.56)	1.94 (0.53)	2.34 (0.62)	2.43 (0.61)	2.73 (0.59)	2.70 (0.55)	Aut > Aun & Ind > Neg; Ind: M > F
Expectation for behavioral autonomy	2.52 (0.68)	2.45 (0.57)	2.71 (0.67)	2.67 (0.59)	2.50 (0.66)	2.34 (0.66)	2.24 (0.69)	2.14 (0.52)	Neg & Ind & Aun > Aut
Frequency of conflict with mother	3.18 (3.18)	3.52 (2.86)	3.93 (2.86)	4.33 (3.65)	3.63 (3.06)	4.33 (3.02)	3.63 (3.25)	3.05 (2.88)	No significant difference
Frequency of conflict with father	2.20 (2.70)	2.50 (2.57)	2.63 (2.35)	2.44 (2.49)	2.63 (3.02)	3.00 (2.72)	2.87 (2.98)	2.37 (2.69)	No significant difference
Intensity of conflict with mother	1.45 (0.43)	1.47 (0.42)	1.74 (0.61)	1.75 (0.65)	1.62 (0.55)	1.64 (0.52)	1.55 (0.53)	1.43 (0.40)	Neg & Aun > Ind; Neg > Aut
Intensity of conflict with father	1.42 (0.42)	1.47 (0.49)	1.79 (0.88)	1.59 (0.66)	1.65 (0.82)	1.61 (0.67)	1.54 (0.61)	1.42 (0.44)	Neg & Aun > Ind
Cohesion with mother	3.48 (0.50)	3.70 (0.51)	3.10 (0.65)	2.94 (0.70)	3.34 (0.54)	3.48 (0.67)	3.64 (0.56)	4.03 (0.55)	Aut > Ind > Aun > Neg; Ind & Aut: F > M
Cohesion with father	3.53 (0.57)	3.56 (0.68)	3.05 (0.72)	2.95 (0.81)	3.25 (0.72)	3.33 (0.72)	3.76 (0.63)	3.78 (0.64)	Aut > Ind > Aun > Neg

Aut, authoritative parenting style; Aun, authoritarian parenting style; Neg, neglect parenting style; Ind, indulgent parenting style. M, male adolescents; F, female adolescents. Bonferroni post hoc tests were used.

TABLE 2 | Correlations for all study variables except parenting styles.

	1	2	3	4	5	6	7	8	9
(1) Beliefs about mother's authority	–	0.91***	–0.45***	–0.19***	–0.11	–0.19**	–0.10	0.32***	0.23***
(2) Beliefs about father's authority	0.89***	–	–0.44***	–0.14*	–0.08	–0.14*	–0.11	0.28***	0.26***
(3) Expectation for behavior autonomy	–0.62***	–0.56***	–	0.30***	0.23***	0.31***	0.22***	–0.27***	–0.24***
(4) Frequency of conflict with mother	–0.21***	–0.19***	0.25***	–	0.73***	0.81***	0.58**	–0.24***	–0.06
(5) Frequency of conflict with father	–0.14*	–0.14*	0.19**	0.70***	–	0.60***	0.74**	–0.09	–0.10
(6) Intensity of conflict with mother	–0.29**	–0.31***	0.31***	0.75***	0.46***	–	0.72***	–0.35**	–0.11
(7) Intensity of conflict with father	–0.23**	–0.30***	0.24**	0.37***	0.54***	0.52***	–	–0.16**	–0.20**
(8) Cohesion with mother	0.42***	0.37***	–0.22***	–0.19**	–0.15**	–0.26***	–0.18**	–	0.40***
(9) Cohesion with father	0.30***	0.41***	–0.15**	–0.14*	–0.15**	–0.26***	–0.35***	0.45***	–

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Numbers above the diagonal refer to girls, and numbers below the diagonal refer to boys.

For adolescents' expectation for behavior autonomy, the main effect of parenting styles was significant [$F(3,597) = 8.74$, $p < 0.001$]. Bonferroni post hoc t -tests indicated that adolescents of authoritative parents reported the lower level of expectation for behavioral autonomy ($M = 2.18$, $SD = 0.60$) than adolescents of neglectful [$M = 2.70$, $SD = 0.64$, $t(278) = 4.66$, $p < 0.001$], indulgent [$M = 2.48$, $SD = 0.62$, $t(371) = 3.75$, $p < 0.01$] and authoritarian parents [$M = 2.43$, $SD = 0.66$, $t(344) = 2.79$, $p < 0.05$].

For legitimacy of parental authority, the main effect of parenting styles was significant [mother: $F(3,597) = 30.26$, father: $F(3,597) = 29.62$, $ps < 0.001$]. Adolescents of authoritative parents reported the highest endorsement of parental authority (mother: $M = 2.73$, $SD = 0.53$; father: $M = 2.71$, $SD = 0.56$), whereas adolescents of neglectful parents reported the lowest endorsement of parental authority (mother: $M = 2.06$, $SD = 0.47$;

father: $M = 1.98$, $SD = 0.54$). Adolescents raised by authoritarian (mother: $M = 2.42$, $SD = 0.59$; father: $M = 2.38$, $SD = 0.62$) and indulgent parents (mother: $M = 2.26$, $SD = 0.51$; father: $M = 2.25$, $SD = 0.55$) reported endorsements of parental authority that were between the other two groups (mother: $t > 2.86$, $p < 0.05$; father: $t > 3.52$, $p < 0.01$). The interaction between gender and parenting styles also was significant [mother: $F(3,597) = 2.53$, $p = 0.056$; father: $F(3,597) = 3.03$, $p < 0.05$]. Post hoc probing revealed no gender difference for youth with authoritative, authoritarian and neglectful parents. In contrast, for youth with indulgent parents, boys reported greater endorsement of parental authority (mother: $M = 2.37$, $SD = 0.56$; father: $M = 2.39$, $SD = 0.60$) than did girls [mother: $M = 2.16$, $SD = 0.44$, $t(171) = 2.62$, $p < 0.01$; father: $M = 2.12$, $SD = 0.46$, $t(171) = 3.52$, $p < 0.01$].

Turning to intensity of conflict with parents, the main effect of parenting styles was significant [mother: $F(3,595) = 7.49$,

$p < 0.001$; father: $F(3,583) = 3.90$, $p < 0.01$). Adolescents of neglectful [mother: $M = 1.74$, $SD = 0.62$, $t(253) = 3.99$, $p < 0.001$; father: $M = 1.73$, $SD = 0.81$, $t(245) = 2.58$, $p = 0.06$] and authoritarian parents [mother: $M = 1.63$, $SD = 0.54$, $t(320) = 3.01$, $p < 0.05$; father: $M = 1.63$, $SD = 0.75$, $t(313) = 2.49$, $p = 0.08$] reported more intense conflict than those of indulgent parents (mother: $M = 1.46$, $SD = 0.43$; father: $M = 1.45$, $SD = 0.46$). In addition, adolescents of neglectful parenting also reported more intense conflict with mothers than those of authoritative parenting [$M = 1.49$, $SD = 0.47$, $t(276) = 3.61$, $p < 0.01$]. As for the frequency of conflict with parents, none of the effects was significant.

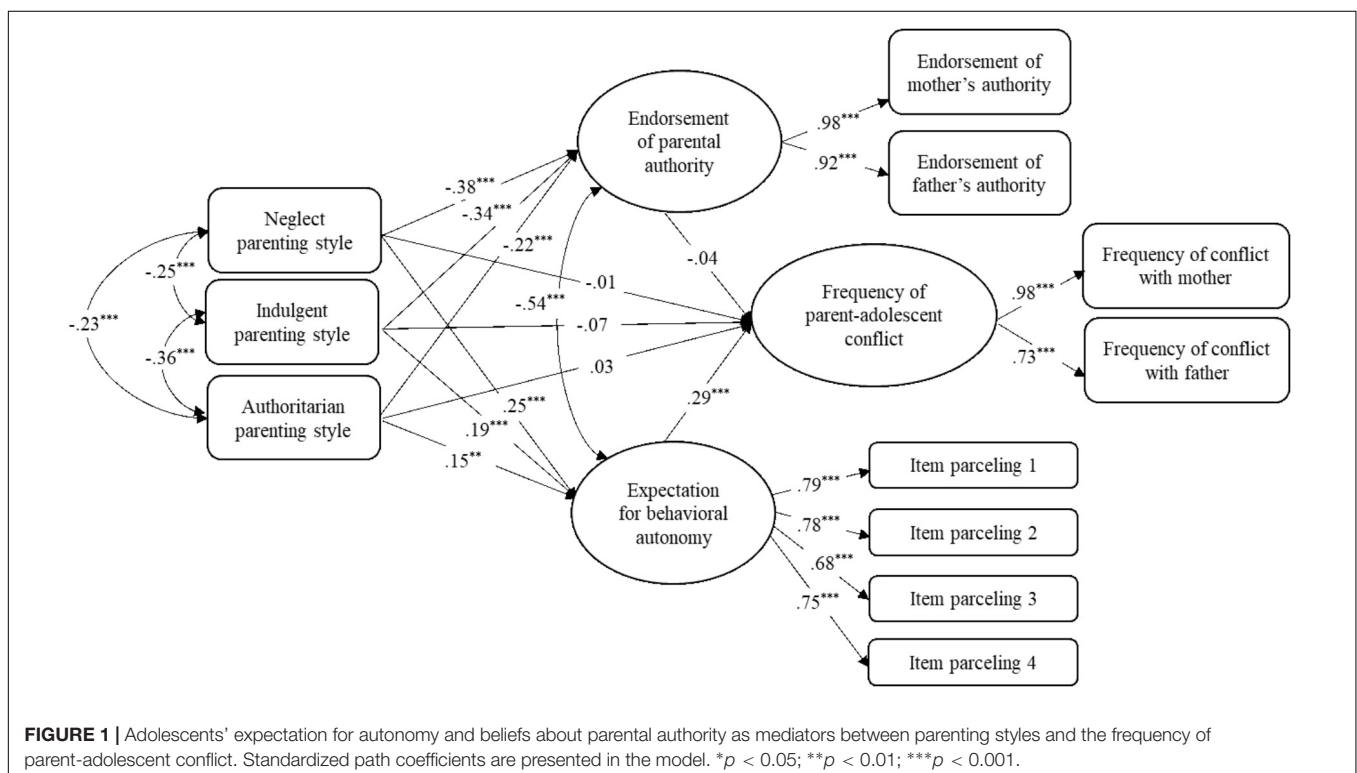
For cohesion, gender was significantly related to mother-child cohesion [$F(1,597) = 9.07$, $p < 0.01$], with greater cohesion found for daughters than sons (girls: $M = 3.70$, $SD = 0.66$; boys: $M = 3.42$, $SD = 0.59$). For mothers and fathers alike, there was a main effect of parenting styles [mother: $F(3,597) = 37.53$, father: $F(3,597) = 26.49$, $ps < 0.001$]. Adolescents of authoritative parents reported the highest level of cohesion (mother: $M = 3.85$, $SD = 0.58$; father: $M = 3.77$, $SD = 0.63$), followed by indulgent [mother: $M = 3.59$, $SD = 0.52$, $t(371) = 4.20$, $p < 0.001$; father: $M = 3.55$, $SD = 0.63$, $t(371) = 3.15$, $p < 0.05$], authoritarian [mother: $M = 3.41$, $SD = 0.60$, $t(320) = 2.62$, $p = 0.05$; father: $M = 3.29$, $SD = 0.72$, $t(320) = 3.33$, $p < 0.01$] and neglectful parents [mother: $M = 3.05$, $SD = 0.67$, $t(227) = 4.78$, $p < 0.001$; father: $M = 3.02$, $SD = 0.75$, $t(227) = 2.94$, $p < 0.05$]. Finally, the parenting style main effect for mothers was moderated by child gender [$F(3,597) = 1.34$, $p < 0.01$]. Cohesion was higher for girls than boys, only in authoritative [girls: $M = 4.03$, $SD = 0.55$; boys: $M = 3.64$, $SD = 0.56$, $t(195) = 4.77$, $p < 0.001$] and indulgent

homes [girls: $M = 3.70$, $SD = 0.50$; boys: $M = 3.48$, $SD = 0.50$, $t(171) = 2.61$, $p < 0.01$].

Mediating Effects

To test our second hypothesis that expectations for behavioral autonomy and beliefs in the legitimacy of parental authority would mediate the links between parenting style and parent-adolescent conflict and cohesion, we used structural equation modeling in Mplus 7.4 (Figures 1–3, for the analyses of conflict frequency, conflict intensity, and cohesion, respectively). SES and grade were included as covariables. The categorical parenting style variable was represented as three dummy-coded variables with authoritative parenting as the reference category. Because the autonomy expectations scale had many items, we used a common parceling technique to estimate a highly reliable latent construct for that variable by randomly assigning items into four nearly equal-sized sets of indicators (Little et al., 2002). Finally, latent variables were constructed (using mother and father scales as indicators) for the conflict and cohesion variables, as well as the attitudes about legitimate parental authority variable. All models showed good fit with the data [conflict frequency: $\chi^2 = 160.99$, $df = 56$, CFI = 0.96, TLI = 0.95, RMSEA = 0.055; conflict intensity: $\chi^2 = 167.23$, $df = 56$, CFI = 0.96, TLI = 0.94, RMSEA = 0.058; cohesion: $\chi^2 = 192.55$, $df = 56$, CFI = 0.95, TLI = 0.93, RMSEA = 0.063).

In all three models, adolescents raised in neglectful, indulgent and authoritarian homes (compared to authoritative) reported lower level of beliefs about parental authority and higher expectations for behavior autonomy. Regarding frequency (Figure 1) and intensity (Figure 2) of conflict,



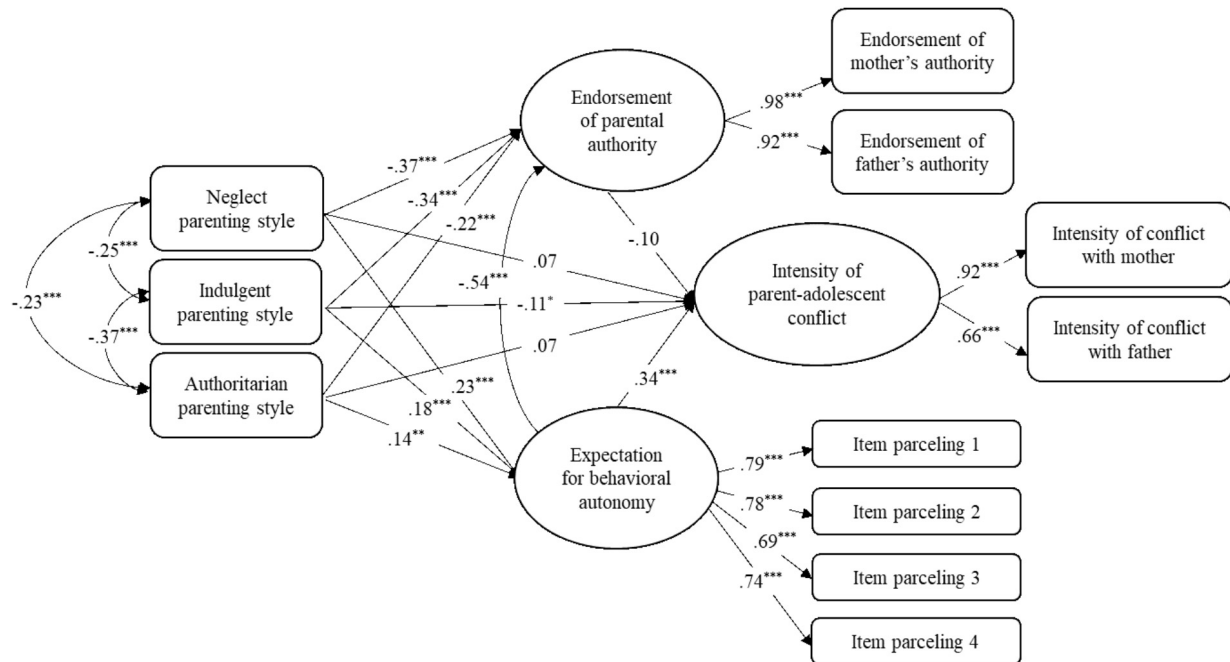


FIGURE 2 | Adolescents' expectation for autonomy and beliefs about parental authority as mediators between parenting styles and the intensity of parent-adolescent conflict. Standardized path coefficients are presented in the model. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

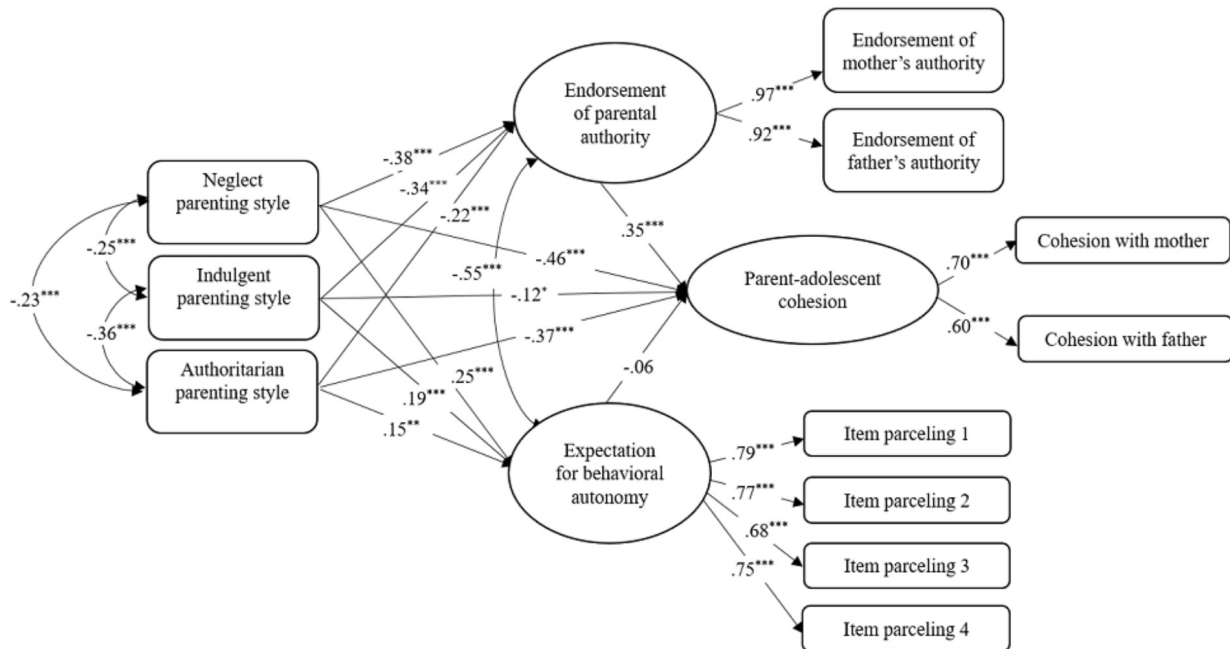


FIGURE 3 | Adolescents' expectation for autonomy and beliefs about parental authority as mediators between parenting styles and parent-adolescent cohesion. Standardized path coefficients are presented in the model. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

greater expectation of autonomy was linked with more frequent and intense conflict, whereas regarding parent-adolescent cohesion (Figure 3), greater endorsement of authority was linked with greater relationship cohesion.

Also, conflict intensity was lower for youth with indulgent parents and cohesion was lower for youth with neglectful, indulgent or authoritarian (compared to authoritative) parents.

Significance of indirect effects was computed using bootstrapping with 1000 resamples. A bias-corrected bootstrapped 95% confidence interval (CI) showed significant indirect effects from neglectful, indulgent and authoritarian parenting style to the frequency and the intensity of parent-adolescent conflict via adolescents' expectation for behavior autonomy. For conflict frequency, 95% CIs were [0.033,0.126], [0.022,0.102], and [0.014,0.092] for neglectful, indulgent and authoritarian parents, respectively. For intensity of conflict, 95% CIs were [0.042,0.131] [0.027,0.105], and [0.019,0.097] for neglectful, indulgent and authoritarian parents, respectively. There also were significant indirect effects to cohesion via adolescents' beliefs in the legitimacy of parental authority. The 95% CIs were [-0.202, -0.081], [-0.185, -0.071], and [-0.128, -0.0341] for neglectful, indulgent and authoritarian parents, respectively.

Moderating Effect of Adolescents' Gender

Given possible gender differences in paths, we conducted multiple-group analyses. We had hypothesized that the links between parenting style and parent-adolescent conflict and cohesion would be stronger for girls than boys; we did not have hypotheses regarding the mediators however. Chi-square difference statistic ($\Delta\chi^2$) were used to compare fit between models. All structural paths were constrained to be equal for boys and girls and the overall model fit was compared to a model without any constraint. For conflict frequency and intensity, the unconstrained and fully constrained models were not significantly different—suggesting no gender moderation

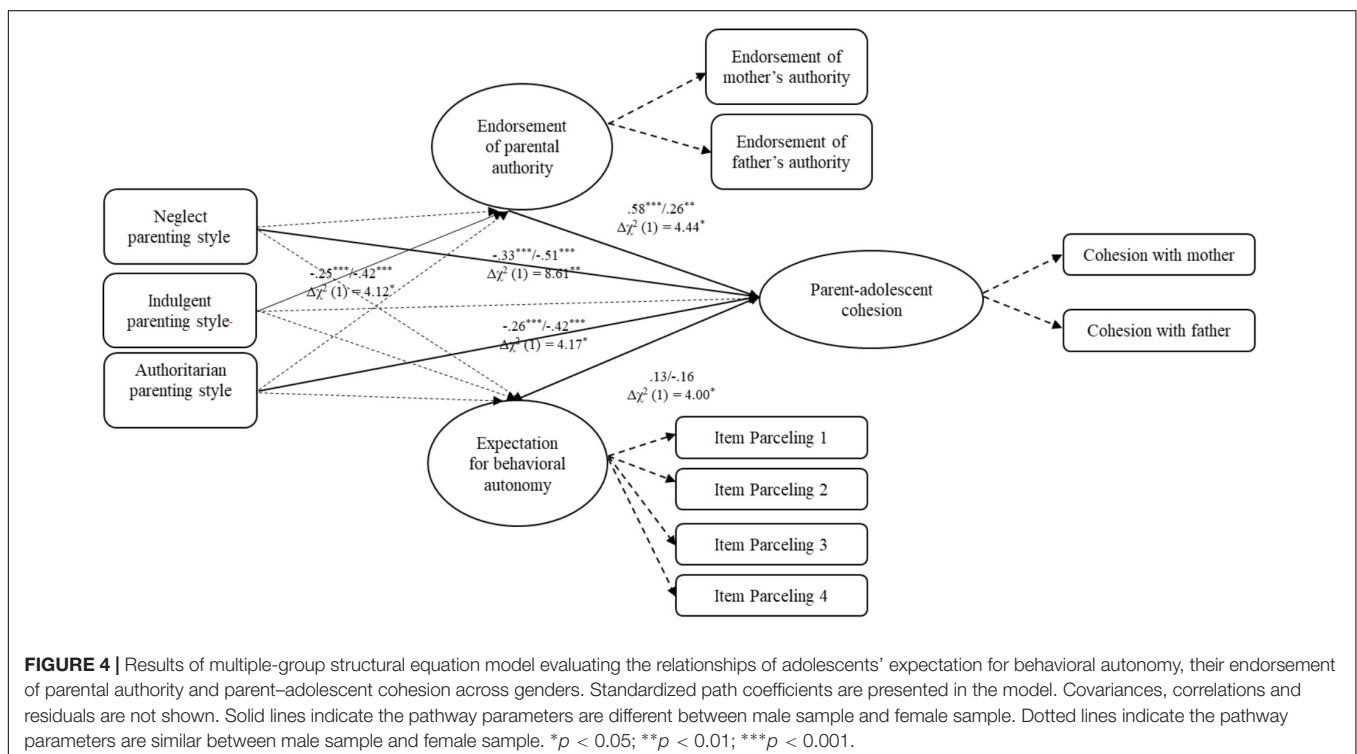
[$\Delta\chi^2(11) = 14.88$, $\Delta\chi^2(11) = 14.96$, $ps > 0.05$]. In contrast, for cohesion, the unconstrained model provided a significantly better fit than the constrained model [$\Delta\chi^2(11) = 23.45$, $p < 0.05$]. To interpret this, we compared path coefficients for boys and girls one by one (see **Figure 4**). The negative prediction of cohesion from neglectful and authoritarian parenting (relative to authoritative parenting) was stronger for girls than boys; this was consistent with our hypothesis. As for the exploration of gender differences in the mediation paths, we found that the negative link between indulgent parenting style and parental authority was stronger for girls than boys, whereas the positive link between endorsement of parental authority and cohesion was stronger for boys than girls.

DISCUSSION

In the current study, we tested the associations between parenting styles and parent-adolescent relationships (Aim 1), examined the mediating effects of adolescents' expectation for behavior autonomy and their endorsement of parental authority on these associations (Aim 2), and also explored the moderating effect of adolescents' gender (Aim 3) in a sample of adolescents from mainland China.

Parenting Styles and Relationships With Adolescents

In studies of Western families, parenting styles are recognized as having predictable associations with parent-adolescent conflict and cohesion. Previous studies have reported that adolescents



of authoritative parents have lower conflict frequency and intensity and higher cohesion than those of authoritarian parents (Smetana, 1995; Assadi et al., 2011; Nelson et al., 2011; Sorkhabi and Middaugh, 2014). In contrast to previous research, the present study showed that adolescents reported similar levels of parent-adolescent conflict frequency regardless of parenting style. This result may be attributed to the traditional Chinese culture, which places emphasis on keeping harmonious relationships and avoiding confrontation (Peterson et al., 2005). This unique cultural context may alleviate any links between parenting and frequency of conflict because Chinese adolescents may avoid conflict with their parents.

However, conflict intensity did show associations with parenting style. Compared with indulgent parenting styles, adolescents of neglectful and authoritarian parents experienced greater intensity of conflict. Indulgent parents place relatively few demands on the adolescents' behavior, giving them high degree of freedom to act as they wish. In contrast, neglectful parents are characterized as lacking warmth and guidance, whereas authoritarian parents place a high value on obedience and conformity and allow less verbal give-and-take. Conflict may be more intense in neglectful parenting style because the adolescent is making demands on a parent who otherwise is withdrawn and minimizing of the youth's needs. Also, adolescents may be dissatisfied with authoritarian parents' setting broad rules without emotional support, which leads to more intense conflict when it occurs. Other variables might also explain the effect. For instance, adolescents with neglectful parents are more likely to engage in delinquent behaviors (You and Lim, 2015), which itself may lead to more intense conflict.

In addition, the current study found that adolescents raised in authoritative and authoritarian parenting style reported similar levels of conflict intensity with parents. This is inconsistent with previous findings, which showed that Western adolescents raised in authoritarian parenting homes reported more intense parent-adolescent conflict than those raised in authoritative parenting homes (Smetana, 1995). One explanation for this difference in results may be that in Chinese culture, similar to training and tiger parenting, the motivation and intention of authoritarian parenting is to supervise children and promote optimal development, instead of simply controlling them (Chao, 1994; Kim et al., 2013). And Chinese adolescents may perceive positively the parents' intention to supervise their development, resulting in no direct association between levels of parental control and conflict intensity.

With regard to parent-adolescent relationship cohesion, the current study showed that adolescents with authoritative parents reported the highest levels of cohesion. This result extends previously published work in various cultural groups showing greater cohesion for authoritative parenting (e.g., Nelson et al., 2011). Authoritative parenting is characterized by a high degree of warmth and acceptance as well as supervision, but also including the granting of adolescent autonomy (Baumrind, 2005). In Chinese and Western cultures today, adolescents seek greater independence along with support (compared to children)—a balance of youth and parent goals that is best met in authoritative households that promote close relationships. In

contrast, neglectful parents' lack of warmth and supervision, which may be interpreted as irresponsibility, may hinder the establishment of cohesive relationships. Indulgent and authoritarian parents provided either limited guidelines or limited support for their children. All these characteristics were likely to reduce parent-adolescent cohesion.

Expectation for Behavioral Autonomy

Our second aim was, in part, to identify potential mediating effects of adolescents' expectations for autonomy. Results showed that adolescents' autonomy expectations mediated the links between parenting styles and both the frequency and intensity of parent-adolescent conflict. Specifically, compared to adolescents in authoritative homes, those in neglect, indulgent, and authoritarian homes reported stronger expectations for autonomy, which in turn were linked with more frequent and intense parent-adolescent conflict. This result was consistent with other studies which explored the relationships between parenting styles, adolescents' expectation for behavioral autonomy and parent-adolescent conflict (Baumrind, 1991; Bush and Peterson, 2013).

Adolescents in authoritative families reported the lowest expectation for behavioral autonomy. This result may be due to that adolescents with authoritative parents have achieved appropriate autonomy, therefore, their desire to acquire more autonomy is not so strong. The salutary effect of authoritative parenting style on adolescents' behavioral autonomy likely reflects the successful attainment of a socialization goal among authoritative parents: to facilitate autonomy and promote self-reliance. This socialization goal is accomplished by respecting their children's needs and recognizing that adolescents legitimately have the right to control some aspects of their lives (Bush and Peterson, 2013).

Compared with authoritative parenting style, non-authoritative parenting styles have some characteristics that are thought to hinder the development of adolescents' behavioral autonomy. Authoritarian parents are characterized as using hostile control or harsh punishment in an arbitrary manner to gain obedience and conformity (Bush and Peterson, 2013). At the same time, authoritarian parents provide limited warmth and responsiveness. In that context, adolescents are more likely to seek greater behavioral autonomy because it is not available to them. Also, indulgent and neglect parents provide few if any rules or discipline. Without sufficient firm control in the form of parental monitoring and guidance, adolescents raised in indulgent and neglect parenting families are more likely to experience high levels of independence before they can manage it themselves (Bush and Peterson, 2013). Also, adolescents in neglectful families lack parental supportiveness and those in indulgent homes are simply spoiled. Such adolescents may have high levels of autonomy, but it is not likely to have been developed through a healthy developmental process with their parents in a way that balances their growing self-determination and connectedness with their parents.

In agreement with previous research (Laursen and Collins, 2009), the current results revealed that adolescents' expectation for behavioral autonomy statistically predicted greater

parent-adolescent conflict—perhaps because parents favor less autonomy than do their teenage children. This parent-youth discrepancy has been found in individualistic and collectivist cultural groups within the United States and in other countries (Smetana, 1988; Pérez et al., 2016). Researchers have interpreted the discrepancy as a developmental phenomenon, in which adolescents' need for autonomy exceeds parental concerns with maintaining order and protecting their children from harm (Jensen and Dost-Gözkán, 2015).

Legitimacy of Parental Authority

The second mediating effect that was tested involved adolescents' beliefs in the legitimacy of parental authority; results suggested some evidence for this effect. Compared with authoritative parenting, non-authoritative parenting was negatively associated with adolescents' beliefs in the legitimacy of parental authority, which in turn were positively related to parent-adolescent cohesion. This finding is consistent with previous research (Fuligni, 1998; Darling et al., 2005; Assadi et al., 2011; Trinkner et al., 2012). Our interpretation is that with increasingly adult-like social cognitions and relationships, adolescents increasing question parental authority as they shift from unquestioning compliance to rational assessment with conditional obedience. Compared to other types of parents, authoritative parents, are more successful with continually renegotiating parental authority as their children "grow up," because they use reasoning and explanations and are responsive to adolescents' perspectives. This ongoing negotiation provides a context for parents and children to articulate and discuss divergent perspectives, which helps legitimize the parents' authority by rationally justifying the boundaries of adolescents' personal jurisdiction.

In contrast, authoritarian parents exert strict and sometimes arbitrary punishment without explanation. Also, they construct the boundaries of parental authority much more broadly than authoritative parents, which promotes resistance in adolescence (Smetana, 1995; Baumrind, 2005). In this context, adolescents struggle to internalize the legitimacy of parental authority. Also, in contrast to authoritative parents, indulgent and neglectful parents provide little information about boundaries or appropriate behavior. Such lax control can undermine parental authority, so that youth increasingly regard parents as not playing an authority role.

Parents who exercise their authority are satisfied when their adolescent children respect them, which helps maintain harmonious relationships in the family (Zhang et al., 2006; Jensen and Dost-Gözkán, 2015). As child-rearing agents, providers of information and rules, and primary sources of support for their children, parents need to establish their authority to better play their parenting roles. However, this occurs in a relationship context with adolescent, and the teenager's endorsement of parents' authority helps the adults meet their psychological needs as well. In such families, parents and youth consider each other's boundaries and areas of control through negotiation and mutual respect, which builds more cohesive relationships.

In the current study, although adolescents' expectations for behavioral autonomy and beliefs in the legitimacy of parental

authority are both critical attitude domains, their mediating effects were different: autonomy expectations mediated the effect of parenting style on parent-adolescent conflict, but authority legitimacy mediated the effect of parenting style on parent-adolescent cohesion. Certainly, although they are correlated, conflict and cohesion delineate different aspects of parent-adolescent relationships (Zhang et al., 2006)—and, each may be affected differently by levels of parental authority and adolescent autonomy. The distinction may be particularly strong in Chinese culture which emphasizes conformity and obedience (Peterson et al., 2005). Parent-adolescent conflict was more likely to be linked with adolescents' higher expectations for behavioral autonomy which runs against cultural norms, but cohesion was more likely to be linked with adolescents' greater endorsement of parental authority which is consistent with cultural norms.

Adolescent Gender

Our final aim was to test the hypothesis that the direct link between parenting style and relationship qualities would be stronger for girls than boys—and, to also explore whether there were gender differences in the mediating effects via adolescent autonomy and authority attitudes. The results indicated only a few such effects. Briefly, girls in authoritative and indulgent homes reported more cohesion with mothers than boys, and girls of neglect and authoritarian parenting reported lower level of parent-adolescent cohesion than boys. This may be due to that girls are more responsive and sensitive to social bonds than boys, and that cohesion and parenting style both reflects emotional atmosphere. Therefore, the relationships between parenting styles and cohesion were stronger for girls. Besides, girls of indulgent parents were less likely to endorse parental authority than boys, while endorsement of parental authority had greater effect on parent-adolescent cohesion for boys than girls. To the extent that parents normally set more rules and expect greater obedience of parental authority for girls than boys (Darling et al., 2005; Zhang and Fuligni, 2006), and consequently girls of indulgent parents may be more likely to feel that their parents did not shoulder the responsibility of cultivating them or establish the authority, given indulgent parents did not provide enough supervision and rules. Therefore, girls of indulgent parents endorsed lower level of parental authority. At the same time, since parents expected less conformity and obedience for boys, their endorsement of parental authority was more likely to live up to parents' expectation, which may improve relationships with parents.

Although gender moderated a few paths in the direct and mediating models, overall, the majority of paths were not significantly different for boys and girls across all of the models that were tested. This may be due to that, with the implementation of the one child policy, Chinese parenting styles and socialization practices are becoming increasingly similar for their sole children (Lu and Chang, 2013), resulting in more similar associations between parenting styles and parent-adolescent relationships and also the mediating effects of autonomy and authority for these relationships for boys and girls.

Limitations and Conclusions

Several limitations of this study should be noted. First, the participants were **urban adolescents in mainland China** which is characterized as **collectivist culture**, so generalizing the results to other cultures or groups should be done with caution. Second, the **correlational design does not permit causal inferences**. Longitudinal experimental data are necessary to identify causal relationships among the variables. Finally, we relied on adolescents' self-reports. Previous research found that there were discrepancies between parents' and youth's perceptions on these variables (e.g., Jensen and Dost-Gözkán, 2015), so our findings may not represent what would be found using parents' reports or observers' ratings.

Despite these limitations, the current study has important implications. To our knowledge, this is the first study to examine **the mediating effects of adolescents' expectations for behavioral autonomy and beliefs in the legitimacy of parental authority, on the links between parenting styles and parent-adolescent conflict and cohesion**. The findings of this study extend existing research and suggest that prevention and intervention efforts are needed to primarily target the reduction of non-authoritative parenting styles, and the promotion of acquiring appropriate levels of autonomy expectations and endorsement of parental authority. **Future research should examine other possible mediating paths and sample a wider range of cultural contexts to explore adolescent development and family functioning.**

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the Institutional Review Board

of Shandong Normal University. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the Institutional Review Board of Shandong Normal University.

AUTHOR CONTRIBUTIONS

XB conducted the analysis and drafted the manuscript. YY and HL helped in performing the statistical analysis. MW coordinated the data collection and helped in the statistical analysis. WZ conceived and coordinated the study and helped to draft the manuscript. KD-D helped to draft the manuscript. All authors read and approved the final manuscript and the byline order of authors.

FUNDING

This research was supported by the National Natural Science Foundation of China (31671156).

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2018.02187/full#supplementary-material>

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Negative Maternal and Paternal Parenting Styles as Predictors of Children's Behavioral Problems: Moderating Effects of the Child's Sex

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Published online: 13 December 2013
© Springer Science+Business Media New York 2013

Abstract Mothers and fathers often adopt different approaches to raising their children, and the influence of different parenting styles on the development of behavioral problems may be different for boys and girls. Using data from 89 subjects, 42 boys and 47 girls, with a mean age of 62.8 months ($SD = 3.3$), the current study tested the influence of early negative maternal and paternal parenting styles on the development of boys' and girls' aggressive and behavioral problems. Parents, when children aged 5–6, completed the Parenting Styles and Dimensions Questionnaire, and when children aged 8–9, the child behavior checklist. Children were evaluated for aggressive behavior with peers using the Direct and Indirect Aggression Scale at age 8–9. Our results show that an authoritarian maternal style is positively associated with both children's externalizing and internalizing problems while the combination of an authoritarian maternal style and a permissive paternal style was negatively associated with internalizing problems, but only in boys, and this type of family was

positively associated with both types of aggressive behavior in girls and boys. Besides, the combination of a permissive maternal style and a permissive paternal style was positively related to girls' (but not boys') physical aggression.

Keywords Maternal and paternal parenting style · Externalizing and internalizing problems · Aggressive behavior · Childhood · Child sex moderation

Introduction

Researchers are interested in early childhood behavioral problems because of their influence on social functioning across peer and school contexts (Keane and Calkins 2004; Wenar and Kerig 2000), their potential for hindering the development of a range of emotional, cognitive and social skills (Calkins et al. 2007; Nigg and Huang-Pollock 2003), and their costs in terms of human suffering and societal expenditures (Foster et al. 2006). Two broad sets of behavioral problems have been considered (Achenbach 1991, 1992): Those characterized by aggression, defiance and acting-out behaviors (externalizing problems), and those characterized by anxiety, withdrawal and depression (internalizing problems). Research has focused mostly on the impact of externalizing problems, probably because parents and teachers see children with these problems as disruptive and likely to follow a troubling trajectory into childhood and adolescence. Internalizing problems have received less attention, probably because they are less easily identified in young children; however early internalizing problems have considerable consequences for the development of children too (Gazelle and Ladd 2003; Mesman et al. 2001). Although both internalizing and

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externalizing problems tend to decline with age (Campbell 2002; NICHD Early Child Care Research Network & Arsenio 2004), when they persist in childhood these behaviors predict cascading patterns of maladjustment including peer rejection, conduct problems and antisocial behavior in adolescence (e.g., Broidy et al. 2003; Campbell et al. 2000; Lorber and Egeland 2009). Therefore, efforts need to be made to prevent both externalizing and internalizing problem behavior and to promote positive socio-emotional development, which in turn requires a deeper understanding of the factors that may give rise to these difficulties (Brumariu and Kerns 2010).

Several studies suggest that parenting plays a central role in understanding the development of internalizing and externalizing behavior (Cummings et al. 2000; Pereira et al. 2009). Parenting has been defined as the parents' attempts to control and socialize their children (Baumrind 1967). This author distinguished three types of parenting styles based on the interaction of two dimensions, *parental warmth* (which is related to parental involvement between children and parents) and *parental control* (referring to the role that parents play in promoting respect for rules and social conventions): Authoritative, authoritarian, and permissive. Authoritative parents are high on both warmth and firm control, authoritarian parents are high on firm control and low on warmth, and permissive parents are high on warmth and low on all types of control (Baumrind 1973). Later, Maccoby and Martin (1983) considered two dimensions: *Parental demandingness* (control, supervision, maturity demands) and *parental responsiveness* (warmth, acceptance, involvement). The interaction between the two dimensions produced four distinct parenting styles. A difference between Baumrind's and Maccoby and Martin's parenting style typologies is that these last authors distinguished between two types of permissive parenting (indulgent parents and neglecting parents). So, authoritative parents are characterized by high on both demandingness and responsiveness; authoritarian parents are characterized by high in demandingness but low in responsiveness; indulgent parents are characterized by low on demandingness but high on responsiveness; and neglecting parents are characterized by low on both demandingness and responsiveness. Nevertheless, neglected style has been observed infrequently in young children populations compared to the three other styles, but has mainly been reported in studies of adolescents (Baumrind 1991; Lamborn et al. 1991). So, in the child development literature, the Baumrind's (1973) early conceptualization of the parenting styles (authoritative, authoritarian, and permissive) continues to be widely employed in explaining individual differences in parenting rearing (Akhter et al. 2011; Baumrind et al. 2010; Parke 2002; Parke and Buriel 2006; Winsler et al. 2005; Rinaldi and Howe 2012).

One of the most robust findings reported in the literature on parenting styles and behavioral problems is that children from authoritative families were more resilient (Kritzas and Grobler 2005) and with better psychological competence (Lamborn et al. 1991). Regarding behavioral problems, whereas some authors reported evidence that authoritative parents are predictors of low level of behavioral problems (Steinberg et al. 2006; Steinberg et al. 1994), other authors did not find relationship between authoritative parenting style and internalizing and externalizing problems (Antolín et al. 2009; Akhter et al. 2011). Nevertheless, children and adolescents reared by authoritarian parents in different cultural contexts develop a wide range of internalizing and externalizing behavioral problems, i.e., anxiety, depressive symptoms, or aggression (Akhter et al. 2011; Alizadeh et al. 2011; Antolín et al. 2009; Erath et al. 2009; García Linares et al. 2011; Gershoff 2002; Heller et al. 1996; Leve et al. 2005; Odubote 2008; Pereira et al. 2009; Querido et al. 2002; Raya et al. 2009; Rinaldi and Howe 2012; Tur-Porcar et al. 2012; Wolfradt et al. 2003). Also other authors reported that in different cultural contexts the permissive parenting style is positively associated with children's externalizing and internalizing behavioral problems at childhood and adolescence (Akhter et al. 2011; Alizadeh et al. 2011; Antolín et al. 2009; García Linares et al. 2011; Jewell and Stark 2003; Raya et al. 2009; Sommer 2007; Tur-Porcar et al. 2012).

In spite of these results some studies, carried out with adolescents in southern Europe or South-America, using Maccoby and Martin's typology, have found no differences in the influence of authoritative and indulgent styles on children self-esteem or other aspects of self-satisfaction even suggesting that the indulgent promotes these aspects during adolescence rather than the authoritative (DiMaggio and Zappulla 2013; García and Gracia 2009; Martínez and García 2008; Musitu and García 2004; Rodrigues et al. 2013). Other researchers had already indicated that permissive parenting could have positive effects on self-esteem and autonomy but negative outcomes concerning drug use and abuse, deviant behavior and school misbehavior (i.e., Baumrind 1991; Herz and Gullone 1999; McCord 1988). Besides some studies show positive relations between authoritarian style and academic achievement among Asiatic cultures or Asian-American samples (Chao 1994, 2001; Steinberg et al. 1991). Therefore, considering that permissive and authoritarian parenting styles, using Baumrind's typology, are clearly and positively associated with internalizing and externalizing problems (Musitu and García 2004), we agree with Williams et al. (2009) that permissive and authoritarian styles could be named negative parenting styles.

Despite the amount of research that has been conducted on the influence of negative parenting styles (authoritarian

and permissive) on children's internalizing and externalizing problems, the extant literature has some limitations. One major limitation is that most studies include data from mothers only or assess the parenting style of mothers and assume that fathers act in the same way (Simons and Conger 2007), when currently fathers play an important role in children's development (Parke and Buriel 2006). Some authors have reported gender differences in parenting styles, and in specific terms, there is some indication that fathers tend to engage in parenting practices that are more consistent with an authoritarian style (Holmbeck et al. 1995; Russell et al. 1998; Russell et al. 2003). Regarding the effects of the paternal parenting style on children's behavioral problems, Jewell et al. (2008) found that fathers' permissiveness was related to the development of externalizing behaviors in children. According to Winsler et al. (2005) little information currently exists about the effects of fathers' parenting styles. In light of the trend over recent decades towards increased paternal involvement in children's lives, at least among two-parent families, the inclusion of fathers, separately from mothers, in parenting research is of particular concern. Another limitation of studies analyzing the effects of parenting styles on children is that they fail to consider the effects of each parent's style within the context of the other parent's style, missing the opportunity to detail the unique and combined contributions that both parents make to their children's development (Rinaldi and Howe 2012); for example, the effects of the mother's parenting style may be attenuated or exacerbated by the father's style, or vice versa. Thirdly, the majority of studies focusing on parenting styles and behavioral problems analyzed mixed samples and did not differentiate between boys and girls (Hoeve et al. 2011). However, a considerable amount of past research consistently suggests sex differences in internalizing versus externalizing problems (for a review, see Rose and Rudolph 2006). Girls experience more internalizing problems than boys, including low self-esteem, anxiety and depression, although the degree of these differences tends to increase from childhood to adolescence. In contrast, boys exhibit more externalizing problems than girls throughout both childhood and adolescence (Bongers et al. 2004).

As noted above, in early childhood behavioral problems predict difficulties in the further development of a range of cognitive and social emotional skills. Considering that in the literature the permissive and authoritarian parenting styles are the most clearly associated with behavioral problems, in this first exploratory study our aim will be to examine the contribution of these negative parenting styles, based on Baumrind's (1973) typology, during the first year of primary school to the development of behavioral problems in middle childhood.

Mainly our objective is to assess how mothers' and fathers' authoritarian and permissive parenting styles, independently and combined, contribute to children internalizing and externalizing problems of behavior. Besides, we will test whether the associations found between fathers' and mothers' negative parenting styles during the first years of primary school and the development of behavioral problems in middle childhood are different for boys and girls.

In sum, the present study addresses the following questions: (1) Are authoritarian and permissive maternal and paternal parenting styles associated with later children's internalizing and externalizing behavior? (2) Does each parent's negative style attenuate or accentuate the effects of the other parent's negative style on the development of children's internalizing and externalizing behavior? And (3) Do these associations differ for boys and girls?

Method

Participants

The data for the present study were collected from Spanish families. The sample consisted of 89 subjects, 42 boys and 47 girls, with a mean age at the beginning of the study of 62.8 months ($SD = 3.3$). The sample group was recruited through a cohort of kindergarten children from three state schools in Guipúzcoa and Cádiz. The study was explained to the directors, teachers and parents, and their written informed consent was requested. The socioeconomic status of the families was considered to be medium and medium-high, based on our knowledge of the area in which they live. Most (95.5 %) were two-parent families.

Procedure

During the first year of the study, when the children were 5 or 6 years old, the parents were asked to complete two questionnaires, one focused on the characteristics of individual family members and socioeconomic circumstances, and the other assessing parenting styles (Parenting Styles and Dimensions Questionnaire (PSDQ); Robinson et al. 1995, 2001). At age 8–9, in order to assess the children's behavioral problems, parents completed the Child Behavior Checklist (CBCL, Achenbach and Edelbrock 1986). Lastly, and also at age 8–9, aggressive behavior was also assessed using the Direct and Indirect Aggression Scale (DIAS, Björkqvist et al. 1992), a peer rating measurement instrument for aggressive behavior. The tests were administered by qualified, trained researchers in a room adjacent to the classroom in each of the schools.

Instruments

Parenting Styles and Dimensions Questionnaire (PSDQ)

Each parent received his or her own questionnaire packet directly from the school, and was asked to complete the survey independently. The instrument contains sixty-two statements regarding different parent reactions to child behavior. Items use a 5-point Likert scale ranging from never (1) to always (5). The purpose of this instrument is to measure parenting styles along Baumrind's continuum of typologies (1973; 1989): authoritative, authoritarian and permissive. The measure yields a separate, continuous score for each dimension of parenting with larger numbers indicating increased use of parenting practices associated with a particular style. For the purpose of the present study only the overall scales for authoritarianism and permissiveness were used in the analyses. The PSDQ was recently praised in a review of instruments assessing parenting practices (Locke and Prinz 2002) as one of the few available instruments with psychometrically defensible scales relating to parental nurturance and discipline. The reliability (Cronbach's α) obtained in our samples for authoritarian and permissive styles were .63 and .67 respectively.

Child Behavior Checklist (CBCL)

In order to assess internalizing and externalizing problems, the CBCL instrument was completed by parents for each participant. The test comprises 113 statements regarding diverse areas of the child's behavior, which parents must rate in accordance with how true they are (1 not true; 2 somewhat true; 3 very true) in relation to behavior linked to emotional problems the child may have experienced over the last 6 months. The test provides scores for internalizing and externalizing problems. The reliability (Cronbach's α) obtained in our sample was .60 for isolation; .37 for somatic complaints; .81 for anxiety/depression; .72 for social problems; .74 for thought problems; .81 for attention problems; .54 for delinquent behavior; .88 for aggressive behavior and .61 for other problems. As the most widely used assessment of children's social-emotional problems, this measure has demonstrated excellent psychometrics in standardization samples (Achenbach 1991). Internalizing and externalizing scores were transformed and then both were normally distributed (Shapiro test: externalizing, $W = .97, p = .06$; internalizing, $W = .99, p = .59$).

Direct and Indirect Aggression Scale (DIAS)

This peer-rating measurement instrument was used to assess different types of aggressive behavior at age 8–9. A number of different research studies endorse this test as a suitable

instrument for measuring aggressive behavior in children from a young age (Björkqvist et al. 2001; Valles and Knutson 2008). The DIAS is a test in which each child is asked to rate each of their same-sex classmates on a Likert scale (0–4) for behavior linked to physical aggression (7 items) and indirect aggression (12 items). These two subscales were reliable for this sample: Cronbach's α were .96 and .83, respectively. Aggressive behavior scores were transformed and then both were normally distributed (Shapiro test: physical aggression, $W = .99, p = .92$; indirect aggression, $W = .99, p = .99$).

Statistical Analysis

In order to analyze sex differences in relation to the different variables proposed, a one-way ANOVA was conducted. The relationships between the different variables considered in the study were examined using a Pearson correlation coefficient. A generalized linear model (GLM) was performed in order to analyze the influence of mothers and fathers' negative parenting styles, as well as the influence of all possible combinations of these styles, on the development of children's behavioral problems and aggressive behavior, including interactions of the combined parenting styles with the sex of the child.

Results

One-way ANOVAs revealed significant sex differences only for the two types of aggression (physical, and indirect), with boys being more aggressive than girls [$F(1, 89) = 23.43, p < .0001$, for physical aggression; $F(1, 89) = 9.73, p < .0025$, for indirect aggression].

A summary of correlations between the study variables is provided in Table 1. For both girls and boys, externalizing problems were found to be positively related to internalizing problems, and physical aggression was found to be positively related to indirect aggression. Only for boys, externalizing problems were positively related to both types of aggressive behavior; and only for girls, authoritarian paternal style was associated with physical aggression, authoritarian maternal style was positively related to externalizing problems, and the combination of authoritarian maternal and paternal styles, as well as permissive maternal style and permissive paternal style were positively inter-correlated.

As can be seen in Table 2, an authoritarian maternal style was positively associated with children's internalizing problems.

The effect of the interaction "authoritarian maternal style X permissive paternal style X child's sex" on children's internalizing problems was statistically significant (Fig. 1): Although the relationship between this type of family and girls' internalizing problems was not statistically significant

Table 1 Correlations between study variables in girls (bold) and boys (italic)

Variables	1	2	3	4	5	6	7	8
1 Authoritarian maternal		.33	.47*	.35	.39	.64**	.42	.41
2 Permissive maternal	.24		.26	.56**	.25	.31	.37	.36
3 Authoritarian paternal	.33	.35		.31	-.02	.25	.50**	.38
4 Permissive paternal	.20	.25	.40		.27	.31	.08	.12
5 Internalizing problems	.15	-.06	-.05	.06		.53**	.04	.15
6 Externalizing problems	.19	.13	.19	.15	.76**		.43	.46
7 Physical aggression	.07	.15	.11	.28	.26	.58*		.83**
8 Indirect aggression	.06	.15	.03	.24	.23	.59*	.92**	

* $p < .05$; ** $p < .01$, after applying the Bonferroni correction

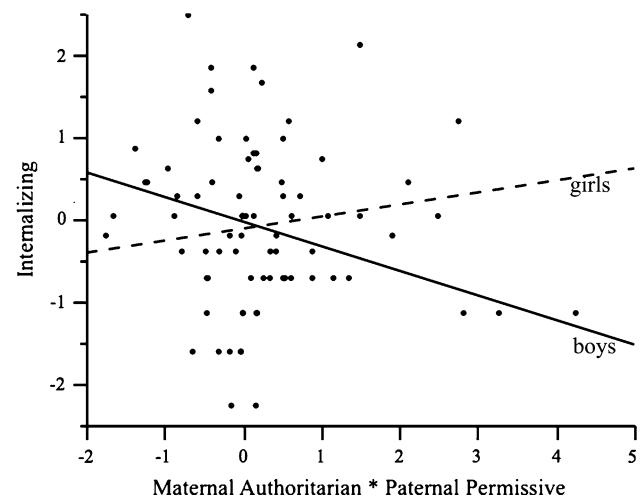
Table 2 GLM for parent-reported behavioral problems

	Internalizing		Externalizing	
	estimate	SE	estimate	SE
Child's sex	-.03	.12	-.11	.12
Authoritarian mother	.28 *	.12	.33**	.12
Permissive mother	-.02	.12	.07	.12
Authoritarian father	-.19	.14	.04	.14
Permissive father	.21	.11	.15	.12
Authoritarian mother × authoritarian father	.09	.14	-.29*	.15
Authoritarian mother × permissive father	-.16	.13	.07	.13
Permissive mother × authoritarian father	-.16	.15	.08	.16
Permissive mother × permissive father	.17	.13	.10	.13
Authoritarian mother × authoritarian father × child's sex	.10	.16	-.16	.17
Authoritarian mother × permissive father × child's sex	-.31*	.14	-.16	.14
Permissive mother × authoritarian father × child's sex	-.04	.16	.19	.16
Permissive mother × permissive father × child's sex	.16	.13	.07	.13
R ²	16.11		22.60*	

* $p < .05$; ** $p < .01$

[*Chi Square* (1.46) = .95, *Estimate* = .14, *SE* = .15, p = .3295], for boys, the combination of an authoritarian maternal style and a permissive paternal style was negatively related to internalizing problems [*Chi Square* (1.33) = 4.19, *Estimate* = -.29, *SE* = .14, p = .0407].

As can be seen also in Table 2, an authoritarian maternal style was positively associated with children's externalizing problems, whereas a negative relationship was found between the combination of an authoritarian maternal style and an authoritarian paternal style and children's externalizing problems.

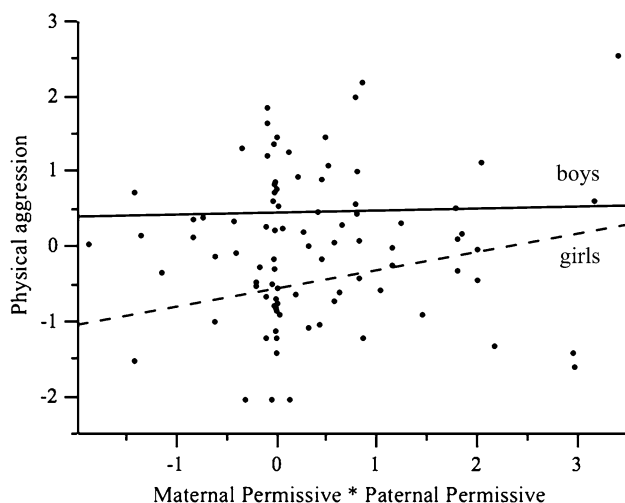
**Fig. 1** Sex child as a moderator of the relation between parental styles and internalizing behavior

As can be seen in Table 3, the combination of an authoritarian maternal style and a permissive paternal style was positively related to children's physical aggression. Moreover, the interaction "permissive maternal style X permissive paternal style X child's sex" was also statistically significant (Fig. 2): Although the relationship between this type of family and boys' physical aggression was not statistically significant [*Chi Square* (1.42) = .04, *Estimate* = .03, *SE* = .13, p = .8361], for girls, a tendential positive relationship was observed between the combination of a permissive maternal style and a permissive paternal style and physical aggression [*Chi Square* (1.47) = 3.26, *Estimate* = .24, *SE* = .13, p = .0711].

As can be seen also in Table 3, the combination of an authoritarian maternal style and an authoritarian paternal style was negatively related to children's indirect aggression. However, the combination of an authoritarian maternal style with a permissive paternal style was positively related to children's indirect aggression.

Table 3 GLM for peer-reported aggressive behavior

	Physical aggr. estimate SE	Indirect aggr. estimate SE
Child's sex	.44*** .09	.29** .10
Authoritarian mother	.07 .09	.10 .10
Permissive mother	.16 .09	.19 .10
Authoritarian father	.13 .11	.00 .12
Permissive father	.00 .09	.04 .10
Authoritarian mother × authoritarian father	−.21 .11	−.29* .12
Authoritarian mother × permissive father	.35** .11	.44*** .12
Permissive mother × authoritarian father	.02 .10	.03 .10
Permissive mother × permissive father	−.07 .11	−.13 .11
Authoritarian mother × authoritarian father × child's sex	−.05 .12	−.05 .13
Authoritarian mother × permissive father × child's sex	.12 .11	.08 .12
Permissive mother × authoritarian father × child's sex	.17 .10	.21 .10
Permissive mother × permissive father × child's sex	−.22* .11	−.21 .11
R ²	35.71***	27.67***

* $p < .05$; ** $p < .01$; *** $p < .001$ **Fig. 2** Sex child as a moderator of the relation between parental styles and physical aggression

Discussion

The purpose of this study was to examine the associations between the mothers' and fathers' negative parenting styles and children's internalizing and externalizing problems, as

assessed by parents, as well as their influence on children's peer-reported aggressive behavior. This objective was accomplished by considering the moderator effects of the child's sex in a sample of 5- to 9-year-olds.

Our results show that: (1) An authoritarian maternal style is positively associated with both children's externalizing and internalizing problems; (2) the combination of an authoritarian maternal style and an authoritarian paternal style is negatively related to both children's externalizing problems and indirect aggressive behavior; (3) the combination of an authoritarian maternal style and a permissive paternal style is negatively related to internalizing problems in boys, but this type of family is positively associated with both types of aggressive behavior in girls and boys; and (4) the combination of a permissive maternal style and a permissive paternal style is positively related only to girls' physical aggression.

Most research into the associations between parenting and children's development has focused on mothers, because traditionally it has been assumed that fathers typically take little responsibility for their children's care and rearing and are considered only as primarily helpers to the mother. On average, mothers spend more time than fathers engaging in direct interactions with their young children and most researchers agree that mothers normally play a more central role than fathers in children's development (for a review, see Bornstein 2006). Nevertheless, the present study considered the effects of negative maternal and paternal parenting styles separately and simultaneously, as well as the possible combinations of these styles on children's aggressive and behavioral problems. Even so, our results highlight the strong influence of the mother's parenting style on child development. In fact, only maternal parenting styles had any main effects on children's aggressive and behavioral problems, after controlling for fathering, with paternal parenting styles having only moderating effects on the relationship between the mother's parenting style and the child's risk of behavioral problems.

In the study sample, the mother's authoritarian style, after controlling for fathering, was found to influence the emergence of behavioral problems (internalizing and externalizing) in both girls and boys; whereas the father's parenting style was found only to moderate this effect. Thus, the authoritarian paternal style attenuates the effect of the authoritarian maternal style in children's externalizing behaviors, while the permissive paternal style lessens the influence of the authoritarian maternal style on children's internalizing problems, but only for boys. Several authors (Baumrind 1993; Deater-Deckard and Dodge 1997; Deater-Deckard et al. 1998; Gilliom and Shaw 2004; Joo-son et al. 2012) have shown that the parenting practice that most frequently predicts children's behavioral problems is harsh discipline. Furthermore, other authors (Miner and

Clarke-Stewart 2008; Wang et al. 2013) have found that, specifically, harsh discipline by the mother is significantly related to the frequency of children's externalizing behavior. In a family in which the mother adopts an authoritarian style, the prevailing patterns of behavior are characterized by a high level of perceived hostility, punishment, restrictiveness and intrusiveness. In the current study, in addition to influencing the development of externalizing behavioral problems, these patterns of maternal behavior were found to contribute to the onset of internalizing behaviors. Crawford et al. (2011) have also suggested an association between hostile maternal parenting and children's internalizing disorders.

Nevertheless, in a family in which an authoritarian maternal style is combined with a permissive paternal style, the father may demonstrate affection and responsiveness towards the child, providing them with a certain level of emotional support, which has been associated with low levels of behavioral problems (Pereira et al. 2009). This could explain why, in the results of the present study, the combination of authoritarian maternal style and permissive paternal style was negatively related to (at least) internalizing behavior, although only for boys. It is likely that the emotional support provided by the components of a permissive paternal style would strengthen boys' self-esteem and self-confidence, thus removing the problems of anxiety, fears, etc., which are characteristic of internalizing problems. Due to the closer relationships that are often established between fathers and sons (Snyder 1998), the emotional support that characterizes the permissive paternal style may attenuate the influence of harsh maternal discipline on the development of internalizing behavior mainly in boys. As Simons and Congers (2007) suggest, responsiveness might be bestowed by one parent and structure and control by the other, and a permissive-authoritarian combination could thus resemble the consequences of an authoritative family. **Future studies could consider in larger samples of individuals the possible moderating effects of the authoritative parenting in the contribution of negative parenting styles on the development of children behavioral problems.**

This combination of parenting styles (authoritarian mother and permissive father) increases both physical and indirect aggression in both girls and boys, probably because neither parent fosters the development of self-regulation skills and self-control in their child's behavior. A permissive father may not have the ability to offer a sufficient level of behavioral control to stop their child's aggressive behavior. Hence, children who experience permissiveness may fail to develop sufficient inhibitory/self-regulatory skills, which are developmentally crucial for keeping aggressive behavior in check. Moreover, authoritarian mothers hold only external control, since they

do not use induction as a means of explaining their demands; thus, their parenting style does not favor the development of children's ability to regulate their own behavior when the mother is not present (for a review see Kawabata et al. 2011).

On the other hand, it is surprising that although the authoritarian maternal style was positively associated with externalizing behaviors in children, the combination of an authoritarian maternal style and an authoritarian paternal style was negatively associated with both children's externalizing problems and indirect aggressive behavior. There are at least two possible explanations for this unexpected result. The first is that the father's display of harsh control may restrict the mother's expression of control over the child, and as stated earlier, it is the authoritarian maternal style that contributes most to the development of children's behavioral problems. The second explanation is that when both the mother and the father adopt an authoritarian style, the child is exposed to a very high level of control without affection, a situation which some authors have related to a low level of externalizing problems (e.g., Barber 1996).

Lastly, the combination of a permissive maternal style and a permissive paternal style appears to contribute to the development of physically aggressive behavior. Children with permissive parents may not fully develop the ability to control their negative emotions due to the fact that their parents fail to monitor their behavior. Consequently, these children are unable to control their aggressive impulses and as a result, exhibit high levels of aggressive behavior when angry (Rubin et al. 1995). In our results, the influence of permissive parenting on children's physical aggression was significant only for girls. Also, and again only for girls, a permissive family tends to increase indirect aggression. This last association has been observed also by other authors at various developmental ages including preschool age (e.g., Casas et al. 2006), school age (e.g., Sandstrom 2007; Vaillancourt et al. 2007), and adolescence (e.g., Stocker et al. 2002). In turn, Hovee et al. (2011) found that permissive parenting was linked to adolescent delinquency only in girls.

This study supports the associations found by previous research between negative parenting and children's aggressive and behavioral problems (for a review, see Paulussen-Hoogeboom et al. 2007), besides this study extends the literature by considering the effects of negative maternal and paternal parenting styles separately, simultaneously, as well as the possible combinations of these styles. Furthermore, our results highlight the importance of considering the sex of the child him or herself when seeking to understand the influence of negative parenting styles on children's adjustment problems. This study also extends the literature by using different measures of

behavioral problems (i.e., internalizing and externalizing, and two types of aggressive behavior) derived from multiple informants (i.e., peers, parents).

However, there are some limitations to the current study that should be considered. Firstly, the parental styles considered do not capture the entire complexity of a child's experience of parenting; given the differences observed in the effects of the separate maternal and paternal styles, it would be interesting for future studies to include other negative styles (such as neglected), as well as those with beneficial effects (such as authoritative), in order to see if there are any interactions indicating possible moderating effects of an authoritative father or mother when combined with a partner who adopts a negative parenting style. Secondly, in addition to the use of a multi-reporter method to obtain the data, as in the present study, observational methodology could further enrich the data collected. Future studies could also analyze a possible moderating role of various cognitive and emotional skills in the influence of parenting style on children's behavioral problems. It would also be interesting to study the underlying mechanisms by which negative parenting differentially affect boys and girls.

Acknowledgments This study was supported by the Ministry of Science and Innovation (PSI2008-02958/PSIC; SEJ2007-62897), and funding provided by the Andalusian Regional Government's *Plan Andaluz de Investigación* (PAI-2003/04, HUM-554) and by the Basque Country Government (GIC07/19-IT-238-07). We would like to express our gratitude to the teaching staff, parents and children of the participating schools; and to Ainhoa García, Aizpea Sorozabal and Iñaki Verdier for helping us to collect the data. We thank Enrique Collado for his help in the data analysis.

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Longitudinal Relations Among Parenting Styles, Prosocial Behaviors, and Academic Outcomes in U.S. Mexican Adolescents

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This article examined parenting styles and prosocial behaviors as longitudinal predictors of academic outcomes in U.S. Mexican youth. Adolescents ($N = 462$; Wave 1 $M_{\text{age}} = 10.4$ years; 48.1% girls), parents, and teachers completed parenting, prosocial behavior, and academic outcome measures at 5th, 10th, and 12th grades. *Authoritative* parents were more likely to have youth who exhibited high levels of prosocial behaviors than those who were *moderately demanding* and *less involved*. Fathers and mothers who were *less involved* and mothers who were *moderately demanding* were less likely than *authoritative* parents to have youth who exhibited high levels of prosocial behaviors. Prosocial behaviors were positively associated with academic outcomes. Discussion focuses on parenting, prosocial behaviors, and academic attitudes in understanding youth academic performance.

Disparities in academic outcomes among ethnic and racial groups in the United States remain an important concern (Aud et al., 2013; Gándara & Contreras, 2009). Latino/a children and adolescents across the United States, for example, demonstrate disproportionately high school dropout rates, low academic performance and achievement scores, and low percentages of enrollment in colleges and universities (Martinez, DeGarmo, & Eddy, 2004). Given the relatively large representation and continued rapid growth of Latino/as in the United States, research that focuses on predictors of academic outcomes for Latino/a youth is of great importance (American Psychological Association Presidential Task Force on Educational Disparities, 2012). Of particular interest is *research that focuses on predictors of academic success* to develop effective

intervention programs that may foster positive academic outcomes among this population. The present study was designed to examine parenting styles and prosocial behaviors as longitudinal predictors of academic outcomes in a sample of U.S. Mexican youth.

Predominant parenting style frameworks generally characterize parents as *authoritative, authoritarian, indulgent, or neglectful* according to two major dimensions of parenting: responsiveness and demandingness (Baumrind, 1991; Maccoby & Martin, 1983). *Responsiveness* refers to affections and *attentiveness* to children's developmental needs, and responsive parents are accepting (regular displays of warmth and support toward children) and nonpunitive (avoid harsh parenting characterized by punitive or demeaning behaviors; Simons & Conger, 2007). *Demandingness* refers to control, expectations for child behavior, and implementation and enforcement of clear standards and rules (Domenech Rodríguez, Donovan, & Crowley, 2009).

This research was supported, in part, by NIMH Grant MH68920 (Culture, Context, and Mexican American Mental Health). The authors are thankful for the support of Nancy Gonzales, Mark Roosa, Jenn-Yun Tein, Marisela Torres, Adriana Umana-Taylor, Jaimee Virgo, our Community Advisory Board and interviewers, and the families who participated in the study.

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DOI: 10.1111/cdev.12761

via monitoring and consistent discipline (Simons & Conger, 2007). Authoritative parents are high on responsiveness and demandingness. Authoritarian parents are low on responsiveness and high on demandingness. Indulgent parents are high on responsiveness and low on demandingness. Neglectful parents are low on both dimensions.

Researchers have devoted much attention to the role of parenting in predicting academic outcomes in youth (Dumka, Gonzales, Bonds, & Millsap, 2009; Martinez et al., 2004). Conceptually, authoritative parenting is deemed to facilitate positive academic outcomes because youth may feel motivated because their parents are high on demandingness and also high on responsiveness. In contrast, youth of authoritarian parents may feel unsupported and less motivated to engage academically because their parents' high demandingness occurs in the relative absence of responsiveness. Empirical studies are generally consistent with these expectations. Generally, relatively high levels of responsiveness and demandingness positively predict high levels of academic outcomes in children and youth (Maccoby & Martin, 1983; Steinberg, Dornbusch, & Brown, 1992). In contrast, authoritarian parenting is associated with lower academic achievement. Although relatively fewer studies exist that focus on Latino/a youth, findings from those studies are also generally consistent with these expectations (e.g., Henry, Merten, Plunkett, & Sands, 2008).

Parenting styles have also been linked to youth prosocial behaviors. Moral socialization theorists postulate that parenting high on responsiveness and demandingness (i.e., authoritative) facilitates an orientation toward the needs of others and is associated with good self-regulation skills, moral values, sympathy, and moral reasoning (Eisenberg, Fabes, & Spinrad, 2006; Grusec & Sherman, 2011), presumably because such parenting provides models for good self-regulation and prosocial actions, provides sensitivity to prosocial and moral values (including the consideration of and respect for others), and fosters responsivity to others' needs. Furthermore, parents who exhibit relatively high levels of demandingness alongside lower responsiveness (i.e., authoritarian) foster a focus on the self rather than on others and often model emotional and behavioral dysregulation, thereby mitigating prosociality and fostering negative outcomes in children and youth (Barber, Stolz, & Olsen, 2005; Grusec, Chaparro, Johnston, & Sherman, 2014). Supportive empirical evidence on these expected relations among European American samples is relatively

substantive, whereas research on these links in U.S. Latino youth is sparse (Eisenberg & Valiente, 2002).

Although most findings yield supportive evidence on the expected negative links between high demandingness combined with lower responsiveness on youth outcomes, there are some notable exceptions to those findings among ethnic minority families. In U.S. Latino families, some researchers report expected negative relations between authoritarian parenting and positive adolescent outcomes, whereas other investigators demonstrate no significant relations between such parenting and outcomes (Domenech Rodríguez et al., 2009). Other research identifies unexpected associations between harsh parenting, demandingness, and Latino youth outcomes (see Halgunseth, Ispa, & Rudy, 2006 for a review), perhaps because scholars are failing to consider these behaviors and dimensions vis-à-vis other aspects of responsiveness (e.g., high acceptance) and demandingness (White, Liu, Gonzales, Knight, & Tein, 2016; White, Liu, Nair, & Tein, 2015). Overall, mixed findings may be interpreted within recent works suggesting that the predominant frameworks may not capture the full range of parenting styles employed by parents of adolescents from diverse groups (Domenech Rodríguez et al., 2009; Kim, Wang, Shen, & Hou, 2015; White et al., 2016). In response to these observations, it is necessary to conduct parenting research that allows ethnic minority parents to vary within and across the predominant parenting dimensions, which were originally derived from research focused predominantly on European American parents. Recent work highlights the utility of using person-centered analytic techniques to capture the range of parenting styles employed by diverse parents (see Kim et al. 2015). These techniques are useful because, unlike variable-centered techniques, they do not force parents into one of the four predominant styles and because they do not rely on sample-based cutoffs to establish the magnitude of demandingness and responsiveness (White, Zeiders, Gonzales, Tein, & Roosa, 2013). For example, using person-centered approaches, researchers found that some Mexican- and Asian-origin parents may combine warmth with elevated harshness and high demandingness (Kim et al., 2015; White et al., 2013), perhaps to offset the potential disadvantages associated with disproportionate exposure to adverse neighborhood environments or ethnic discrimination (White et al., 2016). This combination, often called no-nonsense parenting (Brody & Flor, 1998; White et al., 2013), represents a culturally situated combination of behaviors (García Coll et al., 1996) that deviates

from predominant views of responsiveness and, consequently, both authoritative and authoritarian parenting styles. Furthermore, some scholars have suggested that these techniques create normative expectations that may mitigate negative youth consequences (García Coll et al., 1996; Guerra & Williams, 2005; see also Chao & Otsuki-Clutter, 2011). In a recent study using a person-centered approach among U.S. Mexican parents, White et al. (2013) presented evidence that some U.S. Mexican mothers and fathers demonstrated a pattern of practices consistent with an *authoritative* style (i.e., high levels of warmth and low levels of harshness combined with high consistency and monitoring) and a *less involved* style (i.e., lower levels of warmth, harshness, consistency, and monitoring). Furthermore, other U.S. Mexican mothers (but not fathers) showed a *moderately demanding* style (i.e., high levels of warmth and low levels of harshness with moderate consistency and monitoring), whereas some U.S. Mexican fathers (but not mothers) employed a *no-nonsense* parenting style (i.e., high levels of warmth and elevated harshness, combined with high consistency and monitoring) not frequently reported in other studies on parenting styles (cf. Kim, Wang, Orozco-Lapray, Shen, & Murtuza, 2013, in Asian American families). Therefore, rather than assume that the traditional parenting style frameworks adequately capture the full range of parenting styles employed by U.S. Mexican parents, in the present study, we adopted this person-centered parenting styles typology (previously reported in White et al., 2013; see Figure S1) with the present sample of U.S. Mexican-origin families.

Scholars have also asserted that youth who frequently exhibit prosocial behaviors (i.e., actions intended to benefit others) often exhibit better academic outcomes (Bergin, 2014; Carlo, 2014). There are various mechanisms that have been proposed as possible explanations. One possibility is that youth who frequently engage in prosocial behaviors may be more apt to acquire greater general self-confidence and motivation, which in turn may predict better academic performance (Caprara et al., 2014). Others suggest that prosocial youth may be more attracted to peers who demonstrate similar high levels of prosociality, may be liked by teachers and staff, and may also be more involved in school-related academic activities and clubs (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Carlo, Crockett, Wilkinson, & Beal, 2011). Compatible with both of these possible explanations, prosocial youth may show positive academic outcomes as a result of intrapersonal characteristics, such as good self-

regulation tendencies and social cognitions (e.g., perspective taking, reasoning skills) that may facilitate academic performance (Caprara et al., 2014; Wentzel, 2006). Taken together, these prosocial-oriented actions may result in higher school engagement, positive interactions with teachers and peers, and subsequently higher academic motivation and performance.

There is a growing body of research that generally demonstrates positive associations between prosocial behaviors and academic outcomes among youth (Eccles & Barber, 1999; Miles & Stipek, 2006). For example, Caprara, Barbaranelli, Pastorelli, Bandura, and Zimbardo (2000) showed relatively strong positive relations between earlier prosocial behaviors (but not aggression) and academic performance 5 years later. Recently, an intervention program designed to foster prosocial behaviors among young adolescents yielded supportive evidence that the intervention improved academic grades (Caprara et al., 2014). Although we know of no direct study on prosocial behaviors and academic efficacy, prosocial behaviors have also been linked to greater self-esteem (Zuffianò et al., 2014). However, the findings of one study of U.S. Mexicans suggested that days spent helping around the home was linked to lower grade point average (Telzer & Fuligni, 2009a). Given the sparse research on these links in Latino/a youth, one purpose of the present study was to address this gap.

Based on prior theory that identifies different forms of prosocial behaviors (Carlo, 2014), we examine the links between *dire* (i.e., helping in emergency situations), *emotional* (i.e., helping in emotionally evocative situations), and *compliant* (i.e., helping when asked) prosocial behaviors and academic outcomes in U.S. Mexican youth. These three forms of prosocial behaviors are commonly exhibited by U.S. Mexican adolescents and are conceptually linked to traditional Mexican culture (Calderón, Knight, & Carlo, 2011; Carlo, 2014); therefore, assessment of these three forms of prosocial behaviors represents a reasonable range of exhibited forms of prosocial behaviors. In addition, research on the intervening mechanisms that may explain the links between prosocial behaviors and academic outcomes is lacking. We examined one potential mediating mechanism, namely academic self-efficacy, in the relations between prosocial behaviors and academic performance.

Based primarily on social cognitive theory (Bandura, 1986), self-efficacy (i.e., confidence in one's abilities) has been conceptually linked to a variety of positive social developmental outcomes. Perhaps

the most researched link is between academic self-efficacy (i.e., confidence in one's academic abilities) and academic achievement. According to theorists, greater academic self-efficacy can foster better academic performance and achievement via a stronger motivation to pursue and accomplish academic objectives (Multon, Brown, & Lent, 1991; Usher & Pajares, 2008). Although less studied, prosocial behaviors have similarly been conceptually linked to self-efficacy. Theorists have speculated that frequent engagement in prosocial behaviors enhances one's confidence across a range of social domains, including the academic domain (Caprara et al., 2014; Gresham, Vance, & Chenier, 2013). Specifically, prosocial actions induce positive emotions, feelings of greater self-worth, and confidence in pursuing and accomplishing future objectives as a result of the associated rewarding mechanisms (Carlo, 2014; Carlo & Randall, 2001; Telzer & Fuligni, 2009b). Therefore, we expected that the link between prosocial behaviors and academic achievement would be accounted for by individual differences in academic self-efficacy beliefs.

Despite the conceptual assertions, there are few studies that link academic self-efficacy beliefs to prosocial behaviors, but the evidence is supportive (Bandura et al., 1996; Eklund, Loeb, Hansen, & Andersson-Wallin, 2012). Other research has examined prosocial behaviors and empathic (i.e., beliefs in one's capacity to empathize with others) and affective (i.e., confidence in one's ability to manage one's emotions) self-efficacy beliefs (Alessandri, Caprara, Eisenberg, & Steca, 2009; Caprara & Steca, 2005). These studies also demonstrate evidence that prosocial behaviors predict subsequent self-efficacy beliefs and vice versa (e.g., Alessandri et al., 2009; Caprara & Steca, 2005). However, to our knowledge, there are no published studies on the relations between prosocial behaviors and academic self-efficacy beliefs in a U.S. Latino/a sample.

As noted earlier, there is relatively consistent support for the links between academic self-efficacy beliefs and academic achievement (Bandura et al., 1996; Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Meece, Wigfield, & Eccles, 1990; see Schunk & Pajares, 2002). Furthermore, support for such relations have been reported in U.S. Latino samples (e.g., Buriel, Perez, Terri, Chavez, & Moran, 1998; Chun & Dickson, 2011; Niehaus, Rudasill, & Rakes, 2012). Taken together, these findings suggest that academic self-efficacy beliefs may account for the relations between prosocial behaviors and academic achievement.

To summarize, the present study was designed to examine the longitudinal relations among paternal and maternal parenting styles, prosocial behaviors, academic self-efficacy beliefs, and academic achievement in a sample of U.S. Mexican youth. We used the previously identified styles of parenting (see descriptions earlier) with the present sample of U.S. Mexican mothers and fathers (White et al., 2013): mothers with an *authoritative* style, a *less involved* style, or a *moderately demanding* style; and fathers with an *authoritative* style, a *less involved* style, or a *no-nonsense* parenting style. For both fathers and mothers, we hypothesized that *authoritative* parenting styles would be positively related, and *less involved* parenting styles would be negatively related, to prosocial behaviors. However, given the lack of prior evidence on the links between both *no-nonsense* parenting style (for fathers) and *moderately demanding* style (for mothers) and U.S. Mexican youth prosocial behaviors, there were no a priori hypotheses on these links. Prosocial behaviors were expected to be positively related to academic self-efficacy beliefs and academic achievement. Moreover, prosocial behaviors were expected to mediate the relations between parenting styles and academic outcomes, and prosocial behaviors were expected to indirectly predict academic achievement via academic self-efficacy beliefs.

Method

Participants

Data for the current study come from a larger longitudinal project focused on cultural and contextual factors in the lives of Mexican-origin adolescents and their families living in the United States (Roosa et al., 2008). Families ($N = 749$) were recruited from schools that served ethnically and linguistically diverse communities in a metropolitan area of the U.S. Southwest. Eligible families met the following criteria: (a) there was a fifth-grade youth who attended a sampled school, was not severely learning disabled, and was the biological child of a Mexican-origin mother and Mexican-origin father; (b) the Mexican-origin biological mother lived with the youth; and (c) no stepfather figure was living in the household. Of the 749 families, 570 families were characterized as two-parent, father-present households; the remaining 179 families were characterized as single-parent, female-headed households.

A detailed description of study procedures is published elsewhere (Roosa et al., 2008); we briefly

summarize here. Starting in 2004, eligible families participated in four waves of data collection: Wave 1 (W1), when adolescents were in 5th grade; Wave 2 (W2), when adolescents were in 7th grade; Wave 3 (W3), when adolescents were in 10th grade; and Wave 4 (W4), when adolescents were in the 12th grade. At each wave, family members were interviewed in their home using a computer-assisted personal interview and were each paid \$45, \$50, \$55, and \$60 for participation at W1, W2, W3, and W4, respectively. Interviews were conducted in the participants' language of choice (i.e., English or Spanish). The study also collected data from adolescents' teachers. At W1 and W2, questionnaires were sent (via mail) to the adolescents' primary teachers (as identified by the adolescent) and at W3 and W4, questionnaires were sent (via mail) to the adolescents' English and Math teachers. The questionnaire inquired about the prior 4 weeks of classroom behavior and academic performance for each individual student. Teachers were paid for each completed questionnaire: \$10 at W1, \$10 at W2, \$10 at W3, and \$10 at W4.

The current study focused on the subset of the larger sample—462 two-parent families in which the adolescent (M_{age} at W1 = 10.4 years, $SD = .55$; 48.1% girls), mother, and father reported on parenting behaviors at W1. We utilize families' data from W1, W3, or W4, as variables of interest in the current model were not assessed at W2. A majority of youth in the current study were born in the United States (66.9%) and completed W1 interview in English (81.8%). A majority of mothers (78.6%) and fathers (79.7%) were born in Mexico and completed W1 interview in Spanish (72.7%, 76.6%, respectively). On a scale of 1 (\$0,000–\$5,000) to 20 (\$95,001+), average W1 annual family income was 7.97, with 7 representing \$30,001–\$35,000 and 8 representing \$35,001–\$40,000.

Measures

Parenting Styles (W1)

Consistent with prior approaches to operationalizing responsive and demanding parenting dimensions (Simons & Conger, 2007), adolescents' fifth-grade reports of parenting were previously used to identify parenting styles based on the dimensions of parental responsiveness (i.e., high acceptance and low harshness) and demandingness (i.e., high consistent discipline, and monitoring) from a person-centered analysis (White et al., 2013). Specifically, latent profile analyses were conducted

using adolescents' reports of mothers' and fathers' acceptance (eight items, "Your father understood your problems and worries"), harsh parenting (eight items, "Your father spanked or slapped you when you did something wrong"; "Your father got so mad at you that he called you names"), consistent discipline (eight items, "When you broke a rule, your father made sure you received the punishment he said you would get"), and monitoring (eight items, "Your father knew who your friends were"). Acceptance, harsh parenting, and consistent discipline were assessed using The Child Report of Parental Behavior Inventory (CRPBI; Schaefer, 1965); monitoring was assessed using Small and Kerns (1993) scale. These measures have demonstrated cross-cultural and cross-language measurement equivalence (Knight, Tein, Shell, & Roosa, 1992; Knight, Virdin, & Roosa, 1994; Nair, White, Knight, & Roosa, 2009). Across all items, adolescents responded using a 5-point Likert scale ranging from 1 (*almost never or never*) to 5 (*almost always or always*). In the current study, alphas for the four parenting scales ranged from .72 to .88.

The latent profile analyses, based on optimal fit and interpretability, yielded the three-profile solution on youths' reports of both mothers' and fathers' parenting (reported in detail elsewhere, see White et al., 2013). The solutions for both mothers' and fathers' parenting produced an *authoritative* profile, wherein each parent was high on acceptance and low harsh parenting, and high on monitoring and consistent discipline (70.1% of mothers and 70.7% of fathers). The solution also produced a *less involved* profile (5.1% of mothers and 17.0% of fathers) that mirrored the *authoritative* profile but with somewhat reduced levels of acceptance, consistent discipline, and monitoring. The solution for mothers' parenting produced a *moderately demanding* profile (24.8% of mothers), wherein mothers were high on acceptance and low on harshness, with moderate levels on monitoring and consistent discipline. The solution for fathers' parenting produced a *no-nonsense* style (12.3% of fathers), wherein fathers had levels of acceptance, consistent discipline, and monitoring that were comparable to *authoritative* parents, but they also had elevated levels of paternal harshness. The mean on harsh parenting in the *no-nonsense* group corresponded to using harsh parenting *sometimes*, whereas the means on harsh parenting in both the *authoritative* and *less involved* groups corresponded to using harsh parenting *once in a while*.

Prosocial Behaviors (W3)

Adolescents' reported their prosocial behaviors using the Prosocial Tendencies Measure (Carlo & Randall, 2002) in the 10th grade. The measure is designed to assess a range of commonly exhibited forms of prosocial behaviors that have been linked to U.S. Mexican-origin adolescents (see Calderón et al., 2011): *dire* (three items, "You tend to help people who are in a real crises or need"), *compliant* (two items, "You never wait to help others when they ask for it"), and *emotional* (five items, "You tend to help others especially when they are really emotional"). Adolescents responded to the items using a 5-point Likert scale ranging from 1 (*does not describe me at all*) to 5 (*describes me greatly*). In the current study, alphas for *dire*, *compliant*, and *emotional* behaviors were .78, .67, and .86, respectively. To reduce the number of variables, a latent factor of prosocial behaviors was constructed, with emotional, *dire*, and compliant prosocial behaviors included as indicators of common forms of prosocial behaviors to reduce the number of variables (as in Calderón et al., 2011). All indicators loaded significantly onto the latent factor. Standardized estimates ranged from .68 to .91.

Academic Self-Efficacy (W4)

Adolescents' reported their academic self-efficacy in the 12th grade using an adapted six-item scale (Midgley, Maehr, & Urdan, 1996). The scale assesses students' beliefs that they can master the work given to them in school. Items (e.g., "You can do even the hardest schoolwork if you try") are rated on a 5-point Likert scale ranging from 1 (*not at all true*) to 5 (*very true*). The scale demonstrated good reliability in the current study ($\alpha = .87$).

School Grades (W3, W4)

Adolescents' grades were obtained via self-report and teacher report in 10th grade and 12th grade. Adolescents were asked, "If your Math teacher was going to give you a grade for your work up to now, what grade would you get?" A similar question was asked about their English teacher. Responses ranged from 0 (F) to 4 (A). Adolescents' reports of their Math and English grades were averaged. Grades were also obtained from adolescents' Math and English teachers; teachers were asked, "If you were giving final grades today, what grade would this student receive in your course?" Responses ranged from 1 (A) to 5 (F). Math and

English teachers' responses were averaged at each wave and recoded to be consistent with adolescents' reports, such that greater values indicated better school grades.

Additional Covariates and Moderators

Adolescents reported on their gender; mothers reported on adolescent nativity (U.S. born, Mexico born). Mothers and fathers reported on their family income, and these reports were averaged to represent a combined family income.

Results*Preliminary Analyses**Attrition Analyses*

Preliminary attrition analyses were conducted to examine whether families who had data on the outcome variables at W4 were significantly different from those who were missing W4 data. Results from a multivariate analysis of variance (MANOVA) demonstrated a significant multivariate main effect on the demographics and main study variables, $F(10, 359) = 3.01, p < .01$. Follow-up univariate tests indicated that those who were missing data at W4 were more likely to have fathers classified as *less involved*, $F(1, 368) = 4.05, p < .05$, reported lower levels of emotional prosocial behaviors, $F(1, 368) = 9.65, p < .01$, and reported lower levels of compliant prosocial behaviors, $F(1, 368) = 5.56, p < .05$, than those who were not missing data at W4. Additionally, we examined demographic differences in those participants who had data on the outcomes of interest at W4 compared to those who did not. Adolescents who were missing data on the W4 outcomes were more likely to be male, $F(1, 368) = 8.93, p < .01$, had lower parent-reported family income, $F(1, 368) = 7.25, p < .01$, and were more like to report that adolescents were born in Mexico, $F(1, 368) = 4.31, p < .05$, than those who were not missing data at W4.

Nativity and Gender Differences in Prosocial and Academic Outcomes

We next conducted a MANOVA to examine mean-level differences in study variables based on adolescent nativity and gender. There was a significant multivariate main effect for nativity, $F(10, 249) = 2.31, p < .05$, and gender, $F(10, 359) = 3.69, p < .001$. Follow-up univariate tests demonstrated

that adolescents born in the United States reported lower academic self-efficacy, $F(1, 258) = 5.45$, $p < .05$, and had higher teacher-reported grades at W4, $F(1, 258) = 4.21$, $p < .05$, than those born in Mexico. Additionally, univariate tests indicated that girls reported more emotional prosocial behaviors, $F(1, 258) = 8.92$, $p < .01$, and had higher teacher-reported grades at W4, $F(1, 258) = 11.41$, $p < .01$, than boys. As such, adolescent nativity and gender were included as statistical controls in further analyses.

Parenting Profile Differences in Prosocial and Academic Outcomes

Two MANOVAs were conducted to examine mean-level differences in prosocial behaviors and academic variables based on the parenting profiles. Separate MANOVAs were conducted for the mother and father parenting profiles. For the mother parenting profiles, there was a significant multivariate main effect of parenting profile on prosocial behaviors and academic outcomes, $F(12, 508) = 2.04$, $p < .05$. Follow-up univariate tests indicated that adolescents with mothers in the *less involved* profile reported significantly less dire prosocial behaviors than adolescents with mothers in the *authoritative* profile or *moderately demanding* profile, $F(2, 259) = 9.56$, $p < .001$. Reports of dire prosocial behaviors did not differ significantly between adolescents with mothers in the *authoritative* profile or *moderately demanding* profile. There were no significant differences based on the mother parenting profiles for emotional or compliant prosocial behaviors or the academic variables.

There was also a significant multivariate main effect of father parenting profile on prosocial behaviors and academic outcomes, $F(12, 508) = 2.64$, $p < .01$. Follow-up univariate tests demonstrated that adolescents with fathers in the *less involved*

profile reported significantly less emotional, $F(2, 259) = 6.02$, $p < .01$, dire, $F(2, 259) = 10.10$, $p < .001$, and compliant, $F(2, 259) = 5.10$, $p < .01$, prosocial behaviors than adolescents with fathers in the *authoritative* or *no-nonsense* profiles. Additionally, adolescents with fathers in the *less involved* profile reported significantly lower academic self-efficacy, $F(2, 259) = 5.45$, $p < .01$, than adolescents with fathers in the *authoritative* or *no-nonsense* profiles. There were no significant differences between *authoritative* or *no-nonsense* fathering for prosocial behaviors or academic self-efficacy. Moreover, there were no significant differences based on the fathers' parenting profiles for school grades.

Descriptive Statistics and Correlations

Descriptive statistics and correlations among the prosocial behaviors and academic variables used in this study are presented in Table 1. As expected, all three forms of prosocial behaviors were positively correlated (.59–.78). Dire and compliant prosocial behaviors were positively associated with academic self-efficacy and adolescent-reported school grades (but not teacher-reported school grades). Emotional prosocial behaviors were positively associated with academic self-efficacy but not school grades (for either reporter). Among the W4 variables, academic self-efficacy was positively associated with school grades (adolescent and teacher reported), and adolescent-reported school grades and teacher-reported school grades were positively correlated.

Structural Equation Modeling

Structural equation models were conducted using bootstrapped standard errors in *Mplus* version 7.2 (Muthén & Muthén, 2010). Model fit is considered good in path analysis if the comparative fit index (CFI) is greater than or equal to 0.95

Table 1
Intercorrelations and Descriptives for Prosocial Behaviors, Academic Self-Efficacy, and School Grades

	1	2	3	4	5	6
1. Dire prosocial behaviors (W3)	—					
2. Compliant prosocial behaviors (W3)	.60**	—				
3. Emotional prosocial behaviors (W3)	.78**	.59**	—			
4. Academic self-efficacy (W4)	.19**	.17**	.20**	—		
5. School grades—Adolescent report (W4)	.13*	.18*	.08	.33**	—	
6. School grades—Teacher report (W4)	-.02	.06	.02	.17**	.45**	—
M (SD)	3.84 (0.79)	3.68 (0.93)	3.79 (0.79)	4.38 (0.58)	3.00 (0.70)	3.56 (1.08)

Note. W3 = Wave 3; W4 = Wave 4; SD = standard deviation. * $p < .05$. ** $p < .01$.

(adequate if greater than or equal to 0.90), the root mean square error of approximation (RMSEA) is less than or equal to .06 (adequate if less than or equal to .08), and the standardized root mean squared residual (SRMR) is less than or equal to .08 (Byrne, 2010; Hu & Bentler, 1999).

Models were run separately for classifications of adolescent reports of their mother's parenting style and father's parenting style (see Figures 1 and 2). The models included direct relations among parenting styles, prosocial behaviors, academic self-efficacy, and school grades (both teacher and adolescent report). Direct paths from prosocial behaviors to school grades were also included. Indirect effects between parenting styles, prosocial behaviors, academic self-efficacy, and school grades were examined as well. In both models, the exogenous parenting styles were set to correlate with one another. The error variances of adolescent-reported school grades and teacher-reported school grades were also allowed to correlate. In all path models, we controlled for adolescent- and teacher-reported grades at W3. Additionally, parenting styles were dummy coded, with *authoritative* parenting style as the reference group in all models.

Main Model Findings

The model for each parent fit the data well—mother model: $\chi^2(20) = 50.49$, CFI = 0.96, RMSEA = .06, SRMR = .06; father model: $\chi^2(20) = 41.91$, CFI = 0.97, RMSEA = .05, SRMR = .05. In the

model examining mothers parenting styles, results suggest that youth with W1 *less involved* and *moderately demanding* mothering had lower W3 prosocial behaviors than youth with authoritative mothers. A similar pattern of results emerged in examining fathers parenting styles; youth with W1 *less involved* fathering had lower W3 prosocial behaviors than youth with authoritative fathers. The *no-nonsense* dummy variable was not a significant predictor of prosocial behaviors, suggesting that adolescents with *authoritative* fathers and adolescents with *no-nonsense* fathers displayed similar levels of prosocial behaviors. In both models, W3 prosocial behaviors were positively associated with W4 academic self-efficacy, and academic self-efficacy was positively associated W4 adolescent-reported school grades and W4 teacher-reported school grades. Two additional models were analyzed, in which we statistically controlled for adolescent gender, nativity, and family income. However, results from these path models were not meaningfully different from the original models (Figures 1 and 2) that did not control for demographic variables and are therefore not presented.

Multigroup Analyses by Adolescent Gender, Adolescent Nativity, and Family Income

We next conducted multigroup analyses to examine gender, nativity, and family income differences in the hypothesized models. A chi-square difference test was conducted to examine significant

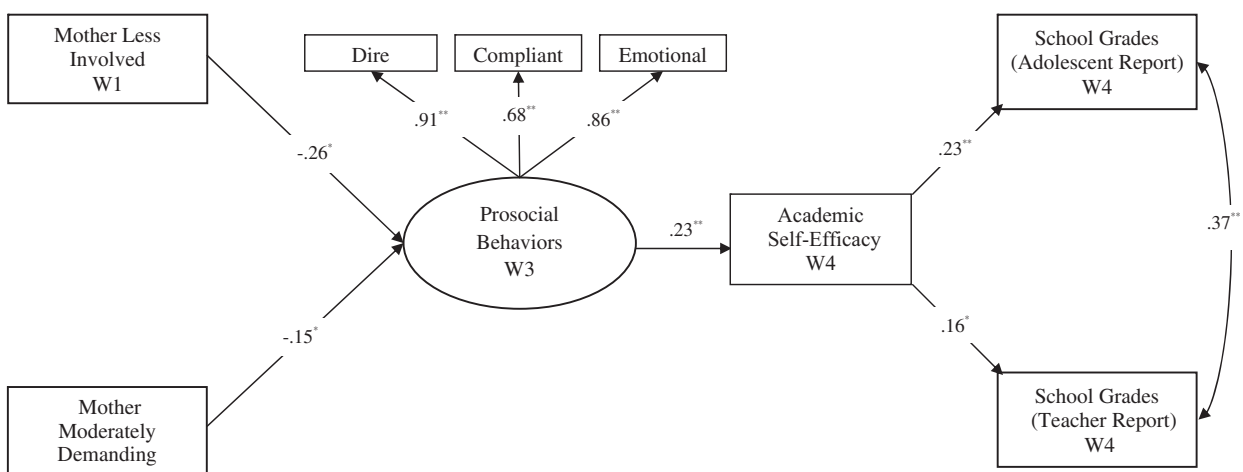


Figure 1. Model linking W1 mother parenting profiles (adolescent report) to W4 adolescent school grades (adolescent and teacher report) via W3 prosocial behaviors. Mothers who were less involved and moderately demanding were compared to authoritative mothers. Controlling for adolescent- and teacher-reported grades at W3. Nonsignificant paths are not depicted. Model fit: $\chi^2(20) = 50.49$, CFI = 0.96, RMSEA = .06, SRMR = .06. * $p < .01$. ** $p < .001$. W1 = Wave 1; W3 = Wave 3; W4 = Wave 4; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean squared residual.

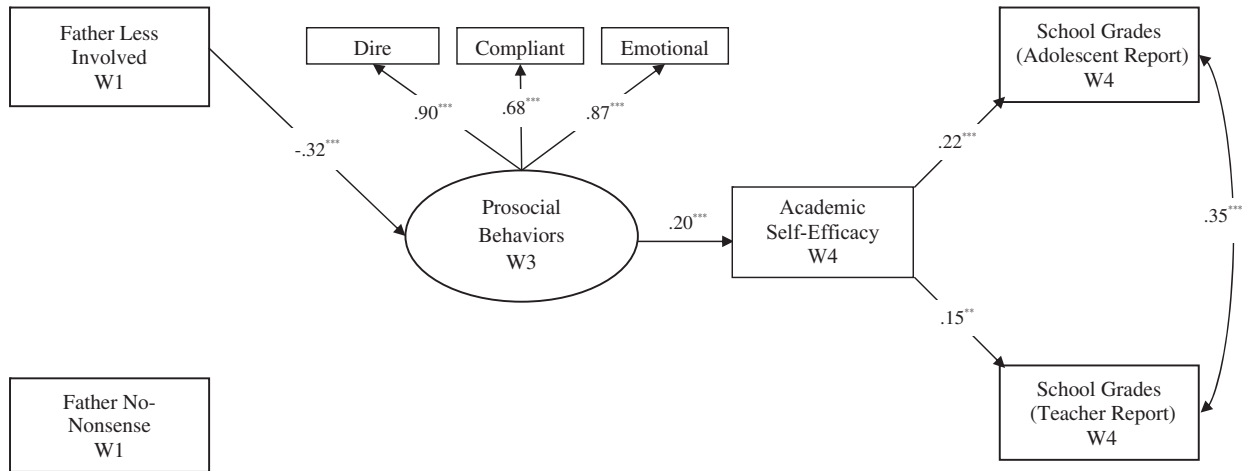


Figure 2. Model linking W1 father parenting profiles (adolescent report) to W4 adolescent school grades (adolescent and teacher report) via W3 prosocial behaviors. Fathers who were less involved and no-nonsense were compared to authoritative fathers. Controlling for adolescent- and teacher-reported grades at W3. Nonsignificant paths are not depicted. Model fit: $\chi^2(20) = 41.91$, CFI = 0.97, RMSEA = .05, SRMR = .05. *** $p < .001$. W1 = Wave 1; W3 = Wave 3; W4 = Wave 4; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean squared residual.

change in the chi-square statistic for a model that constrained the paths to be equal across levels of the moderator (i.e., separately across adolescent genders, adolescent nativity, or family income groups) compared to a model that allow the paths to be unconstrained and different across levels of the moderator variables (Muthén & Muthén, 2010). In testing adolescent gender differences, the unconstrained model and the constrained model were not significantly different for either model as demonstrated by the chi-square difference test—mother model: $\Delta\chi^2(13) = 9.58$, $p = .73$; father model: $\Delta\chi^2(13) = 12.63$, $p = .48$. In testing adolescent nativity differences, the unconstrained model and the constrained model were not significantly different for the father model as demonstrated by the chi-square difference test, $\Delta\chi^2(13) = 6.70$, $p = .92$. The chi-square difference test was significant for the mother model, $\Delta\chi^2(13) = 27.39$, $p = .01$, suggesting differences in the model based on adolescent nativity (U.S. vs. Mexico). Following the initial multigroup analysis, we conducted individual Satorra–Bentler scaled chi-square difference tests on each path to examine which specific paths were significantly different by nativity. Results from this analysis demonstrated that only one path (*less involved* mothering to adolescent-reported grades) was significantly different between groups, $\Delta\chi^2(1) = 12.98$, $p < .001$, however, this path was nonsignificant for both groups.

To examine differences in the models based on family income, we created a median split of

mother-reported family income (below median = less than or equal to \$5,000 to \$25,001–30,000; above median = \$30,001–\$35,000 to \$95,001+). Results showed that the unconstrained model and the constrained model were not significantly different for either model, as demonstrated by the chi-square difference tests—mother model: $\Delta\chi^2(17) = 19.37$, $p = .11$; father model: $\Delta\chi^2(13) = 8.59$, $p = .80$.

Indirect Effects

Bias-corrected bootstrap confidence intervals (CIs) were used to test indirect effects (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). In the model examining mothers' parenting styles, indirect effects were significant for the relations between *less involved* mothering (compared to *moderately demanding* and to *authoritative* maternal parenting styles) and adolescent-reported grades, via prosocial behaviors and academic self-efficacy, indirect effect = $-.01$, CIs $[-.03, .00]$, $p < .05$. Indirect effects were also significant for the relations between *moderately demanding* mothering (compared to *authoritative* and *less involved* maternal parenting styles) and adolescent-reported grades, via prosocial behaviors and academic self-efficacy, indirect effect = $-.01$, CIs $[-.02, .00]$, $p < .05$. The indirect relations between prosocial behaviors and adolescent-reported grades, indirect effect = $.05$, CIs $[.02, .09]$, $p < .01$, and teacher-reported grades, indirect effect = $.04$, CIs $[.00, .07]$, $p < .05$, via academic self-

efficacy were significant. Additionally, the indirect relations between *less involved mothering* (compared to *authoritative* and *moderately demanding* maternal styles) and academic self-efficacy, indirect effect = $-.06$, CIs $[-.11, -.01]$, $p < .05$, and the indirect relations between *moderately demanding* mothering (compared to *authoritative* and *less demanding* maternal styles) and academic self-efficacy, indirect effect = $-.03$, CIs $[-.06, -.01]$, $p < .05$, via prosocial behaviors, were significant.

In the model examining fathers' parenting styles, indirect effects were significant for the relations between *less involved* fathering (compared to *authoritative* and *no-nonsense* paternal styles) and adolescent-reported grades, via prosocial behaviors and academic self-efficacy, indirect effect = $-.01$, CIs $[-.03, .00]$, $p < .01$. The indirect relations between prosocial behaviors and adolescent-reported grades, via academic self-efficacy, indirect effect = $.05$, CIs $[.01, .08]$, $p < .01$, and the indirect relations between *less involved* fathering (compared to *authoritative* and *no-nonsense* paternal styles) and academic self-efficacy, via prosocial behaviors, indirect effect = $-.06$, CIs $[-.11, -.02]$, $p < .01$, were also significant.

Alternative Model Testing

To explore whether academic self-efficacy and grades predicted subsequent prosocial behavior, we also examined an alternative path model with parenting styles at W1 (grade 5) set to predict academic self-efficacy at W3 (grade 10), teacher- and adolescent-reported grades at W3 (grade 10), and adolescents' prosocial behaviors at W4 (grade 12). Models were run separately for classifications of adolescent reports of their mother's parenting styles and father's parenting style. Although the model fit for the models was acceptable—mother model: $\chi^2(10) = 9.32$, CFI = 1.00, RMSEA = .00, SRMR = .04; father model: $\chi^2(10) = 3.12$, CFI = 1.00, RMSEA = .00, SRMR = .07, there were no significant paths between parenting styles, academic self-efficacy, or adolescent grades (teacher- or adolescent-reported grades) and adolescents' prosocial behaviors in either model. There were, however, significant positive associations between academic self-efficacy and teacher- and adolescent-reported grades for both models and a negative association between *less involved* fathering and academic self-efficacy. Furthermore, we examined the alternative models, controlling for adolescents' prosocial behaviors at W3. Again, these models had adequate fit—mother model: $\chi^2(31) = 46.70$, CFI = 0.96, RMSEA = .05, SRMR = .07; father model:

$\chi^2(31) = 36.94$, CFI = 0.99, RMSEA = .03, SRMR = .07. In both models, there was a significant positive association between academic self-efficacy at W3 and adolescent-reported grades at W3. There were no other significant associations in either model.

Discussion

These findings are the first to demonstrate longitudinal relations between earlier reports of parenting and prosocial behaviors and subsequent academic performance in a sample of U.S. Mexican youth. Moreover, the findings suggest that prosocial behaviors mediate relations between parenting styles and academic outcomes in U.S. Mexican youth. Interestingly, the patterns of relations for paternal and maternal parenting styles and their youth prosocial and academic outcomes were slightly different. Specifically, fathers and mothers who exhibited an *authoritative* parenting style were more likely to have youth who expressed high levels of prosocial behaviors than mothers and fathers who were *moderately demanding* and *less involved*. Interestingly, *authoritative* fathers were not more likely than *no-nonsense* fathers to have adolescents with high levels of prosocial behaviors. In contrast, fathers and mothers who were *less involved* and mothers who were *moderately demanding* (and low on harshness) were less likely than *authoritative* fathers and mothers to have youth who exhibit high levels of prosocial behaviors. In turn, youth who expressed high levels of prosocial behaviors were more likely to report higher academic self-efficacy and better academic achievement. The pattern of relations was relatively stronger for maternal parenting styles than paternal parenting styles, but the findings generally held for both parents over and above the effects of gender, nativity, family income, and the contributions of earlier levels of academic performance. Taken together, the findings have important implications for understanding positive social and academic development in this ethnic minority population.

Given the disparities in academic achievement among Latino/as in the United States, the findings yield evidence for early factors that predict later positive academic outcomes. Importantly, the findings extend the previous evidence that both parenting and prosocial behaviors predict later academic achievement to a sample of U.S. Mexican youth. The findings regarding the links between prosocial behaviors and academic outcomes are in accord

with previous similar findings in non-Latino/a samples (e.g., Caprara et al., 2000; Carlo et al., 2011). Given the recent evidence that prosocial behavior intervention programs are effective in improving academic outcomes (e.g., Caprara et al., 2014), the present findings suggest that prosocial behavior programs may be a conduit to foster better academic outcomes in U.S. Mexicans. Moreover, the present findings also suggest that early prosocial behaviors predict higher academic self-efficacy, which in turn predicted better school grades. These latter findings suggest that the beneficial predictive effects of prosocial behaviors and academic achievement may be indirect, such that engaging in prosocial actions facilitates greater confidence in academics. The gains in academic confidence may be associated with self- and emotion-regulatory skills and interpersonal competencies related to youth who exhibit high levels of prosocial competencies (Carlo, 2014; Eisenberg et al., 2006). For example, because prosocial youth also exhibit good self-regulation skills, these skills may also facilitate attention, focus, and persistence on academic tasks. Alternatively, prosocial youth may be deemed desirable by teachers and classmates, which may lead to more school engagement and connectedness, and greater academic self-confidence and outcomes. Although further research is needed to examine these possibilities, it is important to note that these findings held even while statistically controlled for youth's previous academic performance.

The links between parenting styles and prosocial behaviors in this U.S. Mexican sample are somewhat consistent with prior research in mostly European American samples (Eisenberg & Valiente, 2002). For example, *authoritative* (high on responsiveness and demandingness) fathers and mothers were more likely to have youth who engaged in high levels of prosocial actions than parents who were lower on either or both parenting dimension (i.e., *less involved* mothers and fathers or *moderately demanding* mothers). These findings provide the first direct evidence of positive associations between *authoritative* parenting and prosocial behaviors in a sample of U.S. Latino youth and support the notion that the combination of high levels of parental responsiveness and demandingness may promote good self-regulation skills, model caring and responsive behaviors, and foster moral conduct and standards conducive to prosocial actions (Carlo, 2014; Eisenberg et al., 2006; Grusec, Goodnow, & Kuczynski, 2000). Interestingly, when higher levels of paternal harshness were combined with high paternal warmth and high demandingness, as in

no-nonsense parenting, no costs to prosocial behaviors were observed. This finding extends prior work that captures the full range of parenting styles employed by U.S. Mexican fathers. Furthermore, it is consistent with the idea that Latino parents utilize punitive parenting techniques to offset the potential dangers of often environmental adversities (White et al., 2016) and that these techniques may create normative expectations that may mitigate negative youth consequences (García Coll et al., 1996; Guerra & Williams, 2005; see also Chao & Otsuki-Clutter, 2011) and not negatively affect positive youth consequences. Although further studies examining parenting styles and prosocial development in U.S. Latino youth are needed to confirm these findings, the pattern of results suggest that *authoritative* (and perhaps, *no-nonsense*) parenting styles may be conducive to positive social development in this ethnic minority population.

Of the several identified parenting styles in this sample of U.S. Mexicans, mothers who were relatively *less involved* (lower on responsiveness and demandingness) or *moderately demanding* (high responsiveness with moderate demandingness) seemed to have the most negative effects on youth prosocial behaviors. For fathers, relatively *less involved* parenting style was most predictive of less prosocial behaviors in their youth. The findings regarding the levels of reduced involvement and prosocial behaviors are in accord with the notion that less involved parents may fail to be models of responsiveness, caring, and consideration of others' needs—characteristics strongly associated with prosocial behaviors and positive youth development (Eisenberg & Valiente, 2002). Similarly, mothers who exert only moderate levels of demandingness (even in the context of high responsiveness) on their youth may also mitigate prosocial tendencies in their youth. Perhaps this parenting style is insufficiently strong enough to foster prosociality and may undermine the intrinsic attributions and motives (e.g., sympathy, higher level moral reasoning) necessary for youth to frequently engage in prosocial behaviors (see Grusec & Sherman, 2011). Further research will be needed to examine the links between this parenting style and prosocial motives, and to discern the specific aspects of this parenting style that may be most predictive of prosocial behaviors.

Interestingly, fathers' *no-nonsense* parenting (i.e., high levels of acceptance and demandingness, with moderate levels of harshness) compared to *authoritative* was not differentially associated with youth prosocial behaviors. This finding suggests that the

presence of elevated paternal harshness, which is often associated with negative youth outcomes, may be offset by the presence of high levels of warmth and demandingness (at least in U.S. Mexican fathers). High levels of parental warmth have been reported in prior studies of U.S. Latino families and may help parents tactfully and successfully apply punitive practices on their youth with less harsh negative repercussions (Halgunseth et al., 2006). This explanation has also been offered as a way to explain the often-reported nonsignificant relations between similar parenting styles (e.g., non-nonsense and authoritarian parenting style) and youth outcomes in African American families (e.g., Brody & Flor, 1998) and Mexican-origin Latinos (White et al., 2013). Thus, in general, these findings suggest that the presence of high levels of parental warmth and demandingness, whether or not they were coupled with elevated harshness, were key factors in predicting higher levels of youth prosocial behaviors.

Evidence for mediating effects of both prosocial behaviors and academic self-efficacy on the relations between parenting styles and academic achievement was also found. The findings suggest that the links between parenting and academic achievement in U.S. Mexican youth are indirect through increases in prosocial behaviors and academic self-efficacy. In general, these findings are in accord with prior research on the possible deleterious consequences of less involved parents in youth social and academic development. Although the findings held across families of different generational statuses, future studies could examine whether the underlying mechanisms explaining links between parent socialization and academic competence differ with specific generational status families. For example, more recent immigrant parents' involvement in youth academics may be primarily constrained due to language or educational barriers, whereas later generation parents' involvement may primarily be constrained by other challenges (e.g., work hours). Nonetheless, the findings suggest that parental involvement may be of particular interest in predicting positive youth outcomes among U.S. Mexicans because such parenting may help their ethnic minority youth better integrate into their school and community. Moreover, the findings lend credence to the notion that early parenting still exerts effects on Latino youth social and academic development despite the increased exposure to peers and other socializing agents (e.g., media).

The present findings add to the extant research on the relative predictive strength of maternal

versus paternal parenting on youth prosocial behaviors. Prior research suggests that mothers play a relatively prominent role in predicting prosocial behaviors relative to fathers (Hastings, McShane, Parker, & Ladha, 2007). Although maternal parenting styles were predictive of youth prosocial behaviors, there was some evidence that paternal level of involvement was also a significant predictor. Given the sparse direct research on the effects of fathers versus mothers and the fact that the few studies are scattered across childhood and adolescence, it is difficult to discern conclusively about such effects. It is possible that fathers are relatively more predictive of youth prosocial behaviors in adolescence than childhood. Alternatively, given the importance of family ties and familism in traditional Mexican culture, perhaps Latino fathers (and mothers) play a relatively important role in their youth outcomes. There is research that suggests that fathers' (but not mothers') familism values predict youth familism values and that fathers' (but not mothers') familism values predict the amount of time Latina youth spend with family in late adolescence (Zeiders, Updegraff, Umana-Taylor, McHale, & Padilla, 2016). Other research shows that mothers' (fathers were not included in this prior study) familism predicts Latino/a youth familism values, which in turn predict Latino/a youth prosocial behaviors (Calderón et al., 2011). Taken together, these studies imply that both mothers and fathers may play an important role in predicting prosocial behaviors in U.S. Latino families.

Youth gender did not influence the effects of paternal or maternal parenting styles on youth outcomes. These findings are interesting in light of the previous research and the present findings that shows gender differences in prosocial and academic outcomes, even among U.S. Latino youth (Calderón, 1998). Cultural scholars have noted the strong traditional gender roles that are traditionally espoused in many Latino/a families (Hurtado & Cervantez, 2009), which may have been expected to manifest as a significant gender effect on the present relations. Moreover, paternal and maternal relationships with their adolescents have been characterized somewhat differently as a function of gender (Leaper, 2002). However, much less research has been devoted to examining the characterization of parent-son and parent-daughter relationships in U.S. Mexican families. Perhaps the emphasis of familism and filial piety in many U.S. Mexican parents minimizes gender differences in the effect of parenting styles on youth prosocial and academic outcomes.

Despite the relatively large sample, multiple reporters, and longitudinal design of the present study, there were some limitations. First, we did not have a full prospective study design (e.g., we did not have previous measurement of prosocial behaviors). A fully prospective study design would allow for stronger causal and direction of effects inferences. However, we found little support for an alternative partial reverse causal model, which provides relatively more empirical support for the proposed path model. Moreover, although we controlled for earlier academic achievement (at W3), we could not control for academic achievement at W1. Thus, we could not fully account for prior academic performance. Second, a more representative sample of U.S. Mexican families would be desirable. The present sample is relatively acculturated and represents U.S. Mexicans in a community that harbors a relatively large, urban Latino/a community. Relatedly, future studies designed to directly examine generational status group differences by youth on their perceptions of parenting could yield unique relations between parenting and youth outcomes. Third, we utilized mostly self-report measures (though we used teacher-reported academic grades), which raises concerns about self-presentational demands and shared method variance. Scholars have noted advantages and disadvantages of youth report measures of parenting and self-outcomes (see Gonzales, Caucé, & Mason, 1996). Because each method probably reflects different perspectives and context-related processes, youth self-reports can be valid in representing the youth perspective on these processes and their reactions based on their perceptions. Additionally, we relied on person-centered analyses of parenting behaviors assessed by the CRPBI, a scale that was initially developed and validated among non-Latino populations. Although prior work demonstrates the cross-cultural and cross-language validity and reliability of the CRPBI, future work would benefit from the use of different methods (e.g., observational) or measures of parenting. Furthermore, the lack of support for the alternative model reduces the likelihood that the findings are substantially a function of self-presentational demands. However, future research using multiple methods (e.g., observations) is desirable. Fourth, although we assessed varied dimensions of parenting, we acknowledge that other aspects of parenting styles (e.g., guilt or shame induction, autonomy granting) could be assessed in future research, which may lead to additional insights into parenting styles among U.S. Mexican parents.

Despite these study limitations, the present study significantly contributes to our understanding of positive youth development in U.S. Mexican youth. Given the general lack of longitudinal designs on parenting and positive youth outcomes among U.S. Mexicans, the present findings lend support to the developmental interplay of parenting and subsequent youth social behaviors and academic attitudes in predicting academic performance in U.S. Mexican youth. Further research is needed that examines culture and nonculture-specific influences of prosocial and academic outcomes in U.S. Mexican youth. For example, traditional models of prosocial development (Eisenberg et al., 2006) propose other influences (e.g., self-regulation skills) of prosocial and academic outcomes that may be of interest to examine in future research with U.S. Mexican youth. Moreover, prior research demonstrates that traditional Mexican cultural values (e.g., familism) may also predict prosocial outcomes (Carlo, 2014); thus, future studies could examine the interplay of culture-specific and nonculture-specific predictors of prosocial and academic outcomes in such youth. Nonetheless, the present findings provide much needed evidence on predictors of prosocial and academic outcomes in U.S. Mexican youth and are a promising step toward efforts aimed at understanding prosocial development and academic disparities in this population.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Figure S1. Original Figures With Profile Solutions for the Three-Class LPA Solutions for Youths' Reports on Mothers' (Top Panel) and Fathers' (Bottom Panel) Parenting Behaviors



[devpsy.org](#) > [teaching](#) > [parents](#) > [baumrind's parenting styles](#) | k h g @ d e v p s y . o r g

This is a collection of resources to help you teach about Diana Baumrind's observed Parenting Styles. Here you will find: (1) excerpts from her original work on the topic (excellent for sparking class discussion) (2) some information you might put on slides or prepare for yourself, and (3) a fun role-playing activity to push students to apply what they have learned.

Here is a PDF file [Baumrind Parenting Styles](#) handout for your students.

You may request a single copy of a 21-page PDF file of the original article by sending a short note to teach@devpsy.org; then you can make two copies available for your students on reserve.

Diana Baumrind's (1966) Prototypical Descriptions of 3 Parenting Styles

First paper where prototypes are published:

Baumrind, D. (1966). Effects of Authoritative Parental Control on Child Behavior, *Child Development*, 37(4), 887-907.

Second, and most often cited, paper with extensive discussion of parenting styles: Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, 75(1), 43-88.

The **permissive** parent attempts to behave in a nonpunitive, acceptant and affirmative manner towards the child's impulses, desires, and actions. She [the parent] consults with him [the child] about policy decisions and gives explanations for family rules. She makes few demands for household responsibility and orderly behavior. She presents herself to the child as a resource for him to use as he wishes, not as an ideal for him to emulate, nor as an active agent responsible for shaping or altering his ongoing or future behavior. She allows the child to regulate his own activities as much as possible, avoids the exercise of control, and does not encourage him to obey externally defined standards. She attempts to use reason and manipulation, but not overt power to accomplish her ends (p. 889).

The **authoritarian** parent attempts to shape, control, and evaluate the behavior and attitudes of the child in accordance with a set standard of conduct, usually an absolute standard, theologically motivated and formulated by a higher authority. She [the parent] values obedience as a virtue and favors punitive, forceful measures to curb self-will at points where the child's actions or beliefs conflict with what she

thinks is right conduct. She believes in keeping the child in his place, , in restricting his autonomy, and in assigning household responsibilities in order to inculcate respect for work. She regards the preservation of order and traditional structure as a highly valued end in itself. She does not encourage verbal give and take, believing that the child should accept her word for what is right (p. 890).

The **authoritative** parent attempts to direct the child's activities but in a rational, issue-oriented manner. She [the parent] encourages verbal give and take, shares with the child the reasoning behind her policy, and solicits his objections when he refuses to conform. Both autonomous self-will and disciplined conformity are valued. [She values both expressive and instrumental attributes, both autonomous self-will and disciplined conformity] ... Therefore she exerts firm control at points of parent-child divergence, but does not hem the child in with restrictions. She enforces her own perspective as an adult, but recognizes the child's individual interests and special ways. The authoritative parent affirms the child's present qualities, but also sets standards for future conduct. She uses reason, power, and shaping by regime and reinforcement to achieve her objectives, and does not base her decisions on group consensus or the individual child's desires. [... but also does not regard herself as infallible, or divinely inspired.] (p. 891) [Note that portions in brackets are significant additions to the prototype in Baumrind (1967).]

Background Information: Child Qualities & Parenting Styles

Authoritative Parenting

- lively and happy disposition
- self-confident about ability to master tasks.
- well developed emotion regulation
- developed social skills
- less rigid about gender-typed traits (exp: sensitivity in boys and independence in girls)

Authoritarian Parenting

- anxious, withdrawn, and unhappy disposition
- poor reactions to frustration (girls are particularly likely to give up and boys become especially hostile)
- do well in school (studies may show authoritative parenting is comparable)
- not likely to engage in antisocial activities (exp: drug and alcohol abuse, vandalism, gangs)

Permissive Parenting

- poor emotion regulation (under regulated)
- rebellious and defiant when desires are challenged.
- low persistence to challenging tasks

- antisocial behaviors

Background Information: Why does authoritative parenting work?

Control that appears fair and reasonable (i.e. not arbitrary) to the child is far more likely to be complied with and internalized.

Nurturing parents who are secure in the standards they hold for their children provide models of caring concern as well as confident, self-controlled behavior. A child's modeling of these parents provides emotion regulation skills, emotional understanding, and social understanding.

Parents who combine warmth and rational and reasonable control are likely to be more effective reinforcing agents. They praise children for striving to meet their expectations and making good use of disapproval, which works best when applied by an adult who has been warm and caring.

Authoritative parents make demands that fit with children's ability to take responsibility for their own behavior. Children subsequently learn that they are competent individuals who can do things successfully for themselves. This fosters high self-esteem, cognitive development, and emotional maturity.

Lesson Plan Excerpt: The fourth parenting style

Sorry I haven't had a chance to prepare this section yet. Right now my priority need to be completing my dissertation. I hope to prepare this lesson plan excerpt in the summer. Here is an outline. The basic idea is that you ask students to draw up diagrams for how the parenting styles relate. That might seem obtuse to students so you can start them out by suggesting a model: draw three blobs on the board and put a parenting style in each blob. Then say your model is that each of three styles is completely distinct from the others. That should spark on some discussion which typically leads to a "line" model where authoritative is a kind of middle point between the other two. Further debate (possibly needing your nudge) should bring out that you really need to distinct (i.e. orthogonal) lines. From there you can get the standard two-by-two matrix and fill in the remaining style. Then explain previous research about this.

Lesson Plan Excerpt: Role Play of Parenting

Sorry I haven't had a chance to prepare this section yet. Right now my priority need to be completing my dissertation. I hope to prepare this lesson plan excerpt in the summer. Here is an outline. As the instructor, you role-play the adolescent child and the class plays the 'parents'. Set up the scenario where the parent asks a child to do a chore. The child says "no." Ask for permissive parenting responses. Then ask for authoritarian parenting responses. This is typically very easy for students to do. If you keep your demeanor relaxed and respond with humor, students end up laughing as the model these scenarios. Finally ask for authoritative parenting responses. These role-playing tasks are pretty easy and essentially review the basic ideas for students. Now extend the scenario by responding to the parent's authoritative suggestions with something like, "You never make (sibling_name) do the dishes!!!!"

Now repeat the different styles. When you reach authoritative parenting, students will probably have difficulty. Most will drift into permissive parenting styles. A typical authoritative solution is to acknowledge the child's feelings, still assert a parenting role to insure the chore is done now, and arrange to work on issue for the future. (e.g. "You feel (sibling_name) does not do as many chores as you. Please wash the dishes now. We'll talk about chores as a family tonight after dinner."). Here is a place to note how you can have high control and a high level of empathy. A second point to mention when students are having trouble is the difference between 'hot' and 'cold' cognition.

devpsy.org > teaching > parents > baumrind's parenting styles		
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Diana Baumrind's (1966) Prototypical Descriptions of 3 Parenting Styles

First Paper where prototypes are published:

Baumrind, D. (1966). Effects of Authoritative Parental Control on Child Behavior, *Child Development*, 37(4), 887-907.

Second Paper, and most often cited, extensive discussion of parenting styles:

Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, 75(1), 43-88.

The **permissive** parent attempts to behave in a nonpunitive, acceptant and affirmative manner towards the child's impulses, desires, and actions. She [the parent] consults with him [the child] about policy decisions and gives explanations for family rules. She makes few demands for household responsibility and orderly behavior. She presents herself to the child as a resource for him to use as he wishes, not as an ideal for him to emulate, nor as an active agent responsible for shaping or altering his ongoing or future behavior. She allows the child to regulate his own activities as much as possible, avoids the exercise of control, and does not encourage him to obey externally defined standards. She attempts to use reason and manipulation, but not overt power to accomplish her ends (p. 889).

The **authoritarian** parent attempts to shape, control, and evaluate the behavior and attitudes of the child in accordance with a set standard of conduct, usually an absolute standard, theologically motivated and formulated by a higher authority. She [the parent] values obedience as a virtue and favors punitive, forceful measures to curb self-will at points where the child's actions or beliefs conflict with what she thinks is right conduct. She believes in keeping the child in his place, , in restricting his autonomy, and in assigning household responsibilities in order to inculcate respect for work. She regards the preservation of order and traditional structure as a highly valued end in itself. She does not encourage verbal give and take, believing that the child should accept her word for what is right (p. 890).

The **authoritative** parent attempts to direct the child's activities but in a rational, issue-oriented manner. She [the parent] encourages verbal give and take, shares with the child the reasoning behind her policy, and solicits his objections when he refuses to conform. Both autonomous self-will and disciplined conformity are valued. [She values both expressive and instrumental attributes, both autonomous self-will and disciplined conformity] ... Therefore she exerts firm control at points of parent-child divergence, but does not hem the child in with restrictions. She enforces her own perspective as an adult, but recognizes the child's individual interests and special ways. The authoritative parent affirms the child's present qualities, but also sets standards for future conduct. She uses reason, power, and shaping by regime and reinforcement to achieve her objectives, and does not base her decisions on group consensus or the individual child's desires. [... but also does not regard herself as infallible, or divinely inspired.] (p. 891) [Note that portions in brackets are significant additions to the prototype in Baumrind (1967).]

Impact of parenting styles on adolescent resilience

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The purpose of this study was to find out the impact of parenting styles on adolescent resilience. The data was collected from 140 adolescents that include 70 boys and 70 girls from different schools in Calicut district. Tools used for this purpose were Connor Davidson's Resilience Scale (CD-RISC) and Scale of Parenting Styles. Pearson's Correlation coefficient and t-test were used for statistical analysis. Results show that there is a significant relationship between dimensions of parenting styles. Based on gender, resilience is seen higher in girls than boys. Authoritative parenting style is associated with higher resilience. Results also indicate that there is a significant difference in the dimensions of parenting style among adolescent boys and girls. Some of the limitations of the study are the sample size being small and its generalizability being limited, the participants had a tendency to answer in socially desirable way since it was a self-report data, number of items in scale of parenting styles being large.

Keywords: parenting styles, resilience, adolescents

Adolescence is a stage of transition that is marked by a number of developmental, biological, behavioural, social and academic challenges. During this stage, adolescents experience significant changes in their physical, cognitive and social domain functioning (Tanti, Stukas, Halloran, & Foddy, 2010). Studies of changes in behaviour, attitudes and values throughout adolescence have revealed not only that these changes are more rapid in the early than in the latter part of adolescence, but also that the behaviour, attitudes and values in the early part of the period are markedly different from those in the latter part (Hurlock, 1953). This transitional stage of development depends on various factors in which parenting style plays a key role in development (Baumrind, 1991). As the adolescence is a transitional stage, problems are present at a higher rate and thus resilience also plays a major role in this developmental stage.

Parenting styles

The concept parenting style is viewed as a characteristic of a parent that changes the effectiveness of family socialisation practices and children's receptiveness to such practices (Darling & Steinberg, 1993). Parenting is a complex activity that includes a large number of specific behaviours that work individually and together to influence child outcomes (Baumrind, 1991). The quality of parenting can be more essential than the quantity of time spent with the child. The most popular work in describing parenting dimensions has been that of Schaeffer's (Schaeffer, 1965). He identified two major dimensions of parenting style: The first one refers to the degree of love versus hostility or acceptance versus rejection, or loving versus rejecting. The second dimension pertains to autonomy versus control or permissiveness versus restrictiveness. Steinberg et al. (1992) found out that a factor analysis of items pertaining to parenting behaviours yielded three distinct parenting dimensions: Parental acceptance/involvement, Parental strictness/supervision and Psychological autonomy. However later, Steinberg used only parental acceptance

and Parental control dimensions for describing parenting styles (Steinberg, 1992).

Diana Baumrind is a researcher who focused on the classification of parenting styles. Baumrind's research is known as 'Baumrind's parenting typology'. In her research, she found what she considered to be the four basic elements that could help shape successful parenting: responsiveness-unresponsiveness and demanding-undemanding. Based on extensive observation, interviews and analyses, Baumrind identified three initial parenting styles: Authoritative, Authoritarian and Permissive parenting (1967). Later Maccoby and Martin (1983) expanded this parenting style model using a two-dimensional framework. They made further distinction by expanding Baumrind's permissive parenting into two different types: indulgent (permissive) parenting and neglectful (uninvolved) parenting (Maccoby & Martin, 1983).

Types of parenting styles

Defining authoritative, authoritarian, permissive and uninvolved parenting typologies can be achieved by examining different levels of the dimensions of acceptance and rejection, behavioural control and psychological control that are unique to each style.

Authoritative: Parents who are high on acceptance and behavioural control, but low on psychological control (Baumrind, 2013). Baumrind (1966) conceptualised authoritative parents as rational, warm, encouraging and controlling in a way that promotes child autonomy. Authoritative parenting style has been deemed the optimal parenting style and has been related to positive child outcomes such as self-reliance, social responsibility and adjustment (Baumrind et al., 2010).

Authoritarian: Parents who are rejecting and psychologically controlling (Baumrind, 2013). Authoritarian parenting is highly demanding and is often punitive and forceful in order to adhere to an absolute standard for behaviour (Baumrind, 2012). This parenting type has been related to less optimal child outcomes, including lower self-efficacy, rebellion and more externalizing problems (Maccoby & Martin, 1983).

Permissive: Parents who promote psychological autonomy and are accepting and exhibit lax behavioural control (Baumrind, 2013). Parents included in this type are affirming and place few behavioural

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demands on the child and avoid coercive practices as much as possible. This is related to child outcomes such as lower achievement, lack of impulse control and lower autonomy.

Uninvolved: Parents who are rejecting and have lax behavioural control (Baumrind, 2013). These parents behave in any way necessary to minimise parenting effort and time and thus responds to a child with hostility or may not even respond at all, neglecting the needs of the child altogether. Baumrind (1989) found that the uninvolved parenting style was related to the use of coercive practices and a lack of monitoring. Children of these parents tend to lack self-control, have low self-esteem and are less competent than their peers.

Various studies and research have found authoritative parenting to have beneficial effects of adolescent lifestyles. A child's temperament and parents' cultural patterns have an influence on the kind of parenting style a child may receive (Berger, 2011). Early research in parenting and child development found that parents who provide their children with proper nurture, independence and firm control, have children who appear to have higher levels of competence and are socially skilled and proficient. Additional developmental skills resulting from positive parenting styles include maintaining a close relationship with others, being self-reliant, and independence. During the mid- 1980s, researchers began to explore how specific parenting styles influence a child's later development. Some of the factors that determine one's way of parenting are: Socioeconomic status and potentially one's ethnic background, their parents' parenting style, their child's temperament and personality, their temperament and personality, their level of awareness, etc. Another factor found to be important to healthy development of children is parent consistency. The inconsistency means that the parents exhibit different parenting styles, ie, one parent may exhibit authoritarian parenting and the other parent exhibit authoritative parenting. Inconsistent parenting style may expose a child to confusion when the child is unable to predict negative reactions from the parents (Dwairy, 2008). Therefore, parents who are inconsistent in their approach towards their child can unintentionally promote negative child behaviour, which can lead to a mutual escalation into negative behaviour from both. In families where the focus is on negative behaviour, prosocial behaviour often goes unrecognised and nonviolent conflict resolution is neither taught nor modelled. Reducing harsh, negative and inconsistent parenting has shown to have a positive influence on children's behaviour. One area of parent child interaction that has been related to parenting styles is the examination of how parents respond to children's negative emotions. Because it is normative for children to experience negative emotions, the way parents respond influences children's emotion socialisation and how children cope with their own emotions in the future (Eisenberg et al., 1999). Parents who respond to children's negative emotions in a way that is supportive, such as using problem focused, emotion focused, or encouraging responses, help the children become more socially and emotionally competent (Fabes, Poulin, Eisenber, & Madden-Derdich, 2002).

Researchers have identified four aspects of family interaction that may be conceptually and empirically linked to parenting styles or patterns of behaviour that may be reflective of parenting styles: problem solving, communication, affective responsiveness and affective involvement. Family problem solving refers to the ability of the family to find a resolution for problems as they arise, in order to maintain family functioning. Family communication can be

understood as the clarity and effectiveness of verbal exchanges within the family. Family affective responsiveness refers to whether family members appropriately display emotions and affect across a range of situations. Finally, affective involvement refers to the extent to which family values and shows interest in each other (Epstein et al., 1983).

Resilience

Webster's New Twentieth Century Dictionary of English Language (1958) defined resilience as "the ability to bounce or spring back after being stretched or constraint or recovering strength or spirit", and the American Heritage Dictionary defined resilience as "the ability to recover quickly from illness, change, or misfortune". In psychology, Resilience means positive capacity of people for adaptation with stress and disasters. Resiliency is one of the main concepts of personality in order to understand motivation, emotion and behaviour (Block, 2005). As a result of this adaptive resiliency, people with high level of resiliency experience more positive emotions in their lives and they are more self-confident and they have better psychological adaptation compared to those with low level of resiliency. This construct is particularly important in middle of adolescence, because this period is characterised by extensive social, biological, cognitive and neurotic changes. In this period, adolescents completely pass childhood and enter a new stage in which they encounter many problems. According to Smith and Carlson (1997), adolescents consider stressful events more than adults. They may have unhealthy behaviours or negative attitude towards themselves. As one of protective factors against risky factors in future, resiliency in adolescents especially those in middle of this period is a new area that has been paid attention by researchers.

The concept of resilience first emerged from studies conducted in the 1970s in the fields of psychopathology, traumatic stress and poverty. Resilient persons are active participants in creating their own environment. Therefore, in recent years, the new wave of research in the field of mental health has focused on predictors of resilience. According to current models of resilience, the factors affecting resilience can be organised as external and internal factors. External factors are extrinsic and generated from outside of a person, and are reflected in the nature and quality of relationships established within and outside the family group. Internal factors are generated from within an individual and include biological and psychological factors. Resilient adolescents have personal features such as social competence, independency, discipline, patience, optimism and high intelligence. They are good in problem solving. Having personal control, high self-esteem and concentration on strengths are other features of resilient adolescents. Family plays an important role in formulation of social maturity in adolescence period. Growth of resiliency is not separated from other growth processes and it is a dynamic process in which personal and environmental effects form it by interaction and interpersonal relation.

The first research on resilience was published in 1973 by Garnezy. The study used epidemiology, which is the study of disease prevalence, to uncover the risks and the protective factors that now held define resilience. A year later, the same group of researchers created tools to look at systems that support development of resilience. Resilience also emerged as a major theoretical and research topic from the studies of children with

mothers diagnosed with schizophrenia in the 1980s (Garmezy, Masten, & Best, 1990). A study conducted in 1989 showed the results that children with a schizophrenic parent may not obtain an appropriate level of comforting caregiving compared to children with healthy parents and that such situations often had a detrimental impact on children's development (Masten, 1989).

An emerging field in the study of resilience is the neurobiological basis of resilience to stress. i.e., Neuropeptide Y and 5-dehydroepiandrosterone are thought to limit the stress response by reducing sympathetic nervous system activation and protecting the brain from the potentially harmful effects of chronically elevated cortisol levels respectively. While initial work on resilience in adolescence focused on personal qualities of individuals identified as resilient-such as self-esteem and autonomy-more recent literature conceptualises resilience as a socio-ecological phenomenon.

A variety of factors contribute to resilience. Many studies show that the primary factor in resilience is having carrying and supportive relationships within and outside the family. Several additional factors are associated with resilience including the capacity to make realistic plans and take steps to carry them out, a positive view of oneself and confidence in one's strengths and abilities, skills in communication and problem solving, and the capacity to manage strong feelings and impulses. Developing resilience is a personal journey. An approach to building resilience that works for one person might not work for another. Some variations may reflect cultural differences. Temperamental and constitutional disposition is considered as a major factor in resilience. Demographic information and resources (e.g., social support) are also used to predict resilience. Resilience is highly correlated to peer support and group cohesion. A number of self-help approaches to resilience-building have been developed, drawing mainly on the theory and practice of Cognitive Behavioural Therapy and Rational Emotive Behavioural Therapy. Thus, since resilience is a must-to-be fostered ability by each and every person, it has become a topic of interest these days (Robertson, 2012).

Statement of the problem

The problem statement addressed by this study is finding the impact of parenting styles on adolescent resilience.

Operational definitions

- *Adolescence*: A transitional stage in a person's life in which many physical, psychological, behavioural and emotional changes take place that include students of age range 13-18 years.
- *Parenting style*: The way adopted by the parents in bringing up their children that includes variable measures of responsiveness and control.
- *Authoritative parenting*: Type of parenting in which both responsiveness and control of the parent is rated high.
- *Authoritarian parenting*: Type of parenting in which control of the parent is rated high and responsiveness as low.
- *Permissive parenting*: Type of parenting in which responsiveness of the parent is rated high and control as low.
- *Uninvolved parenting*: Type of parenting in which both responsiveness and control of the parent is rated as low.
- *Resilience*: The ability of an individual to bounce back after undergoing any traumatic or stressful events in his/her life.

Need and significance

This study helps us to find the impact of parenting styles on the resilience among adolescents.

The adolescence is a stage or phase in one's development which is characterised by drastic changes physically, emotionally and mentally. Hence this developmental phase has a great impact in one's future life.

In the present world, problems related to adolescent children are on a rise. Hence being able to cope with those problems and bounce back as they were before is inevitable. Thus resilience plays a major role in shaping one's life by helping them out of hard conditions of life. Most of the problems of children can be handled by the parents and their way of parenting. This study aims to know whether parenting styles do have an important role in moulding their children in being resilient.

Review of literature

Parenting style

Valente, Moreira, and Sanchez (2017) conducted a study on 'Gradient of association between parenting styles and patterns of drug use in adolescents' in 6381 students. Data was collected through the Scale of Demandingness and Responsiveness (Lamborn, 1991) and an anonymous questionnaire completed by the participants and administered by researchers in the classroom. Latent class analysis was used. A gradient of inverse association was found between parenting styles and drug use.

Fili (2016) conducted a study on 'Parenting styles and aggressive behaviour among preschool going children' and included 310 children and their parents. Aggressive behaviour was measured by CBCL 1.5-5 (Rescorla, 2005) and parenting styles by Parenting styles and Dimensions and Questionnaire (Robinson, 2001). Pearson's Correlation, t-test and one way ANOVA were used. It was found that parenting styles have no relationship with preschool children's aggressive behaviour. Limitations- Demographic details were not collected and PSDQ measures only 3 parenting styles.

Buresova, Bartosova, and Cernak (2015) conducted a study on 'Connection between parenting styles and self-harm in adolescence' in 1466 adolescents who had previous experience of self-harm. The Self-Harm Behaviour Questionnaire (Gutierrez, 2001); the Self-Harm Inventory (Sansone & Wiedermann, 1995) and the Questionnaire for the Assessment of parenting styles (Cap, 1994) were used and correlation was found out. Results showed that self-harm occurred very frequently with weak and inconsistent parenting style. Limitations-Since the data is collected from the class, it might be somewhat biased by social desirability or stigmatisation.

Mehrinejad, Rajabimoghadam, and Tarsafi (2015) conducted a study on 'The relationship between parenting style and creativity and the predictability of creativity by Parenting styles' in 400 Iranian school students. Samples were given Abedi Creativity Questionnaire and Baumrind Parenting Styles Inventory (PSI). Pearson's correlation analyses and regression analyses were done. Results showed a positive correlation between authoritative parenting style and creativity of children.

Khodabakhsh, Kiani, and Ahmedbookani (2014) conducted a study on 'psychological well-being and parenting styles

as predictors of mental health among' in 278 high school students. Psychological well-being inventory and mental health parenting style questionnaire were used. Data was analysed by using Pearson's correlation coefficient and regression analyses. It was found that mental health is predictable by psychological well-being and parenting style, i.e., authoritative and permissive parenting styles showed significant positive relationship with mental health. Limitations-The study is conducted in students and thus can't be applied to larger researches.

Mensah and Kuranchie (2013) conducted a study on 'Influence of parenting styles on the social development of children' in 480 adolescents and 16 teachers. Data were collected by developing a questionnaire on Perceived Parenting Style and on interview schedule. Pearson Product Moment correlation was used. It was found that parenting style has influence on social development of children and also authoritative parenting led to child's prosocial behaviour and authoritarian parenting led to antisocial behaviour in children. Limitations-The study was based on self-report data.

Mirzaei and Kadivarzare (2013) conducted a study on 'Relationship between parenting style and hardiness' in 176 high school students. Personal Views Survey (PVS; Kobasa) and Parental Authority Questionnaire (PAQ) were used for data collection. Mean, Standard deviation and Cronbach's alpha and Pearson's Correlation test were used. Results showed that parenting styles play a significant role in hardiness. Limitations-Self reports were collected from the students.

Azimi, Vaziri, and Kashani (2012) conducted a study on 'Relationship between Maternal Parenting Style and Child's Aggressive behaviour' in 380 high school students. Parenting Styles Questionnaire and Aggressive Behaviour Record Form (Vaziri & Lotfi, 2009) were used. Correlation coefficient was found out. Result showed that mother's authoritarian parenting is positively correlated with adolescents' aggression and also indulgent parenting is negatively correlated with adolescents' aggression. Limitations-The Parenting Style Questionnaire involves only 3 parenting styles. Zakeri and Karimpour (2011) conducted a study on 'Parenting Styles and Self-esteem' in 540 University students. Steinberg's Parenting Styles Scale (2005) and Cooper smith's Self-esteem scale (CSEI) were used. Multiple regression analyses and t-test was done. Result showed that 'acceptance involvement' and 'psychological autonomy granting' styles were significant predictors of self-esteem.

Dwairy, Achoui, and Abouserie et al. (2006) conducted a study on 'Influence of parenting on family connectedness and adolescents' well-being' in 2893 samples (1712 females & 1181 males). Psychological State Scale (Hamuda & Imam, 1996) the Multi generational Scale and Parental Authority Questionnaire (Buri, 1991) were used. Results showed that adolescents raised according to inconsistent parenting scored lower in connectedness and higher in mental disorders than those raised according to controlling or flexible oriented parenting style. Limitations-The study results are formed based on adolescent's self-report, ethnic differences, etc.

Hawkins (2005) conducted a study on 'the influence of parenting styles on the development of moral judgement in college level adolescents' and a convenience sample of 210 students were collected. Parental Authority Questionnaire (Buri, 1988) and Defining Issues Test- 2 (Rest, 1999) were used. The data was analysed through regression analysis. Significant relationship

between the permissive parenting style and the development of moral judgement in the respondents were found. There was also a significant effect for parenting style on the development of moral judgement in the respondents. The scale used in this study, PAQ measures only 3 parenting styles.

Wittenborn (2002) conducted a study on 'The relation between parenting style and juvenile delinquency' in 63 high school students. Parental Authority Questionnaire (Buri, 1991) and Self-reported Delinquency Survey (Elliot & Ageton, 1980) were used. The data was saved online and was analysed using correlational procedures. Results indicate the significant inverse relation between authoritative parenting style and delinquency. Limitations-The samples are not an accurate representative of the population as there were only a few numbers of participants. Data was collected by self-report measures.

Resilience

Garde and Carmen et al. (2017) conducted a study on 'Relationship between resilience and self-regulation: A study of Spanish youth at risk of social exclusion' in 365 Spanish students agreed between 15 and 21. Connor Davison Resilience Scale (CD-RISC) and Short Self-Regulation Questionnaire (SSRQ) were employed. Correlation analyses and MANOVA were used to analyse the data. Results showed that learning from mistakes (self-regulation) was a significant predictor in coping, confidence and tolerance to negative situations (resilience). Limitations-The results are based on studies conducted only on a sample of Spanish students.

Bitsika, Sharpley, and Peters (2010) conducted a study on 'how is resilience associated with anxiety and depression?' in 401 Australian University students. Connor Davidson Resilience Scale and Zung Self-Rating Scale were employed. Multiple regression and correlation analyses were done. Results showed that participants with higher resilience scores had significantly lower anxiety and depression. Limitations-The samples were from a single university in Australia. Anxiety and depression were measured only at one point in time.

Sun and Donald (2007) conducted a study on 'Age and gender effects on resilience in children and adolescents' in 1109 males and 1163 female students. Resiliency Scale and Protective Factor Scale were used. ANOVA was done. Results showed that gender has a significant effect on resilience in the child. Limitations- Cultural differences can't be ruled out.

Parenting styles and resilience: Atighi, Atighi, and Atighi (2015) conducted a study on 'Predicting psychological resilience based on parenting styles in girl adolescents' in 167 female students (with mean age-14.43) and mothers (with mean age-42.13). Demographic questionnaire, Baumrind's Parenting Style Questionnaire and Connor Davidson Resilience Scale were employed. Correlation tests and multiple regression tests were used. Results show that the best parenting style for developing resiliency in adolescents is authoritative style with the ability of predicting resiliency of children. Limitations-The result being authoritative style as the best parenting style may vary when the same questionnaires are done in males. The results are formed based on the parenting style of mothers only.

Zakeri, Jowkar, and Razmjoei (2010) conducted a study on 'Parenting styles and resilience' in 350 university students. Steinberg's Parenting Styles Scale (2005) and Connor Davidson

Resilience Scale (CD-RISC) were employed. Multiple regression analyses and t-test were used to analyse the data. Results showed that acceptance-involvement style was a positive predictor of resilience and psychological autonomy granting and behavioural strictness-supervision styles didn't have a significant predicting power for resilience. Limitations- study does not mention the result of neglectful parenting style on resilience.

Objectives of the study

- To find the correlation between dimensions of parenting styles and resilience in adolescents.
- To determine whether there is a significant difference in resilience among boys and girls.
- To find out whether dimensions of parenting styles differ based on gender of the adolescents.
- To find out which among the parenting styles influence resilience the most.

Hypotheses of the study

- *H1*: There is a relationship between dimensions of parenting styles and resilience.
- *H2*: There is a significant difference on resilience among boys and girls.
- *H3*: There is a significant difference in the dimensions of parenting style among adolescent boys and girls.
- *H4*: Authoritative parenting style is associated with higher resilience.

Method

Participants

A total sample of 140 adolescents including 70 girls and 70 boys with an age range from 13-18 years was included. The sample was selected using purposive sampling procedure from various schools of Calicut district.

Instruments

Scale of Parenting Style (Gafoor & Kurukkan, 2014): Scale of parenting style is a 38 item scale developed for measuring perceived parenting styles based on the theories of Baumrind (1971) and dimensions of parenting style proposed by (Maccoby & Martin, 1983).

Scoring: Out of the 38 items, half of the items are responsiveness item and half of them are control item. There are no negative items. The scale is a five point scale with choices, 'very right', 'mostly right', 'sometimes right, sometimes wrong', 'mostly wrong' and 'very wrong' and the scores for these are 5 to 1 respectively. For scoring, scores for each parent separately and total score of control and that of responsiveness are found. A parent who is rated as high in both responsiveness and control (above the median) is categorised as authoritative parent. A parent who is rated as low in both responsiveness and control (below the median) is categorised as negligent parent. A parent who is rated as high in responsiveness and low in control is categorised as permissive parent and a parent who is rated as high in control and low in responsiveness is categorised as authoritarian parent. Thus parenting style of each parent is found out. The reliability of the scale was established by test-retest method and test-retest coefficient of reliability of responsiveness variable is 0.81

and that of control is 0.83. The scale has construct validity in relation to parenting style since this is based on Diana Baumrind's studies. Criterion related validity of the scale was found out by correlating the scores of this scale with scale of parenting style (Usha & Manjusha, 2006) in a sample of 30 students. The validity coefficient for responsiveness is 0.80 and that for control is 0.76.

Connor Davidson's Resilience Scale (Davidson, 2003): The CD-RISC is a 25 item self rating scale developed by Connor and Davidson (2003) to measure resilience. It uses a five point Likert response format ranging from zero (not true at all) to four (true nearly all the time). The total scores are added and then mean of all scores are found. Based on the mean, each score is classified into higher or lower resilience. In order to determine credibility of the scale, Cronbach's alpha was applied. The credibility factor was 0.83. Its validity coefficient was reported as 0.76. It was determined by finding correlation of each item with total score and then factor analysis was done.

Procedure

Initially, the participants were contacted in their respective classes and their willingness to participate in the study was obtained. After attaining consent, rapport was established and also the purpose, objective and usefulness of the study were explained. The subjects were administered Scale of parenting style and Connor-Davidson resilience scale (CD-RISC). All the subjects were assured that their responses would be kept confidential. They were told to choose the most appropriate choices according to themselves and also that there are no right or wrong answers. Thus data was collected and scoring was done.

Statistical analysis

Statistical tests are used in statistical hypothesis testing. There is a wide range of statistical tests. The decision of which statistical test to use depends on the research design, the distribution of the data, and the type of variable. In this study, the statistical tests used are

- Pearson's correlation Coefficient
- t-test
- Measures of central tendency such as Mean and Median

Results and discussion

The analysis of data is the key process in research process. The data collected has to be processed and analysed as outlined in the research plan. Statistical analysis helps the researcher to test the spelt out the hypothesis from which conclusions can be drawn. It breaks all complex parts into simpler ones for the purpose of interpretation. The detailed analysis of data with testing of hypothesis is presented in this chapter.

Table 4.1: The correlation between dimensions of parenting styles and resilience

Variables	Parental responsiveness	Parental control
Resilience	0.531**	0.610**

*p<0.05, **p<0.01

The table includes the correlation values of dimensions of parenting styles and resilience. The correlation values of resilience on different dimensions of parenting styles: parental control and parental responsiveness are 0.610** and 0.531**.

The values show a significant positive correlation between the variables. Thus H1 is accepted. This indicates that increase in responsiveness and control of the parents lead to an increased resiliency in adolescents. Being a responsive parent includes providing proper care and love, helping the child during difficulties, correcting the child's mistakes, being concerned about their studies growth and relationships, and so on. Another factor that the parents should work on is control and discipline. Discipline is necessary to teach a child how to live comfortably in a society, but it should not be confused with punishment. Being responsive and controlling has great effect on the child being able to handle himself/herself when there are problems in his/her future.

Zakeri, Jowkar, and Razmjoei (2010) also studied the relationship between parenting styles and resilience. Their results showed that there was a positive and significant correlation between acceptance involvement style and resilience.

Table 4.2: The t test value of resilience in boys and girls

Variable \ Samples		Boys	Girls
Resilience	Mean	65.910	70.470
	S.D	11.950	13.390
	t value	-2.123	-2.123
	Sig. diff	0.035	0.036

The table shows the t test values of resilience in boys and girls. The mean value of resilience in boys and girls are 65.91 and 70.47 respectively. The respective standard deviations were 11.95 and 13.39 respectively. The t value of resilience for boys and girls is -2.123 and the significant difference is 0.035 and 0.036 respectively.

The table shows that there is a significant difference in resilience among boys and girls. Thus H2 is accepted. By analysing the mean value, it can be said that girls are more resilient than boys. This may be because girls cope with daily stressors by seeking social support and utilising social resources, in contrast to boys. For students who experience a transition during their adolescent phase, communication with adults in families and at schools and in the community and expressing opinions and feelings freely becomes an important element of coping with stress and negative life events. Since these are not seen much in boys when compared to girls, resilience is seen higher in girls. Sun and Donald (2007) studied the effect of age and gender in adolescents and concluded with the same result that girls are seen more resilient than boys.

Table 4.3: The t test value of dimensions of parenting style based on gender of the adolescents

Variables \ Samples		Boys	Girls
Parental control	Mean	141.700	157.020
	S.D	21.570	16.510
	t value	-4.720	-4.720
	Sig. diff	0.000	0.000
Parental responsiveness	Mean	141.170	155.550
	S.D	18.960	15.660
	t value	-4.893	-4.893
	Sig. diff	0.000	0.000

The table contains the t values of dimensions of parenting style in boys and girls. The mean values of dimensions: parental control and

parental responsiveness in boys are 141.7 and 141.17 respectively and 157.02 and 155.55 in girls respectively. The respective S.D values for parental control and parental responsiveness in boys are 21.57 and 18.96 and that in girls are 16.51 and 15.66 respectively. The t value found for parental control is -4.72 and for parental responsiveness is -4.893 and the significant difference is 0.000.

The table shows that there is a significant difference in the dimensions of parenting style based on gender. Thus H3 is accepted. By analysing the mean values, it can be said that the parents are seen highly responsive and controlling in the case of girls than when compared to that of boys. Girls are more likely to share their concerning matters, personal issues and communicate with their parents to a higher extent than boys. Hence the parents are more responsive to the adolescent girls than boys. When it comes to the matter of parental control, it can be said that stereotypical beliefs that girls are weaker and more vulnerable than boys to the threats of the outside world may result in high parental control towards girls.

Table 4.4: The average resilience obtained in each parenting style

Parenting styles	Average resilience
Authoritative	75.428
Authoritarian	69.857
Permissive	63.733
Neglectful	61.618

The table shows the average resilience obtained for each parenting styles. Average resilience score for authoritative, authoritarian, permissive, and neglectful parenting styles are 75.428, 69.857, 63.733 and 61.618 respectively. This indicates that authoritative parenting highly influences resilience in adolescents when compared to other parenting styles. Hence H4 is accepted. Authoritative parenting is the type of parenting in which parental responsiveness and parental control are rated high. In this type of parenting, parents are aware of the child's interests and activities, provide warmth and support, as well as control and discipline them when needed and this helps as a protective factor that increase the ability to overcome negative life events. These parents know well how to behave suitably toward children and make a close relationship with children and thus help children to be hard in stressful conditions of life. Zakeri, Jowkar, Razmjoei (2010) studied the relationship between parenting styles and resilience. Their results also showed that acceptance involvement style or authoritative parenting was a significant positive predictor of resilience.

Conclusion

The objective of the study was to find the relationship and impact of parenting styles on resilience in adolescents. The major findings of this study are the following:

- There is a significant relationship between dimensions of parenting styles and resilience.
- There is a significant difference in resilience among boys and girls.
- Based on gender, resilience is seen higher in girls.
- There is a significant difference in the dimensions of parenting style among adolescent boys and girls.
- Parents are seen more responsive towards and controlling of girls than boys.

- Authoritative parenting style is associated with higher resilience.

Scope of the study

Based on the findings of this study, parents have a major role in bringing up the child and development of the ability of being resilient in hard conditions of life. Therefore, parents should be educated on the need to provide the right parenting care for their adolescents. When doing further research on this topic, following suggestions have to be considered:

- The sample size should be made large.
- Future research should be conducted at more diverse geographical areas.
- It would be helpful to get data from several sources, including other family members.
- The results would be more reliable if there is self-identified parenting style and child-rated parenting style.
- Instead of just using two dimensions of parenting styles such as parental responsiveness and control, it would be better to include more specific dimensions such as warmth and support, reasoning, punitive strategies, indulgence etc. This would help for the investigation of how specific parenting behaviours influence the child's development.

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The impact of perception of consistency and inconsistency in parenting style on pro-social motives of adolescents

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Adolescence is the most dynamic and eventful period of human development. During this crucial period of life, adolescents encounter challenges in life and constantly adapting to the relationship dynamics with friends, family, school and society. There is tendency of adolescents to engage in antisocial or pro-social behaviour. Adolescents' relationship with parents and guardian significantly influence their antisocial and prosocial behavior. Pro-social behavior is defined as a behavior that is primarily aimed at benefiting others. Some pro-social behaviour is extrinsically motivated whereas some are intrinsically motivated. The present study investigated the nature of prosocial behaviour among adolescents and impact of consistency and inconsistency of parenting style on prosocial behaviour. A group of 610 adolescents (310 boys and 300 girls) aged between 16–18 years (mean = 17.07 and standard deviation = 1.02) was selected for the present study. Pro-social Motivation Questionnaire and Parental Authority Questionnaire were used to measure pro-social motive and parenting style, respectively. The results indicate that adolescents generally show higher level of intrinsic pro-social motive. Adolescent girls prefer to display internalised and empathetic pro-social motives whereas adolescent boys tend to gain others' approval by displaying heroic activities. Consistency in parenting style facilitates intrinsic pro-social motive only when both parents are authoritative in nature. The result interestingly reveals that inconsistent parenting style is not always bad. Authoritative and permissive dyad facilitates intrinsic pro-social motive among adolescents. Implications for parental socialisation in families and pro-social motive among adolescents are discussed.

Keywords: Adolescents, Consistent parenting style, Extrinsic Pro-social Motive, Inconsistent parenting style, Intrinsic Pro-social motive.

Для цитаты:

Karmakar R. The impact of perception of consistency and inconsistency in parenting style on pro-social motives of adolescents. *Sotsial'naya psikhologiya i obshchestvo [Social Psychology and Society]*, 2017. Vol. 8, no. 2, pp. 101–115. (In Russ., abstr. in Engl.). doi:10.17759/sps.2017080207

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INTRODUCTION

Adolescence is the formative stage of life for establishing values and cultural orientations (Erikson, 1968; Rohan, Zanna, 1996). Alper (Vander, 1987) suggested that through cognitive moral development, adolescents build up internalized standards for behaviour. These internalized standards of behaviour guide them to act in certain ways. Researchers believe that socialisation and relationship with parents significantly influence in creating constructive and positive behaviors among adolescents (Barnes, Hoffman, Welte, 2006). Pro-social behaviour is one of them. Pro-social behavior is defined as a behavior that is primarily aimed at benefiting others (Carlo, Ronadall, 2002; Eisenberg, Fabes, 1998). Some pro-social behaviour is extrinsically motivated whereas some are intrinsically motivated. Extrinsic pro-social behaviour is motivated by a desire to gain the approval and respect of others and increase one's self-worth in the eye's of others. Intrinsic pro-social behaviour is motivated by empathy and internalized norms/principles consistent with helping others. Boehnke, Silbereisen, Eisenberg, Reykowski, and Palmonari (1989) identified six motives, which operate in pro-social behavior. These six motives are hedonism, conformity, self-interest, other's-orientation, task-orientation and empathy. From the above motives, task-oriented, other's-oriented, and empathy motives show intrinsic motives, and the rest indicate extrinsic motives.

Bronfenbrenner (1994) emphasized the importance of various levels of environment that influence individual growth and behavior. Mainly, he focused on micro system that influences children largely. Micro system includes the immediate surroundings of the child such as family. Parents as a primary socialisation agents are critical in the

development of pro-social predisposition among children and adolescents. Socialisation theorists witnessed the way in which parents play an important role in promoting and fostering pro-social behaviors among children and adolescents (Bandura, 1986; Hoffman, 2000; Staub, 1979). Researchers determined that the styles used by parents in rearing children have an effect on the children's development of pro-social behavior (Lam, 2012).

Developmental scholars have built up quite large knowledge base concerning two major dimensions of parenting styles: responsiveness and demandingness (Barber, Stolz, Olsen, 2005; Baumrind, 1991). Responsiveness can be defined as the presence of positive affects, and support in parent-child relationships. Demandingness refers to the degree of strictness, behavioral rules, and expectations imposed on children by parents. The combination of these two dimensions results in the formation of four parenting styles: authoritarian (high on demandingness and low on responsiveness), authoritative (high on both responsiveness and demandingness), permissiveness (high on responsiveness and low on demandingness) and neglectful (low on both responsiveness and demandingness).

There is clear agreement as to the importance of maternal warmth on the adolescent's overall development. A positive relation between maternal warmth/ support or sensitivity and children's and adolescents' altruistic and pro-social responding was obtained (Asbury, Dunn, Pike, Plomin, 2003; Bryant, Crockenberg, 1980; Deater-Deckard, Dunn, O'Connor, Davies, Golding, 2001). Researchers have indicated negative relationship between punitive techniques of discipline used by parents and children's altruistic / pro-social behaviour (Asbury, Dunn, Pike, Plomin, 2003; Bar-Tal, Nadler,

Blechman, 1980; Dlugokinski, Firestone, 1974; Krevans, Gibbs, 1996). Research in the field of parenting style has often focused on the effect of the mother's style, or has considered the average score from both parents. In the first case, it is assumed that the father's style is either similar to the mother's; in the second case, the attitudes of mothers and fathers are diluted into the single score. Studies that do consider both parents (Mestre, Samper, Frías, 2004; McNally, Eisenberg, Harris, 1991) have shown differences in how the child qualifies his or her relationship with the father and with the mother. In light of these differences, identifying inconsistencies in parenting styles has arisen as a complementary line of research in this area (Dwairy, 2008; Lengua, 2006). Winsler, Madigan, and Aquilino (2005) indicated that inter-parental agreement on child-rearing practices is becoming more important in the research on child development. Maccoby and Martin (1983) confirmed that applying an authoritative parenting style results in positive outcomes in children (Winsler et al., 2005). Simons and Conger (2007) indicated that if both parents develop authoritative style, its beneficial effects are multiplied. By contrast, some authors have investigated whether the presence of only one authoritative parent can have beneficial effects on the children. If this is so, there would be a buffering effect when at least one of the parents shows an authoritative style (Fletcher, Steinberg, Sellers, 1999; Simons, Conger, 2007). The benefit of at least one parent with an authoritative style is another aspect that converges with and qualifies the analysis of consistency and inconsistency between the two parenting styles.

In this line, Ryan, Martin and Brooks-Gunn (2006) suggested that there is a benefit in the cognitive development of small

children when both parents, or at least one of them, displays a support-based style. Oliva, Parra, and Arranz (2008) affirmed that higher rates of psychosocial adjustment in adolescents are seen when both parents are perceived as authoritative, followed by the group where at least one of the parents displays authoritative style. According to these authors, even though disciplinary inconsistency is considered to be a source of negative repercussions on children, the benefits of having at least one authoritative parent seem to exceed the negative effects that arise from lack of agreement. In addition to this general confirmation, certain qualifying statements have been made. For example, Hoeve, Dubas, Gerris, Van der Laan and Smeenk (2011) showed that the presence of at least one authoritative parent diminishes the frequency of the adolescent child becoming involved in delinquent acts, regardless of the other parent's style. In addition, when one parent exhibits a neglectful style, the child's level of delinquency depends on the style exhibited by the other parent. It seems logical to think that the effect of having one authoritative parent would not be equal in all the cases; instead, it would depend on the parenting style of the other parent. Consequently, it seems clear that the parenting styles of both parents must be investigated (Torrente, Vazsonyi, 2008) in order to understand whether consistency always facilitates child's development or sometimes inconsistency in parenting style can compensate or accentuate child's development.

Research in this sphere seeks to analyze possible inconsistencies between the parenting styles of mother and father, putting forward a general hypothesis that, consistency in parenting style is always beneficial regardless of the predominant style and inconsistencies will be harmful (Berkien,

Louwerse, Verhulst, Van der Ende, 2012; Lengua, Kovacs, 2005; Tildesley, Andrews, 2008). Nonetheless, the effect of parenting style dimension specific consistency and inconsistency on adolescent's pro-social motive has not yet explored. Exploring dimension specific consistency as well as inconsistency in parenting style is equally important especially for adolescents because it not only provides us an insight on differential effect on dimension specific consistency but also helps us to get an overview on how dimension specific inconsistency works. Inconsistency in parenting style is inevitable and unavoidable. So it is utmost important to know the effect of dimension specific inconsistency in parenting style.

This study sets two fold objectives. The first objective is to examine the nature of self-reported perception of pro-social motives of adolescents. The second objective is to analyze whether consistency (parenting styles concur) or inconsistency (parenting styles differ) in perceived parenting styles influence the pro-social motive of adolescents.

METHOD

Participants:

The sample was composed of 610 adolescents (310 boys and 300 girls) aged between 16-18 years (mean = 17.07 and standard deviation = 1.02). Adolescents were drawn from nine different schools (five coeducation, two boys' and two girls') of Kolkata of West Bengal in India. A stratified random sampling method was used for the selection of boys and girls. Simple random sampling without replacement (SRSWOR) method was used for selecting students from each stratum (boys and girls). Most of the students were from middle-socio economic status.

Measures:

The following measures were used in this study:

- **Personal Data sheet:** Certain personal information about respondents included in the sample of research is useful and important for research. Here also, for collecting such important information, personal data sheet was prepared. With the help of this personal data sheet, the information about age, gender, total monthly income of family and nature of the school were collected.

- **Pro-social Motivation Questionnaire (PSMQ):** — This was originally developed by Silberstein, Boehnke, and Reykowsky (1986). It consists of 24 story situations in which there is an opportunity for pro-social action. In half of these situations, the subjects are described as having helped, in the other 12 scenarios, the subjects refrained from helping. In this study, the researcher considered the 12 scenarios, which are leading to helping. Subjects rated each scenario on a five-point scale ranging from "not at all = 0; probably not = 1; perhaps = 2; most probably = 3; and quite surely = 4". The ratings of subjects on all the 12 scenarios were added for each of the six motives (or scales) and hence scores were recorded for each of the following sub-scales:

- ♦ Hedonism
- ♦ Self-Orientation
- ♦ Conformity
- ♦ Task- orientation
- ♦ Other's-orientation
- ♦ Empathy

Thus, the score of one sub scale ranges from 0 to 48. However, the values of the subscale could not be added together to get the extrinsic (hedonism, self-orientation and conformity) and the intrinsic (task-oriented, other's-oriented, and empathy) pro-social motive score of a subject, because

all these subclass have not equal strengths to predict the intrinsic or extrinsic motives. The Cronbach's alphas for hedonism, self-orientation, conformity, task-orientation, other's-orientation and empathy motive subscales for the present study were calculated and found to be 0.73, 0.77, 0.74, 0.75, 0.78 and 0.75, respectively.

• **Parental Authority Questionnaire (PAQ):** It was developed by Lemar (2005) to measure the parenting style as perceived by adolescents. The scale was based on the scale developed by Buri (1991), which adopted three parenting styles of Baumrind (1966). The PAQ scale consists of 21 items. There are four response options for each question. The Cronbach's alphas for authoritarian, authoritative and permissive parenting style subscales for the present study were calculated and were found to be 0.75, 0.72 and 0.76, respectively.

RESULTS

To study the first objective, means and standard deviations of different dimensions of pro-social motive of adolescents were calculated. The means and standard deviations

of pro-social motive subscales are presented in Table 1.

Table 1 displays that adolescents reported empathy as commonly observed type of pro-social motive followed by other's-oriented, task-oriented, self-interest, conformity and hedonistic motive.

Independent sample t-test was conducted to examine gender differences in different types of pro-social motive and is presented in Table 2.

Table 2 depicts that there was statistically significant mean difference in conformity ($t = 5.70, p < 0.05$), other's-oriented ($t = 4.74, p < 0.05$) and empathy ($t = 3.73, p < 0.05$) motive between boys and girls. Girls scored higher on other's-oriented and empathy motive of pro-social behavior than boys. In contrast, boys scored significantly higher on conformity than girls.

Independent sample t-tests were calculated to analyze the difference in different dimensions of pro-social motives with respect to the perception of parenting style consistency (father and mother exhibit the same parenting style) and inconsistency (father and mother exhibit different parenting styles) and the results are presented in Table 3.

Table 1

Descriptive statistics of Pro-social motives of adolescents

Dimensions	N	Minimum	Maximum	Mean	Standard Deviation (SD)
Hedonistic	610	0	48	18.62	8.51
Conformity	610	0	48	22.31	9.92
Self-interest	610	0	48	22.42	7.54
Task-oriented	610	0	48	28.36	7.34
Other's-oriented	610	0	48	35.76	8.45
Empathy	610	0	48	38.33	9.01

Table 2
Mean, SD and t-value of different dimensions
of pro-social motive by gender

Dimensions	Gender	N	Mean	SD	t-value
Hedonistic	Boys	310	18.62	9.51	1.31
	Girls	300	17.72	7.31	
Conformity	Boys	310	25.65	9.92	5.70**
	Girls	300	21.31	8.85	
Self-interest	Boys	310	24.42	9.54	1.25
	Girls	300	23.54	7.71	
Task-oriented	Boys	310	28.74	8.86	0.40
	Girls	300	29.01	7.91	
Other's-oriented	Boys	310	33.54	8.91	4.74**
	Girls	300	36.71	7.53	
Empathy	Boys	310	36.85	7.27	3.73**
	Girls	300	39.01	7.01	

Note: ** Significant at 0.01 level

Table 3
Mean, SDs (in parentheses) and t-values in different dimensions
of pro-social motive by consistent and inconsistent parenting style

Dimensions of pro-social motive	Perceived parenting style				t- value
	Consistent parenting style (N= 406)		Inconsistent parenting style (N= 204)		
	Mean	SD	Mean	SD	
Hedonistic	18.34	9.42	19.56	9.65	1.49
Conformity	22.00	10.49	23.71	10.78	1.88
Self-interest	21.38	11.76	22.73	9.98	1.40
Task-oriented	28.68	10.01	27.01	10.72	1.89
Other's-oriented	33.61	9.71	31.96	11.58	1.85
Empathy	38.13	11.92	36.82	12.76	1.25

The differences in different dimensions of pro-social motive observed between consistent and inconsistent situations, however, none of these differences was found to be significant. The closer scrutiny reveals that adolescents who perceived a consistent parenting style between mothers and fathers showed a bit higher levels of intrinsic pro-social motives than adolescents who attributed inconsistent parenting styles to parents. The opposite trend is evident in case of extrinsic pro-social motives.

In the Table 3, parenting style consistency was measured if father and mother exhibit the same parenting style, that means all authoritarian –authoritarian dyad, authoritative – authoritative dyad and permissive – permissive dyad are included in the consistency category. Next, we examine the difference in different dimensions of pro-social motives due to perception of parental style consistency with respect to a specific

parenting style. Thus, we determine the differential effect of authoritarian – authoritarian dyad, authoritative – authoritative dyad, and permissive – permissive dyad on different dimensions of pro-social motive instead of combining consistency across all parenting styles and the results are presented in Table 4.

Table 4 indicates statistically significant differences in every dimension of pro-social motive as a function of consistency in a specific dimension of parenting style. A post-hoc comparisons using Tukey's HSD (honest significant difference) test revealed that adolescents who perceived consistent authoritarian style of parents scored significantly higher on extrinsic pro-social motive dimension than adolescents raised in any other family type. Adolescents from consistent authoritative families scored significantly higher on intrinsic pro-social motives than adolescents from consistent permissive and authoritarian families.

Table 4

Mean, SDs (in parentheses) and F-values in different dimensions of pro-social motive in families with consistent parenting style

Dimensions of pro-social motive	Perceived parenting style			F-Value
	AN-AN dyad (N=115)	AV-AV dyad (N=191)	PM-PM dyad (N=100)	
Hedonistic	28.87 (5.52) ^a	17.38 (10.98) ^b	20.03 (9.78) ^b	54.44**
Conformity	27.72 (7.31) ^a	17.76 (10.72) ^b	18.71 (9.87) ^b	41.34**
Self-interest	26.94 (5.45) ^a	18.01 (9.87) ^b	18.53 (10.80) ^b	38.14**
Task-oriented	19.45 (8.71) ^a	24.32 (10.62) ^b	21.26 (10.22) ^a	9.06**
Other's-oriented	19.13 (7.41) ^a	32.54 (10.96) ^b	26.47 (9.30) ^c	69.52**
Empathy	20.17 (8.67) ^a	40.34 (10.81) ^b	30.02 (9.56) ^c	150.63**

Note. AN-AN = Authoritarian- Authoritarian, AV-AV= Authoritative-Authoritative and PM-PM= Permissive-Permissive

** Significant at 0.01 level

Differences are statistically significant when the superscripts differ from each other

Table 5

Mean, SDs (in parentheses) and F-values in different dimensions of pro-social motive in families with inconsistent parenting style

Dimensions of pro-social motive	Perceived parenting style						F-values
	AN- AV (N=30)	AV-AN (N=32)	AV-PM (N=40)	PM-AV (N=35)	AN-PM (N=31)	PM-AN (N=36)	
Hedonistic	28.87 ^a (10.91)	27.32 ^a (9.33)	18.91 ^b (9.67)	19.55 ^b (8.96)	28.76 ^a (10.44)	27.28 ^a (9.63)	7.82**
Conformity	27.44 ^a (9.31)	28.01 ^a (11.27)	18.26 ^b (7.29)	19.71 ^b (9.10)	27.90 ^a (9.11)	28.54 ^a (10.26)	8.94**
Self-interest	28.35 ^a (9.01)	27.82 ^a (9.38)	17.56 ^b (9.32)	18.66 ^b (10.21)	28.38 ^a (9.12)	27.76 ^a (8.96)	10.89**
Task-oriented	18.57 ^a (10.21)	19.02 ^a (8.02)	30.01 ^b (9.22)	29.45 ^b (9.11)	19.31 ^a (9.71)	19.43 ^a (9.56)	12.44**
Other's-oriented	18.76 ^a (8.90)	19.65 ^a (9.65)	33.76 ^b (9.01)	34.81 ^b (9.18)	19.00 ^a (8.54)	19.45 ^a (9.21)	25.96**
Empathy	18.44 ^a (9.08)	19.93 ^a (8.27)	38.72 ^b (8.38)	39.54 ^b (9.10)	17.90 ^a (8.21)	18.02 ^a (9.17)	52.97**

Note. AN= Authoritarian, AV= Authoritative and PM= Permissive

** Significant at 0.01 level

Differences are statistically significant when the superscripts differ from each other

In order to analyze the differences in different dimensions of pro-social motive seen in different combination of inconsistent parenting styles, a final analysis was performed in which all possible combinations of inconsistent parenting style were included. There were six levels of this variable, indicated by the perceived maternal style followed by perceived paternal style. The results are presented in Table 5.

Analysis of variance (ANOVA) in Table 5 depicts that there are statistically significant differences in the dimensions of pro-social motive of adolescents who perceived inconsistent parenting style. A post-hoc comparisons using Tukey HSD test suggested that differences were statistically significant among adolescents from homes

where the combination of parenting style is authoritative and permissive compared to adolescents raised in either permissive-authoritarian or authoritarian-authoritative parents. Adolescents raised in families where either mothers are authoritative and fathers are permissive or vice versa, scored significantly higher on all dimensions of intrinsic pro-social motive than adolescents belong to any other family type. The reverse trend is evident in case of all extrinsic dimensions pro-social motive.

DISCUSSION

The present study reveals the nature of pro-social motive of adolescents. Findings

suggest that intrinsic pro-social motive such as empathy, other's-orientation and task orientation are mostly common among adolescents compared to extrinsic pro-social motive such as hedonism, conformity and self-orientation. This result is supported by the findings of Boehnke et al. (1989) which stated intrinsic (e.g., internalized or other-oriented, empathy) motives for pro-social behavior appear to be relatively high during adolescence. The possible explanation for this is that adolescents live up to the internalized principles of pro-social motive rather than simply displaying pro-social behaviour for gaining approval and compliance with external authority.

The study shows that adolescent girls are significantly higher on empathy and other's-orientation dimension than boys. This finding is partially favoured by previous researches (Carlo & Rondall, 2002; Eisenberg, Carlo, Murphy, & Van Court, 1995) which stated that in early adolescence, girls sometimes expressed higher level of empathy and other's-oriented mode of pro-social motive than boys. In countries like India, girls are encouraged to engage more in household activities to serve other members of the family, share their belongings with others and empathize them when necessary more often than boys. These may be a factor for girls for engaging in voluntary helping act motivated by concern for the need and welfare of others (i.e., altruism and empathy). Adolescent boys are found to be significantly higher on conformity compared to girls. This finding is in a similar direction of the results of Carlo, Roesch, and Koller (1999) which stated that adolescent boys are more concerned with gaining conformity while helping others and performing some heroic actions.

The second objective of this study was to analyze whether consistency or inconsis-

tency in perceived parenting styles influence the pro-social motive of adolescents in the most pertinent settings of their life. Intriguingly, the overall consistency (irrespective of a particular parenting style) and inconsistency does not create any significant differences in different dimensions of pro-social motive. This may be due to the fact that the consistency category includes the combination of same parenting style which may include two authoritarian parents or two permissive parents or two authoritative parents. The consistency category which includes combination of two authoritarian parents may have negative impact on pro-social motive, while the inconsistency category which includes situations where one parent has authoritative style may act as a possible buffer in developing intrinsic pro-social motive among adolescents.

After fine-tuning the consistency and inconsistency category with respect to a particular dimension of parenting style, results confirmed that the level of intrinsic pro-social motives among adolescents is significantly higher when both parents are perceived as authoritative followed by permissive and authoritarian, though there was no significant effect of overall consistency and inconsistency in parenting style (irrespective of specific dimension) on different dimensions of pro-social motive. The possible reason for this is that gentle discipline, and mutually responsive relationship between parents and adolescents helps in developing early conscience internalisation (Fowles, Kochanska, 2000; Kochanska, 1991, 1995, 1997; Kochanska, Aksan, 1995; Kochanska, Aksan, Joy, 2007; Kochanska, Aksan, Knaack, Rhines, 2004; Kochanska, Coy, Murray, 2001; Kochanska, DeVet, Goldman, Murray, Putnam, 1994; Kochanska, Forman, Aksan, Dunbar, 2005; Ko-

chanska, Gross, Mei-Hua, Nichols, 2002; Kochanska, Murray, 2000) and make them feel safe and secure in a variety of situations. This in turn permits them to independently act on their own personal beliefs and to be more concerned about the need of others without expecting any benefit in turn. This positive effect of authoritative parenting style on pro-social motive becomes more prominent when both parents are authoritative. On the other hand, authoritarian parents constrain their children's independence and want their children to go after strict parental rules and commands without asking any questions and consequently this parenting style encourages conformity, approval seeking and pleasure seeking attitude among adolescents. Permissive parents are more responsive and demand very few thus, sometimes creating difficulties among adolescents in controlling their emotions and impulses which in turn make them little bit less concerned about others' needs. The effect of permissive parenting style is less detrimental compared to authoritarian as early adolescents seek autonomy and prefer to have fewer restrictions on them. Though too much of freedom from parental control may confuse them as they are not enough mature to interpret the independence.

The results have also shown that inconsistency is not always bad. Authoritative-permissive dyad tends to yield significantly higher level of intrinsic pro-social motive compared to any other dyads. This may be due to the fact that authoritative-permissive dyad acts as a complementary to each other. That means one authoritative parent reinforces socially mature behaviour as well as individual needs of adolescents whereas other permissive parent provides freedom to support the need for independence among adolescents. Other dyads namely, authoritarian-authoritative and authori-

tarian-permissive were found to produce significantly higher levels of extrinsic pro-social motive. Authoritarian parenting style yields insecurity and compliance to authority by curbing the individual independence among adolescents. The detrimental effect of having one authoritarian parent is not being compensated by the effect of having one authoritative parenting style. Authoritarian-permissive styles are completely different to each other and thereby creating a lot of confusion and insecurity among adolescents. The study reveals that in case of inconsistent parenting style, it is preferable that at least one parent develops an authoritative style while the other displays permissiveness.

CONCLUSION

The present study determines the nature of pro-social motive among adolescents. The study also intends to throw some light on the effect of consistency or inconsistency in perceived parenting styles on pro-social motive of adolescents. The results indicate that adolescents generally show higher level of intrinsic pro-social motive. Adolescent girls prefer to display internalised and empathetic pro-social motives whereas adolescent boys tend to be more concerned in gaining others' approval by displaying heroic activities. Intriguingly, the study reveals the effect of overall consistency in the parenting styles is not always beneficial over inconsistency. Consistency in parenting style facilitates intrinsic pro-social motive only when both parents are authoritative in nature. The result reveals that inconsistent parenting style is not always bad. Adolescents either having authoritative mother and permissive father or vice versa tend to be high on intrinsic pro-social motive com-

pared to any other dyads. The study also confirms that it is not enough for one of the parents to exercise an authoritative style; in addition, the type of style exercised by the other parent makes a big difference.

In spite of some interesting findings on the impact of consistency and inconsistency in parenting style on pro-social motive of adolescents, there are several limitations of the present study. First limitation is that the study cannot draw causal inferences from the results as it is cross-sectional in nature. The second limitation is that responses are based on self-report. Future research should replicate these findings using parental reports as well as other methodologies (e.g., participant observations). The third limitation of this study lies in the location specificity. Further study based on samples

selected from wider regional/cultural backgrounds such as traditional rural families or urban middle class families would be useful in providing insight into cultural variation in consistency and inconsistency in parenting and its impact on pro-social motive as a function of modernisation.

Despite these limitations, findings have a number of implications for socialisation and pro-social motive among adolescents. The present findings regarding consistency on authoritative parenting style provide support to the evidence that parents and instructors in academic sector need to provide conducive and supportive environment to adolescents in order to improve the quality of interpersonal relationship and enhance the empathetic motive among adolescents.

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Зависимость просоциальной мотивации подростков от восприятия ими последовательности родительского воспитания

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В переходном возрасте подростки неизменно сталкиваются с вызовами постоянно меняющегося мира, с необходимостью приспосабливаться к переменам в отношениях с друзьями, семьей, школой и обществом. Подростки начинают проявлять либо антисоциальное, либо просоциальное поведение, на что влияют их отношения с родителями и другими взрослыми. Просоциальное поведение — это поведение, направленное прежде всего на помощь другим людям. Мотивация такого поведения может быть как внутренней, так и внешней. В настоящем исследовании проанализированы природа просоциального поведения подростков, а также влияние на него меры последовательности стиля родительского воспитания. В исследовании приняли участие 610 молодых людей (310 юношей и 300 девушек) в возрасте от 16 до 18 лет (средний возраст — 17,07 лет, стандартное отклонение — 1,02 года). Были использованы опросник просоциальной мотивации (Pro-social Motivation Questionnaire) и опросник родительского авторитета (Parental Authority Questionnaire). Результаты выявили у подростков более высокий уровень внутренней просоциальной мотивации в сравнении с внешней. Девочки-подростки чаще проявляют интернализованные и эмпатические просоциальные мотивы, тогда как мальчики-подростки стараются выглядеть в глазах других героями, чтобы получить одобрение. Устойчивость стиля родительского воспитания способствует формированию внутренних просоциальных мотивов только в том случае, если оба родителя оказываются на самом деле авторитетными в глазах подростков. Интересно, что согласно полученным результатам, непоследовательный стиль воспитания не всегда оказывается плохим. Сочетание авторитета и снисходительности родителей способствует формированию у подростков внутренней просоциальной мотивации. Обсуждается связь между путями социализации ребенка в семье и развитием у него просоциальных мотивов.

Ключевые слова: подростки, устойчивость стиля родительского воспитания, последовательность стиля родительского воспитания, непоследовательность стиля родительского воспитания, внутренняя просоциальная мотивация, внешняя просоциальная мотивация.

For citation:

Кармакар Р. Зависимость просоциальной мотивации подростков от восприятия ими последовательности родительского воспитания // Социальная психология и общество. 2017. Т. 8. № 2. С. 101–115. doi:10.17759/sps.2017080207

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Parenting styles and academic achievement of young adolescents: A systematic literature review

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Abstract Literature accords the importance of parenting style and their impact on young adolescent's behavior. There are many factors that affect the academic performance of children and parenting styles is one of the significant factors of academic performance. But there is lack of research that integrates and systemizes the relationship between parenting styles and academic performance especially in Pakistan. The unit of analysis of this research was studies that were previously conducted on parenting styles and academic performance of young children. Main focus of search was to availability of data that is most recent and relevant, so this research paper focuses on 39 studies. Articles from seven databases (Google Scholar, Science Direct, Taylor and Francis Journals, Web of Science, JSTOR, Springer link and SAGE Journals) were identified related to the topic using a pre-established set of terms that included both parenting styles and academic performance. All the studies highlighted that parenting styles affect the academic achievement of adolescents. It was analyzed that authoritative parenting style is the most effective parenting style in enhancing the academic performance of young children. More research is needed on parenting styles in different continents to have an understanding of the cultural effect of parenting styles on the academic performance of adolescents. Implications for parents and policy makers are discussed.

Keywords Parenting styles · Academic performance · Adolescents · Systematic literature review · Culture

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1 Introduction

An effective education system helps boost the development of a country, so the importance of an education system cannot be denied. Countries should devise and implement policies so as to increase the education level of individualism a way that helps them play an effective role in the development of the country. Depending upon the educational policies, the academic achievement of students may be low or high as these policies may be favorable or unfavorable for effective learning. The main objective of this review was to integrate studies on the relationship of parenting styles and academic performance. The review process was comprehensive and systematic. Articles were first located. These articles were then reviewed by trained researchers. In the last step, these articles were coded.

It has been well known that students with high academic achievement are important assets to any country, while low academic achievement may cause negative consequences such as stress, hopelessness, delinquency, psychopathology, and substance abuse (Fateme et al. 2006). Factors that influence the academic achievement of adolescents should be addressed to improve their academic achievement. Among the several factors that affect academic achievement, parenting style is one of the most important. Because of the relationship between parenting style and academic achievement scholars have highlighted the various aspects of parenting styles that help in boosting the academic outcomes of adolescents. They explored various aspects of parenting styles which help in the development of young children, especially the school related outcomes. Being role models, parents play a significant role in the child development. Family environment is also one of the factors in children's cognitive, emotional, social and behavioral competence Nancy and Laurance (1993).

The aim of this review is to analyze the different aspects of parenting styles which affect the academic achievement of adolescents. This study provides a comprehensive interpretation of different studies belonging to different continents. The study will contribute in literature by stating which of the parenting style is effective for better academic performance of adolescents across different cultures. Also, as there are many issues (like psychological, intellectual and academic as well) faced by adolescents, so there is a strong need to adopt a parenting style which supports them in overcoming those issues. This review will provide a path way for parents, policy makers and educationists to plan effective policies in overcoming these issues specially in enhancing the academic performance of young children of Pakistan. Also, there is lack of review studies on parenting styles and academic performance conducted in Pakistan. So, this review will provide a path way for future researchers in analyzing the relationship of parenting styles especially with reference to Pakistan.

2 Definition of parenting styles

Baumrind (1971) has identified three parenting styles as authoritative, authoritarian and permissive. Nancy and Laurance (1993) described the parenting styles as "a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviors are expressed". Authoritative parents are caring and open minded to their children opinions. These parents provide directions and support to their children. Lack of discipline, undemanding and highly responsive represents characteristics of permissive parenting. Children are free to make decisions in their social matters. There is no compulsion or direction from parents to their children. Authoritarian parents are highly unresponsive, highly demanding and expect obedience from their children (Ross and Hammer 2002).

All of the parenting styles have varying characteristics across cultures. Different ethnic groups define parenting styles according to their norms Barber (1996). For example Chinese American parents demonstrated more strictness as compared to European Americans Lin and Fu (1990).

Permissive and authoritarian parenting styles are correlated with negative psychological and behavioral outcomes (Anne et al. 2008). Also Pong et al. (2005) found that there is strong correlation between academic achievement and authoritative parenting as compared to authoritarian and permissive parenting styles.

In one study Dornbusch et al. (1987) found that parenting styles vary across different cultures. For example, authoritative parenting style was positively related to school grades and students' performance was higher in European American students. However, authoritative parenting style resulted in lower academic grades and was not related to the academic performance of Asian American students.

In another study, (Steinberg et al. 1994) tested whether parenting style is affected by ethnic differences. They analyzed that parenting style was less advantageous for Asian American adolescents as compared to that of European American adolescents. Adolescents of both Asian American and European American cultures felt it was more important to discuss and share their problems with their parents. The reason is that adolescents of both cultures have qualities of closeness with their parents Fuligni (1998).

Current study has similarities to and differences from other studies. In light of the articles discussed in this review, this study will assist policy makers, professionals, researchers, and government bodies to devise policies and setting priorities that support the authoritarian parenting style in the Asian context and authoritative and permissive parenting style for the other continents. This study will improve academic practices in adopting a parenting style which is effective for the academic achievement of adolescents.

Following are the objectives of this study:

- Identify the articles that show relevancy describing parenting styles and academic performance
- Classify the characteristics of articles
- Summarize the contribution of each article
- Analyze and interpret the relationship of parenting styles and academic performance

3 Methodology

This study includes previous available research on the topic that is related to parenting styles and academic performance. All the studies published relate to the topic. A list of 327 articles was assessed, among them 132 showed relevance to the scope of study and thus is included in the review. The most relevant and comprehensive data were then assessed. As a result, this study focuses on 39 articles relating to topic.

3.1 Inclusion and exclusion criteria

Inclusion of criteria in this review is defined as follows: studies published between 1987 and 2013, studies that presented original data, were published in English, studies that focused on parenting styles and academic achievement.

Studies that used other variables to measure the academic performance of adolescents rather than parenting styles were excluded. Meta-analysis and studies that were not published were not included in this review.

3.2 Identification of studies that met the inclusion criteria

Seven databases (Google Scholar, Science direct, Taylor and Francis Journals, Web of Science, JSTOR, Springer link, SAGE Journals) were used to identify studies pertaining to the topic parenting styles and academic performance. In the first step, searching the terms “parenting styles and academic achievement”, “parenting styles and academic performance”, “parenting styles and academic success”, “effect of parenting styles on academic performance of adolescents,” and “academic performance of adolescents” was used to search for relevant studies. Reference lists from these studies were then used to add more literature pertaining to the parenting styles and academic performance of adolescents.

During the second step, references of the selected studies were inspected and relevant studies were included in the review. All the unpublished and/or un-reviewed work was excluded, thus only 39 studies were left that were relevant to the topic.

3.3 Data analysis

3.3.1 Data selection process

The selected information abstracted from these articles includes purpose, research questions, study design, sampling, sample characteristics, results, and limitations. All these studies were then analyzed by trained researchers.

3.3.2 Classification of studies

Three well-trained researchers named Muhammad Shakil Ahmad, Ramayah Thurasamy and Noraini Bt. Abu Talib examined each article. Each one was then classified as “included for review” or “excluded from review.” When the match of variables was not clear, that study was classified as “possible inclusion.” Overall, 39 articles were included in the review that met the criteria of inclusion. All of these articles were first categorized. The articles that were related to the topic were then abstracted. After this, they were coded.

3.3.3 Screening

In the next step, all the information that showed relevancy was extracted so that common point of observation could be integrated in order to prove the main purpose of this research. From the secondary data sources, mediating variable were studied. After the extraction of facts, the data were systematically arranged for analysis to fill the gaps of the studies discussed in this review. Data were selected carefully and then managed in a systematic way to create a solid foundation for the study.

3.4 Evident findings

The reason this subject needs to be examined is that it is evident from the studies included in the review that parenting style has a strong impact on the academic performance of adolescents as shown in Table 1. The literature supports the following table.

3.5 Findings from literature

The literature researched consists of 39 articles. Fig. 1 shows the publication of studies that were carried out in different continents of the world. Fig. 2 represents the publication of

Table 1 Literature support of relationship between parenting styles and academic performance

S. no.	Year	Lit. support	Database	Findings
1	1987	Sanford et al.	JSTOR	Authoritative parenting leads towards high grades as compared to authoritarian and permissive parenting which has less effect on the academic achievement leading towards low academic
2	1989	Wendy & Richard	Scholar.Google	Parental autonomy support was positively related to children's self-reports of autonomous self-regulation, teacher-rated competence and adjustment, and school grades and achievement
3	1991	Baumrind. D	Sage Journals	Adolescents are most likely to be optimally competent when parents are high in both demanding and responsive
4	1992	Laurence et al.	JSTOR	Stronger school engagement and positive school performance of students was observed who ranked their parents as authoritative parents
5	1994	Christine et al.	Sage Journals	Authoritative parenting was positively associated with child competencies
6	1994	Sharon E. Paulson	Sage Journals	Parenting involvement significantly predicted the academic achievement. Also achievement outcome was higher when parents involved themselves in children academic activities
7	1996	Barbara et al.	Springer	Permissive and authoritarian parenting had intermediate effect on the academic achievement as compared to that of authoritative parenting which produced high outcomes
8	1997	Kristan et al.	JSTOR	Adolescents who perceived their parents as being non-authoritative were more likely than their peers to attribute achievement outcomes to external causes or to low ability
9	1997	Xinyin et al.	Sage Journals	Authoritarian parenting was associated positively with aggression and negatively with peer acceptance, sociability-competence, distinguished studentship and school academic achievement. In contrast, parental authoritative style was associated positively with indices of social and school adjustment and negatively with adjustment problems
10	1998	Patrick & Kim	JSTOR	Authoritarian parenting leads towards extrinsic motivation, authoritative parenting towards intrinsic motivation, and neglectful parenting to amotivation
11	1998	Kwok et al.	JSTOR	Academic achievement was negatively related to academic authoritarianism, but showed no relationship with academic authoritativeness
12	1999	Stelios N. Georgiou	Wiley	Parental controlling behavior was not significantly related to school outcome as compared to that of parental interest developing behavior

Table 1 continued

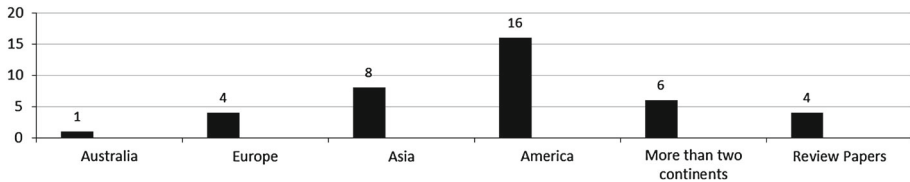
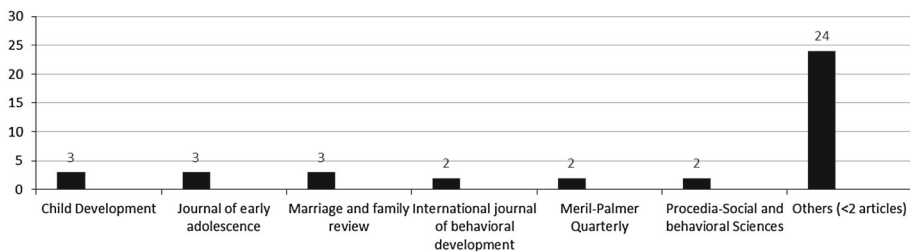
S. no.	Year	Lit. support	Database	Findings
13	2000	Kaufmann et al.	Springer	Adolescents whose parents had characteristics of authoritative parents adopted self-enhancing attributions, strategies having low levels of failure expectations
14	2000	Kaisa et al.	Science Direct	Authoritative parenting was more predictive of children's competence than maladaptation
15	2002	Kim & Rohner	Sage Journals	Authoritative and permissive parents were positive predictors of academic performance as compared to that of authoritarian parenting
16	2002	Gonzalez et al.	Science Direct	Parent involvement was positively related to a mastery orientation for all students
17	2004	Nicole & Brenna	Sage Journals	Grade point average was negatively related to the higher maternal beliefs in control
18	2005	Christopher Spera	Springer	Higher score of Academic achievement and psychosocial measures revealed that authoritative parenting was affective as compared to that of authoritarian and permissive parenting style
19	2005	Rashmi et al.	JSTOR	Authoritative parenting styles are supportive for higher academic achievement. However an authoritative parenting style is affected by culture, ethnicity and socioeconomic status. Also academic achievement is affected by parenting involvement and monitoring
20	2006	Christopher Spera	Sage Journals	Parental styles moderated the relationship between parental practices and student grades, with parental involvement and monitoring most effective under child-centered parenting styles
21	2007	Pomerantz & Moorman	Sage Journals	Parents' involvement may matter more for some children than for others
22	2008	Heaven et al.	Sage Journals	Structural equation modeling showed that adolescents with more authoritative parents experienced less of a decrease in conscientiousness at Time 2 than did students with less authoritative parents and the same baseline level of conscientiousness at Time 1. Additionally, the decrease in conscientiousness at Time 2 predicted worse grades at Time 3, even after controlling for baseline levels of academic achievement
23	2008	Lola & Shrinidhi	Taylor & Francis	Academic achievement is affected by the parenting styles and also by the parental education
24	2008	Soh-Leong & Ben	Taylor & Francis	Warmth is associated with positive child outcomes

Table 1 continued

S. no.	Year	Lit. support	Database	Findings
25	2010	Shaljan Aareepattamannil	Springer	Parents of students from the highest (Band I) academically oriented schools in Hong Kong rated themselves as higher in authoritativeness and lower in authoritarianism than parents of adolescents from the lowest academically oriented (Band 5) schools
26	2010	Suet-ling et al.	Sage Journals	The substantial positive predictive effects of family SES, parental encouragement, parental expectations, and parental beliefs on children's school achievement. Parental monitoring is negatively associated with school achievement
27	2010	Catherine & Lei	Taylor & Francis	Authoritative parenting has positive relationship with school achievement while authoritarian parenting is negatively associated with school achievement
28	2010	Abdorreza & Rozumah	Springer	Irrespective of cultures and societies, academic achievement was higher for authoritative parenting styles
29	2012	Jewrell et al.	Taylor & Francis	Gifted students and also those having high academic performance ranked their parents as authoritative
30	2012	Zainudin et al.	Science Direct	Preadolescents' perception of their father's parenting style was a significant factor in predicting preadolescents' global self-esteem and empathic behavior
31	2012	Hyojung et al.	Springer	Higher scores on measures of reading and math revealed that authoritative parenting was more effective as compared to that of authoritarian and permissive parenting style
32	2012	Kathleen et al.	Springer	The impact of academic self-concept on academic achievement is found to be greater for the authoritative than the authoritarian parenting style
33	2012	Katerina et al.	Taylor & Francis	Authoritative parenting style results in intrinsic motivation of adolescents
34	2012	Aisling Murray	Taylor & Francis	Adolescents reporting the optimal bonding parental style, for both mother and father, have lower scores on three subscales of academic burnout
35	2012	Zahari et al.	Springer	Academic achievement is significantly associated with parenting styles

Table 1 continued

S. no.	Year	Lit. support	Database	Findings
36	2012	Elham et al.	Sage Journals	Results shown that there is positive relationship of authoritative parenting style and academic achievement while permissive parenting was negatively associated with academic achievement of adolescents
37	2013	Caitlin et al.	Springer	Indian college students considered the parent demonstrating permissive parenting to be more effective and helpful than US college students
38	2013	Huey et al.	Sage Journals	An authoritative parenting style was related to increases in grade point average among those students who showed an increase in grade point average during the program
39	2013	Hamidreza et al.	Science Direct	Acceptance-involvement and psychological autonomy—ranging styles were significant and negative predictor of academic procrastination, whereas the “behavioral strictness-supervision” style had a significant predict power for the academic procrastination

**Fig. 1** Publication per continent**Fig. 2** Publication per journal

articles in different journals. Studies that were published in different time periods have been represented in Fig. 3. An increasing trend can be seen from the graph from the year 2007 and onward.

According to the nature of the research content, a leading role is played by *The Journal of Child Development*, *Journal of Early Adolescence*, *Marriage and Family Review*, and other international journals as shown in Fig. 2.

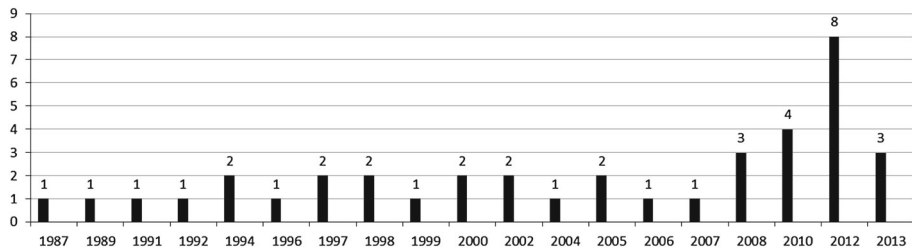


Fig. 3 Per year publication

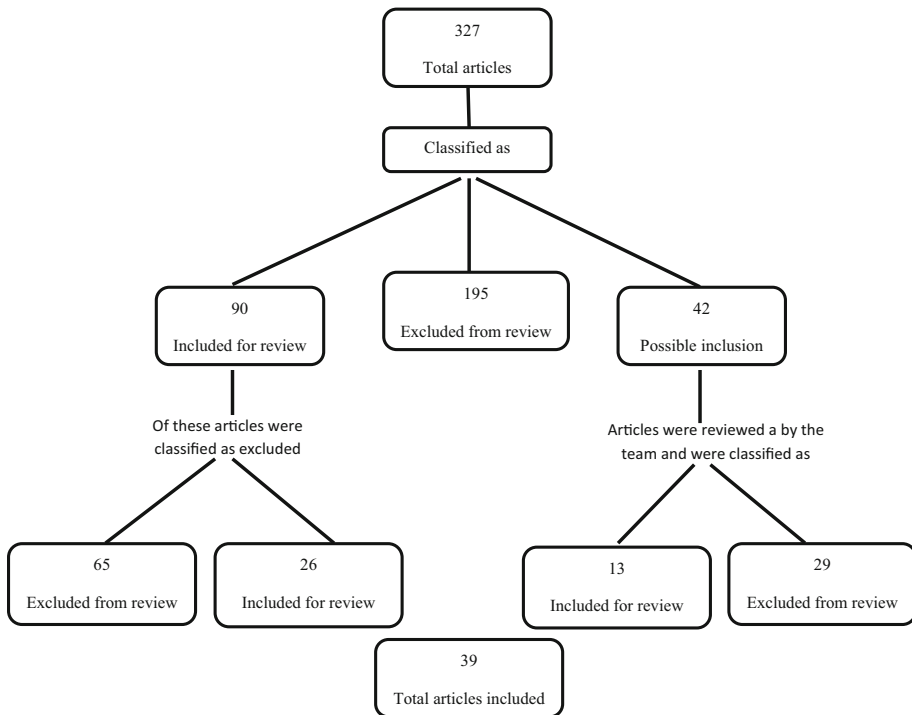


Fig. 4 Research design model

Geographic representation is shown in Fig. 1 where most of the studies were conducted in the United States. This highlights that there is much more emphasis on research in the role of parenting. Parenting styles are deeply analyzed in the U.S. and importance of parenting styles on the academic achievement of adolescents. There were fewer studies conducted on other continents like Australia, Europe, and Asia. This shows that there is a need to study which parenting style is a more effective predictor of academic achievement in adolescents on those continents (Figs. 4, 5).

Each article included in this review has been divided into two major branches: descriptive and prescriptive. Among the 39 studies, 35 studies are classified as prescriptive and 4 are classified as descriptive studies. All of these studies highlight the important role of parenting, parenting styles that affect the academic performance of adolescents. Case-study other mixed

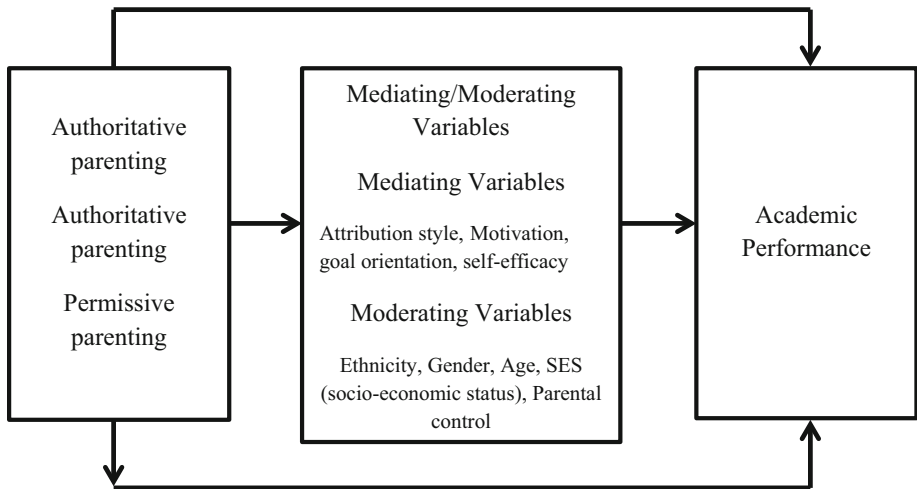


Fig. 5 Comparison between countries

studies, including review analysis, falls in the descriptive studies, while conceptual and literature review studies fall in the prescriptive one.

This review includes the studies published in English because of the language barrier. Articles were searched using the key phrase: “parenting styles and academic performance of adolescents.” Case studies, presentations, and professional non-academic articles were not included in this review.

The review highlights several characteristics of parenting styles associated with academic achievement. Following is the brief summary of the studies in tabulated and graphical form that were analyzed during the review analysis.

To cover the relationship between parenting styles and academic achievement, this review offers comprehensive examination of the literature on these two variables and their connection. Table 1 shows the studies that are included in the review highlighting the main findings (Table 2).

The review contains a summary of all the articles that met the established criteria. Articles included in this review were not classified on the basis of their strengths and research designs. All the studies that met the inclusion criteria were included in the review (Table 3).

4 Results

The review examines the findings of 39 articles that analyzed the relationship between parenting styles and the academic performance of students. All the selected studies highlighted that there exists a relationship between parenting styles and the academic performance of adolescents. There were no studies that showed a negative or non-existent relationship between parenting style and academic achievement. In one study, it was found that parental styles moderated the relationship between parental practices and student grades, with parental involvement and monitoring most effective in child-centered parenting styles (Spera 2006). According to Baumrind (1971), adolescents are most likely to be optimally competent when parents are both demanding and responsive. Studies included in the review revealed that there exists a positive relationship between parenting style and academic achievement in adolescents.

Table 2 Summary of studies examining parenting styles and academic achievement

Year	Author/s	N	Design of study	Variables		Results
				Moderating	Mediating	
1987	Sanford et al.	7,836	Cross-sectional			Authoritative parenting leads towards high grades as compared to authoritarian and permissive parenting which has less effect on the academic achievement leading towards low academic grades
1989	Wendy et al.	1,030	Longitudinal			Parental autonomy support was positively related to children's self-reports of autonomous self-regulation, teacher-rated competence and adjustment, and school grades and achievement
1991	Baumrind, D	139	Cross-sectional			Adolescents are most likely to be optimally competent when parents are high in both demanding and responsive
1992	Laurence et al.	6,400	Longitudinal	Authoritative parenting	Parental involvement and academic encouragement	Stronger school engagement and positive school performance of students was observed who ranked their parents as authoritative parents
1994	Christine et al.	937	Cross-sectional			Authoritative parenting was positively associated with child competencies
1994	Sharon E. Paulson	247	Cross-sectional			Parenting involvement significantly predicted the academic achievement. Also achievement outcome was higher when parents involved themselves in children academic activities

Table 2 continued

Year	Author/s	N	Design of study	Variables		Results
				Moderating	Mediating	
1996	Barbara et al.	3,993	Cross-sectional	Ethnicity, gender		Permissive and authoritarian parenting had intermediate effect on the academic achievement as compared to that of authoritative parenting which produced high outcomes
1997	Kristan et al.	11,000	Cross-sectional		Attribution style	Adolescents who perceived their parents as being non-authoritative were more likely than their peers to attribute achievement outcomes to external causes or to low ability
1998	Patrick et al.	404	Cross-sectional		Intrinsic, extrinsic, amotivation	Authoritarian parenting leads towards extrinsic motivation, authoritative parenting towards intrinsic motivation, and neglectful parenting to amotivation
1998	Kwok et al.	382	Cross-sectional			Academic achievement was negatively related to academic authoritarianism, but showed no relationship with academic authoritativeness
1999	Stelios N. Georgiou	473	Cross-sectional			Parental controlling behavior was not significantly related to school outcome as compared to that of parental interest developing behavior
2000	Kaufmann et al.	354	Cross-sectional			Adolescents whose parents had characteristics of authoritative parents adopted self-enhancing attributions, strategies having low levels of failure expectations
2000	Dagmar et al.	1,230	Longitudinal	Gender, age, ethnicity, SES		Authoritative parenting was more predictive of children's competence than maladaptation

Table 2 continued

Year	Author/s	N	Design of study	Variables		Results
				Moderating	Mediating	
2002	Kim & Rohner	245	Cross-sectional	Parental control	Parental involvement	Authoritative and permissive parents were positive predictors of academic performance as compared to that of authoritarian parenting
2002	Gonzalez et al.	196	Cross-sectional			Parent involvement was positively related to a mastery orientation for all students
2004	Nicole & Brenna	83	Cross-sectional			Grade point average was negatively related to the higher maternal beliefs in control
2005	Rashmi et al.	1,028	Cross-sectional			Higher score of Academic achievement and psychosocial measures revealed that authoritative parenting was affective as compared to that of authoritarian and permissive parenting style
2005	Christopher Spera		Cross-sectional			Authoritative parenting styles are supportive for higher academic achievement. However an authoritative parenting style is affected by culture, ethnicity and socioeconomic status. Also academic achievement is affected by parenting involvement and monitoring
2006	Christopher Spera	184	Cross-sectional	Parenting styles, SES (socio-economic status)		Parental styles moderated the relationship between parental practices and student grades, with parental involvement and monitoring most effective under child-centered parenting styles
2007	Pomerantz & Moorman		Cross-sectional	SES (socio-economic status)		Parents' involvement may matter more for some children than for others

Table 2 continued

Year	Author/s	N	Design of study	Variables		Results
				Moderating	Mediating	
2008	Heaven et al.	784	Longitudinal		Conscientiousness	Structural equation modeling showed that adolescents with more authoritative parents experienced less of a decrease in conscientiousness at Time 2 than did students with less authoritative parents and the same baseline level of conscientiousness at Time 1. Additionally, the decrease in conscientiousness at Time 2 predicted worse grades at Time 3, even after controlling for baseline levels of academic achievement
2008	Lola & Shrinidhi		Cross-sectional			Academic achievement is affected by the parenting styles and also by the parental education
2008	Soh-Leong & Ben		Cross-sectional			Warmth is associated with positive child outcomes
2010	Catherine & Lei	463	Cross-sectional			Parents of students from the highest (Band I) academically oriented schools in Hong Kong rated themselves as higher in authoritative and lower in authoritarianism than parents of adolescents from the lowest academically oriented (Band 5) schools
2010	Shaljan Areepattamannil	10,788	Cross-sectional			The substantial positive predictive effects of family SES, parental encouragement, parental expectations, and parental beliefs on children's school achievement. Parental monitoring is negatively associated with school achievement

Table 2 continued

Year	Author/s	N	Design of study	Variables		Results
				Moderating	Mediating	
2010	Suet-ling, et al.	20,000	Cross-sectional			Authoritative parenting has positive relationship with school achievement while authoritarian parenting is negatively associated with school achievement
2010	Abdorreza & Rozumah	419	Cross-sectional			Irrespective of cultures and societies, academic achievement was higher for authoritative parenting styles
2012	Kathleen et al.	332	Cross-sectional			Gifted students and also those having high academic performance ranked their parents as authoritative
2012	Katerina et al.	190	Cross-sectional			Preadolescents' perception of their father's parenting style was a significant factor in predicting preadolescents' global self-esteem and empathic behavior
2012	Aisling Murray	8,500	Cross-sectional		Homework completion, self-concept	Higher scores on measures of reading and math revealed that authoritative parenting was more effective as compared to that of authoritarian and permissive parenting style
2012	Zahari et al.	493	Cross-sectional		Parenting styles	The impact of academic self-concept on academic achievement is found to be greater for the authoritative than the authoritarian parenting style
2012	Jewrell et al.	148	Cross-sectional		Motivation, goal orientation, self-efficacy	Authoritative parenting style results in intrinsic motivation of adolescents
2012	Hyojung et al.	447	Cross-sectional			Adolescents reporting the optimal bonding parental style, for both mother and father, have lower scores on three subscales of academic burnout

Table 2 continued

Year	Author/s	N	Design of study	Variables		Results
				Moderating	Mediating	
2012	Zainudin et al.	391	Cross-sectional			Academic achievement is significantly associated with parenting styles
2012	Elham et al.	382	Cross-sectional			Results shown that there is positive relationship of authoritative parenting style and academic achievement while permissive parenting was negatively associated with academic achievement of adolescents
2013	Caitlin et al.	226	Cross-sectional			Indian college students considered the parent demonstrating permissive parenting to be more effective and helpful than US college students
2013	Huey et al.	88	Cross-sectional	Gender, family form		An authoritative parenting style was related to increases in grade point average among those students who showed an increase in grade point average during the program
2013	Hamidreza et al.	395	Cross-sectional			Acceptance-involvement and psychological autonomy—ranting styles were significant and negative predictor of academic procrastination, whereas the “behavioral strictness-supervision” style had a significant predict power for the academic procrastination

Review suggests that children who pointed out their parents to be authoritative have shown good academic performance (high GPA score). Several theories support the relationship of parenting styles and academic performance. Family system theory supports the idea that no one can understand another person in isolation. Family is a system in which each member facilitates the other, especially the parents. Achievement goal theory highlights that students' higher academic outcomes and motivation are sometimes dependent on the results they desire to achieve. In order to achieve that, there are certain factors that are directly and

Table 3 Summary characteristics of reviewed studies

Characteristics of studies	No. of studies (N = 39)	Number of studies that included academic achievement
Parenting styles	39	39
Study design		
Prescriptive	35	
Descriptive	4	
Data collection design		
Longitudinal	04	
Cross-sectional	35	
Student sample education level		
Primary	5	
Middle	10	
Higher than secondary	19	
Review studies	4	
Country		
USA	16	
Australia	2	
Cyprus	2	
Hong Kong	3	
Malaysia	2	
Canada	2	
South Korea	2	
India	1	
China	1	
Sweden	1	
Greece	1	
China	2	
Review Studies	4	

indirectly associated with their academic performance. It was also found that authoritative parenting styles are supportive of higher academic achievement. It may be due to the fact that adolescents find their parents supportive, caring and enable them to resolve their issues with their guidance. Attribution theory also supports the view that individuals who observe their surroundings have an impact on their social behavior.

However, an authoritative parenting style is affected by culture, ethnicity and socioeconomic status. Also, academic achievement is affected by parenting involvement and monitoring. This review supports authoritative parents and their behavioral style which supports and favors child development. Parents should adopt the authoritative parenting style. There should be training seminars and workshops for parents instructing them on how to behave and act like authoritative parents.

The review also concluded that the level of education of parents affected parenting behavior. Lola and Shrinidhi (2008) found that academic achievement is affected by parenting styles and also by parental education. Parents who have a high level of education tend to be more authoritative, showing that parental education influences the behavioral style of parents.

There is also a cultural difference which draws a thin line between parenting styles. Asian cultures show authoritarian parenting as compared to the U.S. and Europe. Also, Asian students demonstrate more effective academic achievement with parents who have attributes of authoritarian parenting as compared to the West and European countries where the majority of students' academic achievement is the result of authoritative parenting. In one study [Dornbusch et al. \(1987\)](#) found that parenting styles vary across different cultures. Authoritative parenting style affects European American adolescents for the better while authoritarian parenting improves the academic performance of Asian American adolescents. In another study, it was found that parents of Chinese American adolescents were more strict than European American parents which is a characteristic of authoritarian parenting style [Lin and Fu \(1990\)](#). In summation, it can be said that the cultural effect of parenting styles should be further analyzed in order to have a broader understanding of them and their effect on the psychosocial behavior of children (Table 3).

All three parenting styles have certain effects on children's psychological, social, and moral development. Academic performance, problem solving behavior, psychosocial development, and social competence are among the key domains which are strongly affected by these parenting styles. Findings from this research have shown that:

- children who rate their parents as authoritative are socially and instrumentally more competent in academics as compared to those who observed their parents as non-authoritative ([Baumrind 1991](#)), and
- Children who rated their parents as permissive perform poorly in all domains.

There are certain policy implications that stem from this review. First, there is substantial evidence that authoritative parenting has a positive impact on the academic performance (GPA) of young children. Secondly, studies suggest that authoritative parenting has greater impact on the academic performance of young children as compared to that of authoritarian and permissive parenting. Third, most of the studies in this review suggest that western parents put more focus on being authoritative rather than authoritarian and permissive.

As the family is the basic learning environment for children, a suitable home environment helps in child development ([Benasich and Brooks-Gunn 1996](#)). The two dimensions of parenting styles (i.e. parental warmth and responsiveness) are effective strategies when children are in distress ([Dittman et al. 2011](#)). It can be suggested that both home environment and parenting styles are effective predictors of academic performance in young children.

5 Discussion

Today there are many more books available on child development. For example, *Raising a Financially Savvy Child*, *Raising an Eco-Friendly Kid*, *Keeping Your Child Gluten-Free*, *Raising a Yoga Whiz Kid*, etc. are among the books that are available for child development. All these books highlight important strategies that help parents for the development of children. There is a need to understand the needs of children in what they want to achieve, what is good for their development, and what is required for them. Parents can be successful in raising their children to be more competent and successful. There is a need to understand what is necessary for children's growth and development. Children should not be compelled to do what parents want; instead, there is a need to know what the children want. A good parenting style which is both supportive and flexible is good for the development of children.

The review highlighted that parenting styles and involvement are associated with the academic achievement of children as analyzed by the researchers in their studies. All

the articles included in this review have shown a positive relationship between parenting styles and the academic achievement of adolescents. The studies highlighted that authoritative parenting is of much more importance for academic achievement of adolescents than authoritarian or permissive. Authoritative parenting is more effective than those of authoritarian and permissive parenting. Children whose parents have qualities of authoritative parents achieve high grades as compared to those of authoritarian and permissive parents. The reason is that these parents are responsive to the social and cognitive needs of children.

Authoritative parenting is an effective predictor of academic performance. Most of the academic performance and sustained optimal development of college students outcomes are the result of authoritative parenting (Turner et al. 2009). There are several characteristics of the authoritative approach that are helpful in positive academic outcomes. Authoritative parenting styles support the autonomy of children which helps in better academic performance (Garn et al. 2010). Roche et al. (2007) found that school performance can be improved effectively when authoritative approach is used. Review suggests that adolescents whose parents had characteristics of the authoritative parenting style developed self-enhancing attributes (Kaisa et al. 2000). In one study, it was found that there is a positive relationship between the authoritative parenting style and academic achievement while permissive parenting was negatively associated with academic achievement in adolescents (Elham et al. 2012). Also, higher academic achievement scores and psychosocial measures revealed that authoritative parenting was more effective compared to that of authoritarian and permissive parenting styles (Rashmi et al. 2005). An authoritative parenting style also results in the intrinsic motivation of adolescents. Children who pointed out that their parents were authoritative had high intrinsic motivation in them which led them towards achieving high levels of devotion to their studies and in showing good academic performance (having high GPA). Results suggest that authoritative parenting is more effective for the academic success and achievement of adolescents. Pong et al. (2005) found that there is a strong correlation between academic achievement and authoritative parenting as compared to authoritarian and permissive parenting styles. Only one study conducted by Barnhart et al. (2013) highlighted that permissive parenting is effective compared to those of authoritarian and authoritative parents.

Analysis of the study shows that there are several factors that affect the nature of parenting styles. These are socio-economic status, culture, ethnicity, income level, and age of parents, gender, home environment and education level of parents. In most of the studies, diverse cultural groups were not taken into consideration. Only limited sample were selected for the purpose of this study. Also two studies conducted by Dornbusch et al. (1987) and Grolnick and Ryan (1989) have observed that mothers tend to be more authoritative than fathers.

It can be summarized from the above studies that among the three different parenting styles, authoritative parenting style can be the best predictor of academic achievement in adolescents. The students who mentioned their parents as authoritative had greater developmental outcomes as compared to authoritarian and permissive parenting styles. Studies highlighted that students who pointed out their parents as authoritative had better academic performance as compared to authoritarian and permissive parents (Abdorreza and Rozumah 2010)

5.1 Positive impact

Authoritative parenting tends to promote better and positive outcomes in child development. The reason is that this parenting style promotes loving, caring, and supportive environment.

Authoritative parents are supportive of their children. They are flexible in nature, encourage the view point of children, and have effective communication skills (Dornbusch et al. 1987). The balance between such qualities and framework of rules promotes child development by providing an appropriate amount of guidance as well. Authoritative parenting is effective for child development. Children raised by parents who were authoritative in nature had higher psychosocial ability and had higher psychosocial and maturity scores, and their behavioral and psychosocial scores were lowest. Also, they scored higher in self-reliance and they were less depressed (Lamborn et al. 1991). Authoritative parents do exert influence and control over children, but the magnitude of control is not as much as compared to that of authoritarian or permissive parents. This flexible control of authoritative parents promotes child-centered democratic control by making their children more independent. Children are not stressed following the instructions from their parents. Children of authoritative parents are socially more developed in interaction with peers and other adults. Also, these children have better emotional intelligence as compared to that of children of authoritarian and permissive parents. Children of authoritarian and permissive parents had lower self-perception of academic ability. Also, children who reported their parents as authoritative were self-reliant as compared to that of authoritarian and permissive families (Baumrind 1991).

5.2 Negative parenting styles

After analyzing the results of the highlighted studies, it can be concluded that authoritarian and permissive parents are less effective in child development than authoritative parents. This does not mean that those children cannot develop effectively. It means that in comparing authoritarian and permissive parents with authoritative parents, results regarding child development are less positive.. As authoritarian parents had high demands from their children, so children had low self-perception and demonstrated lower academic achievement. The lowest cognitive competence and self-regulation was found in adolescents from neglectful families (Steinberg et al. 1994). Little or no communication skills and reserved behavior in children are the result of authoritarian practices (Baumrind 1971). Authoritarian parents tend to exert more rigid framework of rules and also expect obedience from children as well, so self-regulation in children may be promoted but independence of self-expression is not allowed. Intrinsic motivation, self-reliance and perceptions of competence in adolescents are destabilized as a result of high demandingness, strict rules and obedience from authoritarian parents (Steinberg et al. 1994). On the other end of the spectrum, children of permissive parents have freedom of expression and independence but due to the absence of a framework of rules they are emotionally less intelligent and have less social and intellectual competence as compared to others.

6 Conclusion

The aim of this paper was to analyze and to present the relationship of parenting styles and academic performance of adolescents. Studies relating to these two variables were included in this study.

Each parenting style has its own characteristics and values which shape children's social life. One of the affective characteristic which separates and specifies each parenting style is the psychological control that they have over their children. Through psychological control, parents intervene with the psychological and emotional development of their children.

Characteristics of psychological control include the withdrawal of love, guilt induction, or shaming. Also, both authoritarian and authoritative parents exert psychological control on children, but the magnitude of psychological control is different in both styles. Authoritarian parents influence strong psychological control and expect the children to obey without question. Authoritative parents are flexible in nature and therefore are lower in psychological control.

In terms of academic achievement, research on academic achievement highlights that the issues and concerns of children and their educational development are of much greater importance in western culture. Importance is given to child development and issues are highlighted for the sake of removing them and improving the standard of education among young children. More importance is given to child development than to that of parenting styles. Parenting style also has correlations with children's social behavior and development. Research suggests that parenting style has a direct correlation with how children will grow up, how they live and whether they will abide by the rules in society. Parents must consider those practices which can make their children ethically, socially, and academically more successful. There is much need to explore parenting styles in depth so that developmental needs of children could be fulfilled. By analyzing parenting styles across different cultures will help understanding the influence of culture on parenting styles and also suggesting them to adopt and practice such parenting style which could help in raising their children in an effective way. So, for future researchers, it is recommended to analyze the cultural effect on the effective functioning of parenting styles both in developed and developing countries.

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Emerging Adult Perceptions of and Preferences for Parenting Styles and Associated Psychological Outcomes

Journal of Family Issues

2018, Vol. 39(9) 2491–2504

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DOI: 10.1177/0192513X18756928

journals.sagepub.com/home/jfi



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Abstract

Research suggests that child perception of parenting styles may strongly influence child outcomes and parents must balance support and structure based on their emerging adult children's changing needs. The current study examined emerging adult perceptions of parenting style in comparison with their preferences and how these characteristics interact to predict psychological problems. Significant interactions between preferred and perceived parenting style were found, several of which were further moderated by gender. Results suggest that emerging adults prefer parenting styles that grant autonomy, and males reported lower psychological problems when they also perceived such a parenting style, whereas females reported higher psychological problems. This may suggest that females experience more risky behaviors while at college when granted autonomy relative to males, thus accounting for their higher psychological problems. The current study emphasizes the ongoing impact of parental influences on emerging adult outcomes and that children's preferences and perceptions influence parent–child gender dyads.

Keywords

parenting style, emerging adult, gender, parent–child relationship, preference, psychological

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When it comes to parenting and what children want, the adage “children seek structure” may apply. However, children also may struggle to have their way when their parents enforce limits. Furthermore, what children want and need may differ based on their development, and this tension may reach a zenith during emerging adulthood, when children are freer to speak their minds and strive for autonomy (Finley, Mira, & Schwartz, 2008). Cullaty (2011) and Schiffrin et al. (2014) addressed this developmental specificity by indicating that parents who exert excessive control may promote resentment and hinder autonomy in their emerging adult children, noting that emerging adult children do not prefer intrusive parents but also want parental support. Thus, it may be especially important to consider emerging adult preferences as the parent–child relationship may be disrupted if parents fail to consider these preferences and adjust to developmental changes. Despite this, a paucity of research exists on how children themselves prefer to be parented, and even less research compares children’s preferences with their perceptions or connects them with psychological outcomes. Thus, the current study investigated perceived and preferred parenting style in the context of parent–child gender dyads during emerging adulthood, a time still under the influence of parenting and at highest risk of psychiatric illness (Arnett, 2000; Kessler, Chiu, Demler, Merikangas, & Walters, 2005; Walker & McKinney, 2015).

In an older study, Sowers (1937) commented that children preferred parents to be kind, sincere, friendly, and self-controlled; provide firm but fair discipline without nagging; and avoid corporal punishment and consider their point of view (i.e., authoritative style). More recent studies are consistent with Sowers (1937), noting that emerging adults preferred supportive parental relationships characterized by authoritative style (Manza, 2008), with several studies finding gender differences (e.g., authoritarian style being viewed more negatively by females than males and in mothers than fathers; Barnhart, Raval, Jansari, & Raval, 2013; McGillicuddy-De Lisi, & De Lisi, 2007).

Although these studies begin to explore preferences regarding parenting, it appears that no other research addresses how emerging adults’ preferences and perceptions interact to predict psychological problems. Differences between perceived and preferred parenting may result in poor adjustment when emerging adult preferences and perceptions are mismatched. For example, emerging adults may experience increased difficulties when they prefer more autonomy in the face of parental overcontrol or more closeness with their parents than they are provided. Thus, the current study examined perceived and preferred parenting styles and how they interact to predict psychological problems. It advances the research described above by connecting parenting style perceptions with preferences and examining how these characteristics relate to psychological problems in emerging adults.

Life-course theory suggests that children are best served when they experience increasingly more independence as they transition through emerging adulthood with the support of their parents (Aquilino, 1997). Thus, it was hypothesized that emerging adults who preferred and perceived styles that promote autonomy would report lower psychological problems, whereas emerging adults who preferred styles that promote autonomy but perceived styles that hinder it would report higher psychological problems. Given prior findings, gender effects also were examined in an exploratory manner.

Method

Procedure

Following institutional review board approval, the survey was conducted online. Participants completed an informed consent form prior to participation and received a printable debriefing form on exiting the study. Completing or withdrawing from the study resulted in credit. Participants completed the preferred and perceived as well as the maternal and paternal versions of the Parental Authority Questionnaire separately to promote independence of ratings and with regard to current perceptions and preferences. Measures were completed in random order to balance order effects across participants.

Participants

Participants included 486 emerging adults attending a Southern university (89.4% of participants originated from a Southern state) who were aged 18 to 25 years ($M = 19.58$ years, $SD = 1.38$). See Table 1 for participant demographics.

Descriptive statistics for preferred and perceived parenting style variables are reported in Table 2, and the mean of the Adult Self-Report total problem subscale was 38.65 ($SD = 27.31$). Correlations among variables are shown in Table 3. As shown in Table 2, males and females preferred and perceived authoritative style the most, followed by authoritarian and permissive style across mothers and fathers. As shown in Table 3, perceived maternal and paternal styles were associated positively with respective preferred styles across males and females, with r s ranging from .39 to .60.

Instruments

Parental Authority Questionnaire. The Parental Authority Questionnaire (Buri, 1991) contains 30 questions, rated from *strongly agree* to *strongly disagree*, assessing parents' authoritative (e.g., *my mother encourages verbal give-and-take*), authoritarian (e.g., *my mother expects me to listen immediately*), and

Table 1. Participant Demographics ($N = 486$).

Demographic	Percent Participants
Gender	
Female	63.8
Male	36.2
Ethnicity	
Caucasian	68.2
African American	26.3
Asian	1.8
Hispanic	1.4
Other	1.8
Family structure	
Biological mother and father	62.2
Biological parent and stepparent	13.6
Biological mother only	15.4
Biological father only	3.5
Other caregivers (i.e., aunts, uncles, grandparents)	3.8
Maternal education	
Graduate degree	18.6
4-year degree	38.2
2-year degree	13.8
High school degree	26.3
Did not complete high school	1.4
Paternal education	
Graduate degree	19.7
4-year degree	29.2
2-year degree	13.3
High school degree	32.0
Did not complete high school	3.3

permissive (e.g., *my mother believes that children should have their way in the family*) parenting styles. Participants were instructed to complete the measure regarding current perceptions (e.g., *rate your mother as she actually treats you currently*) as well as their preferences (e.g., *rate your father as you would ideally like for him to treat you*). Participants rated maternal and paternal as well as perceived and preferred items separately. Internal consistencies of the sub-scales ranged from .78 to .85 in the current study.

Adult Self-Report. The Adult Self-Report (Achenbach & Rescorla, 2003) contains 123 items measuring psychological symptoms. Respondents answer

Table 2. Means and Standard Deviations of Preferred and Perceived Maternal and Paternal Parenting.

	Maternal				Paternal			
	Preferred		Perceived		Preferred		Perceived	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Males								
PAQ Authoritative	25.77	6.90	25.06	6.94	26.20	6.86	24.53	6.45
PAQ Authoritarian	21.23	6.12	22.21	5.79	21.39	6.27	22.83	6.11
PAQ Permissive	17.75	5.77	17.97	5.98	17.57	5.35	17.35	6.21
Females								
PAQ Authoritative	28.35	6.88	25.17	7.12	28.09	7.42	24.11	7.70
PAQ Authoritarian	19.28	6.12	21.94	6.55	19.36	6.22	21.21	7.14
PAQ Permissive	17.33	5.28	16.24	5.89	16.93	5.06	16.29	6.03

Note. PAQ = Parental Authority Questionnaire.

statements as 0 (*not true*), 1 (*somewhat or sometimes true*), and 2 (*very true or often true*). Subscales include withdrawn (e.g., *I'd rather be alone*), somatic complaints (e.g., *I feel dizzy*), anxious/depressed (e.g., *I worry about my future*), rule-breaking behavior (e.g., *I am irresponsible*), aggressive behavior (e.g., *I attack others*), intrusive (e.g., *I brag*), thought problems (e.g., *I cannot get my mind off certain things*), and attention problems (e.g., *I am forgetful*) and can be summed into a total problem score, which was used to indicate psychological problems. Internal consistency alpha of the total problem scale in the current study was .91.

Results

The interaction effects between preferred and perceived parenting styles on psychological problems while considering gender were examined using PROCESS (Hayes, 2013) version 2.13, Model 3, which examines the effects of two moderators (i.e., preferred parenting style and gender), including the three-way interaction, on the relationship between two variables (i.e., perceived parenting style and emerging adult psychological problems). Analyses included a model for each of the three parenting styles for mothers and fathers, resulting in six models. Significant interaction effects were plotted using upper (+1 *SD*) and lower (−1 *SD*) bounds of the standardized variables (Cohen, Cohen, West, & Aiken, 2003). Predictors in the six models (i.e., maternal and paternal authoritative, authoritarian, and permissive style)

Table 3. Correlations Among Variables by Gender.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Perceived maternal authoritative style	—	ns	ns	.50	ns	-.23	.41	.16	-.20	.50	ns	-.16	-.22
2. Perceived maternal authoritarian style	.36	—	-.41	ns	.44	ns	ns	.32	ns	ns	.43	ns	.20
3. Perceived maternal permissive style	.11	.12	—	-.25	ns	.39	-.13	ns	.36	-.23	ns	.39	.16
4. Preferred maternal authoritative style	.47	.24	ns	—	ns	-.14	.39	.12	-.20	.75	ns	-.15	ns
5. Preferred maternal authoritarian style	.20	.51	ns	.26	—	-.11	.16	.34	ns	-.12	.65	-.19	ns
6. Preferred maternal permissive style	ns	ns	.45	ns	ns	—	-.13	-.13	.45	-.19	-.13	.57	.25
7. Perceived paternal authoritative style	.40	.18	ns	.57	.32	.18	—	ns	ns	.48	.17	-.16	-.18
8. Perceived paternal authoritarian style	.30	.41	ns	.40	.56	ns	.29	—	-.27	.18	.43	ns	ns
9. Perceived paternal Permissive style	ns	ns	.49	ns	.15	.70	.16	ns	—	-.18	ns	.44	.18
10. Preferred paternal authoritative style	.42	.14	ns	.81	.20	ns	.55	.35	ns	—	ns	-.10	-.10
11. Preferred paternal authoritarian style	.22	.44	-.13	.34	.76	ns	.38	.54	ns	.31	—	ns	ns
12. Preferred paternal permissive style	ns	ns	.37	ns	ns	.66	.12	ns	.60	ns	ns	—	.15
13. Total problems	-.19	ns	.16	ns	ns	.22	ns	ns	.19	ns	ns	ns	—

Note. Correlations for males appear below the diagonal, whereas correlations for females appear above the diagonal. $p < .01$ unless otherwise specified as ns (not significant).

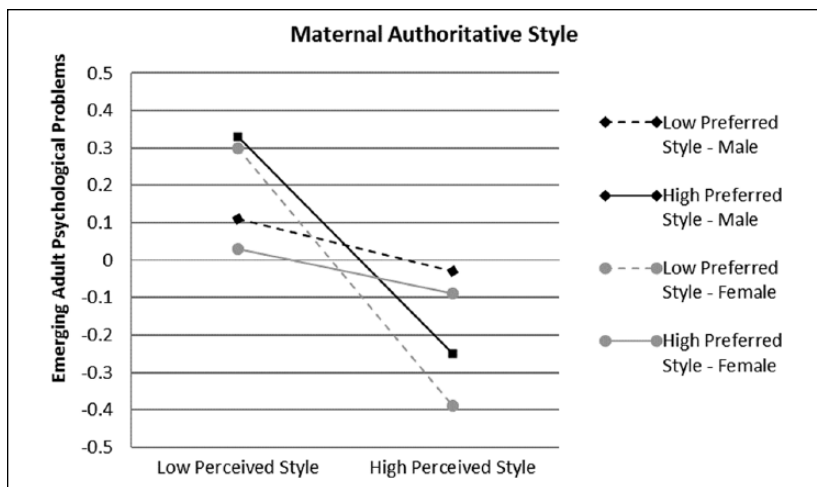


Figure 1. Gender $\times$ perceived $\times$ preferred maternal authoritative style interaction. Two-way interaction is significant for both males and females.

included perceived style, preferred style, gender, and their interactions (i.e., perceived style $\times$ preferred style, perceived style $\times$ gender, preferred style $\times$ gender, and perceived style $\times$ preferred style $\times$ gender).

The maternal authoritative style model predicted a significant portion of the variance in emerging adult psychological problems, $R^2 = .06$, $F(7, 478) = 4.53$, $p < .01$. Significant predictors included perceived style, $b = -.19$, $t(478) = -3.56$, $p < .01$, and the perceived style $\times$ preferred style $\times$ gender three-way interaction, $b = -.25$, $t(478) = -3.11$, $p < .01$. The perceived style $\times$ preferred style two-way interaction was significant for males, $b = -.11$, $t(478) = -2.25$, $p = .03$, and females, $b = .14$, $t(478) = 2.20$, $p = .03$. See Figure 1 for this interaction. The paternal authoritative style model also was significant, $R^2 = .03$, $F(7, 478) = 2.29$, $p = .03$. The only significant predictor was the perceived style $\times$ preferred style $\times$ gender three-way interaction, $b = -.13$, $t(478) = -1.96$, $p = .05$. The perceived style $\times$ preferred style two-way interaction was significant for males only, $b = -.09$, $t(478) = -2.29$, $p = .02$. See Figure 2 for this interaction.

The maternal authoritarian style model was significant, $R^2 = .04$, $F(7, 478) = 3.06$, $p < .01$. The only significant predictor was the perceived style $\times$ preferred style $\times$ gender three-way interaction, $b = -.21$, $t(478) = -2.67$, $p = .01$. The perceived style $\times$ preferred style two-way interaction was significant for females only, $b = .18$, $t(478) = 2.74$, $p = .01$. Please see Figure 3 for this

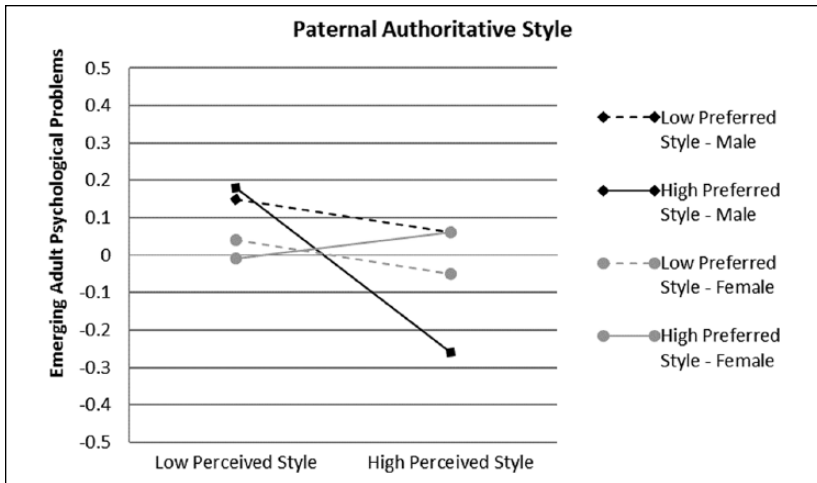


Figure 2. Gender $\times$ perceived $\times$ preferred paternal authoritative style interaction. Two-way interaction is significant for males only.

interaction. The paternal authoritarian style model was not significant overall and none of the individual predictors were significant.

The maternal permissive style model was significant, $R^2 = .08$, $F(7, 478) = 5.95$, $p < .01$. Significant predictors included preferred style, $b = .20$, $t(478) = 3.96$, $p < .01$, and the perceived style $\times$ preferred style $\times$ gender three-way interaction when using a one-tailed test, $b = -.10$, $t(478) = -1.63$, one-tailed $p = .05$. The perceived style $\times$ preferred style two-way interaction was significant for females only, $b = .13$, $t(478) = 2.93$, $p < .01$. Please see Figure 4 for this interaction. The paternal permissive style model also was significant, $R^2 = .05$, $F(7, 478) = 3.38$, $p < .01$. The only significant predictor was perceived style, $b = .17$, $t(478) = 3.20$, $p < .01$.

Discussion

When examining maternal authoritative style, the preferred $\times$ perceived interaction was significant for both males and females but in opposite directions. Specifically, males who had the lowest psychological problems were associated with preferred and perceived high maternal authoritative style and males with the highest psychological problems were associated with preferred high but perceived low maternal authoritative style. Males who preferred low maternal authoritative style experienced more moderate psychological problems, regardless of perceived style, than those who preferred high maternal authoritative

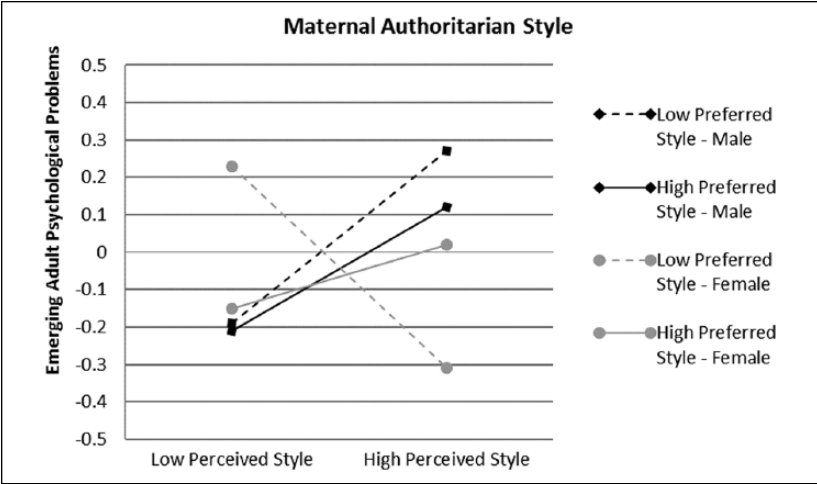


Figure 3. Gender $\times$ perceived $\times$ preferred maternal authoritarian style interaction. Two-way interaction is significant for females only.

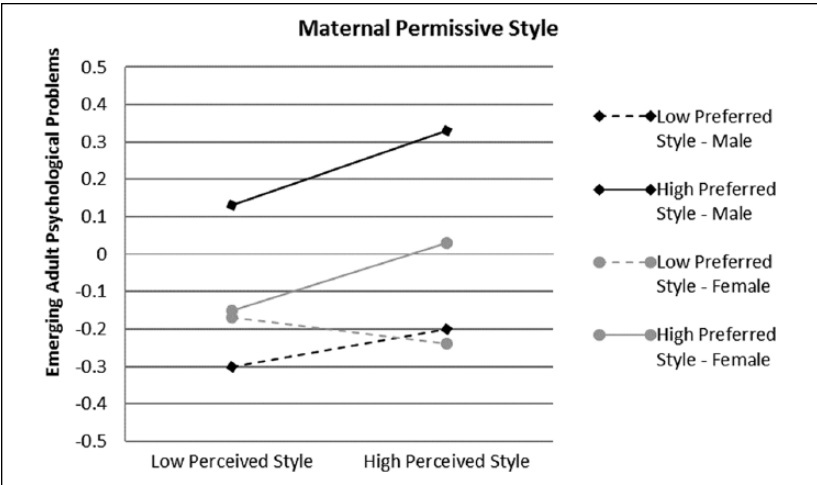


Figure 4. Gender $\times$ perceived $\times$ preferred maternal permissive style interaction. Two-way interaction is significant for females only.

style. This finding supports the hypothesis that those preferring and perceiving a style that is supportive and grants autonomy (i.e., authoritative) would experience

the fewest problems. Contrary to the hypothesis, this effect was markedly different when examining females. Specifically, females who had the lowest psychological problems were associated with preferred low but perceived high maternal authoritative style and females who had the highest psychological problems were associated with preferred and perceived low maternal authoritative style. Females who preferred high maternal authoritative style experienced more moderate psychological problems, regardless of perceived maternal authoritative style, than those who preferred low maternal authoritative style.

Taken together, this three-way interaction suggests that males who prefer high authoritative mothers and have them experience markedly lower psychological problems compared with males who do not. These males want high authoritative mothers, are benefitted when they get them, and are harmed when they do not. Conversely, females who prefer low authoritative mothers and have them experience markedly higher psychological problems compared with females who do not. These females do not want authoritative mothers but are still benefitted when they get them and harmed when they do not.

This brings up the question of why male and female psychological problems are similarly high when perceived maternal authoritative style is low and similarly low when maternal authoritative style is high, despite their opposing preferences. Although the findings regarding perceived style are consistent with prior research (i.e., perceived high authoritative style is beneficial), the reversal between male and female preferences is of interest. Perhaps females who perceive low maternal authoritative style have grown to prefer it as a method of identifying with their same-sex parent (e.g., Bem, 1974), despite the negative consequences. These mothers may provide less warmth and structure to their daughters, resulting in daughters disengaging from traditional gender role expectations and not preferring supportive mothers; perhaps these daughters are coping with their nonsupportive mothers by accepting it as reality and stating it as a preference as a method of control over their own lives. Alternatively, these daughters may prefer less maternal authoritative support and structure while at college because it allows them to engage in risky behaviors they perceive as desirable but result in negative outcomes. Conversely, females who do not prefer their mothers to be authoritative but have this as the case anyway may represent a section of emerging adult college students seeking autonomy and thus wanting less maternal support and structure but still benefitting when they perceive it.

When examining the three-way interaction for paternal authoritative style, the two-way interaction effect of perceived and preferred style was significant for males only. Males preferring and perceiving high paternal authoritative parenting experienced the lowest psychological problems. However, males who preferred low paternal authoritative style did not benefit similarly

from high perceived authoritative style as those who also preferred it. These males may have fathers who provide them with support and structure but are striving for autonomy while at college, resulting in their lowered preference for an authoritative father.

The maternal authoritarian and permissive style preferred $\times$ perceived interactions were significant for females only, and the paternal authoritarian and permissive style preferred $\times$ perceived interactions were not significant for either gender. For maternal authoritarian style, females reported the lowest psychological problems when they perceived high maternal authoritarian style but preferred low authoritarian style, and they reported the highest psychological problems when they perceived low maternal authoritarian style and preferred it. Females who preferred high maternal authoritarian style experienced more moderate psychological problems, regardless of perceived maternal authoritarian style, than those who preferred low maternal authoritarian style. This interaction suggests that females who do not want their mothers to be authoritarian are benefitted when she is and harmed when she is not. As noted above, these females may represent a group who perceive their mothers as meddling in their college affairs and experience more psychological problems related to having too much freedom, enabling them to engage in risky behaviors. Consistent with prior research, males who preferred low but perceived high maternal authoritarian style experienced the highest psychological problems. This group could represent males who are striving for autonomy and desire their mothers to be flexible and warm but instead perceive the opposite, resulting in increased psychological problems. Alternatively, mothers of these males may become increasingly authoritarian in response to misbehavior by sons, whose problems evoke harsher responses from their mothers.

Finally, females who perceived low maternal permissive style reported similarly moderate psychological problems regardless of preference; however, females perceiving high maternal permissive style experienced poorer outcomes when they also preferred it compared with those who did not. Again, as noted above, females wanting and receiving high permissive maternal parenting are likely freer to engage in risky behaviors, resulting in poorer outcomes. However, females who do not want but still perceive high permissive parenting may know better than their mothers. That is, they believe their mothers should be less permissive than they are and thus limit their risky behavior themselves.

Limitations and Implications

It is important to note several limitations in the current study. As a correlational study with cross-sectional data, the results are limited in explaining the

directionality of the relationship between the variables and inferring causation. For example, psychological problems may cause perceptions and preferences of parenting styles to be viewed more negatively rather than vice versa. Future research may benefit from examining whether preferred and perceived parenting practices yield similar outcomes throughout different periods of development as well as using longitudinal data to determine directionality. However, given the lack of research on child preferences in parenting, it was beneficial to examine these processes. Additionally, the use of self-report from a single informant renders the study vulnerable to response biases. It should be noted that researchers (e.g., Achenbach & Rescorla, 2003; Finley et al., 2008; Yahav, 2006) have established self-report to be a valid measure of parenting, especially during emerging adulthood when individuals are freer to express their minds. Nonetheless, future research should recruit multiple informants and observe parent–child interactions. The current sample also consisted predominantly of participants originating from a Southern state, limiting generalizability. For example, research suggests that the region in which children are raised may influence their opinion on how their parents should act. Specifically, Southern parenting may be characterized by high levels of demandingness and support alongside strictness, which may be viewed as more normative as well as more loving relative to other regions (Flynn, 1994; Lansford, 2010, McKinney & Brown, 2017).

Despite these limitations, the current study provides several contributions. Notably, a range of perceptions and preferences were observed in the current study, suggesting that emerging adults represent a heterogeneous group of individuals. Some groups of emerging adults were not surprising as they preferred and perceived high authoritative style and were benefitted by it; however, many groups' preferences were not consistent with their perceptions, this effect was conditional on gender, and many viable explanations exist for these findings. Thus, researchers and clinicians alike are encouraged to consider individual differences in these characteristics and to assess a broader range of variables to better understand the processes underlying the effects observed in the current study.

Emerging adults typically report wanting their parents to provide them with a certain parenting style, one characterized by increased autonomy granting as well as continued support (e.g., Cullaty, 2011, Schiffrin et al., 2014); however, results of the current study suggest that too much autonomy may be associated with psychological problems, especially in females, possibly related to increased engagement in risky behavior and/or lack of support. Parents and emerging adults finding the “just right” amounts of autonomy, structure, and support appears to be a critical task during this period, where too much or not enough can be harmful (i.e., goldilocks effect).

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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Contributing Writer

How 4 Different Parenting Styles Can Affect Your Kids

FIND OUT WHAT YOUR PARENTING STYLE IS AND WHAT IT MEANS FOR YOUR KIDS.

Parenting has got to be one of the toughest jobs out there. So many decisions to make, so many opinions to contend with, so many options for how to handle things—how are we supposed to know what’s “right”? And then dealing with the consequences our parenting choices can have on our kids—talk about pressure. For years, researchers have been tangling with this critical (and, let’s be honest, often confusing) topic. While there are definitely nuances to every approach, psychologists generally recognize four parenting styles that influence how you raise your child—and how well adjusted your child may become.

Baumrind’s Parenting Styles

Diana Baumrind, a developmental psychologist, first laid out these types of parenting styles in the 1960s through her research at the University of California, Berkeley. She conducted a series of studies that looked at people’s approach to parenting based on the demands they placed on their children and their responsiveness to their kids’ needs, and identified three primary parenting styles. A fourth parenting style was added later by two other researchers.

1. **Authoritarian Parenting Style:** Authoritarian parenting is a strict style in which parents set rigid rules and high expectations for their children but don’t allow them to make decisions for themselves. When rules are broken, punishments are swift and severe.
2. **Authoritative Parenting Style:** Authoritative parents provide their children with boundaries and guidance, but give their children more freedom to make decisions and

learn from their mistakes.

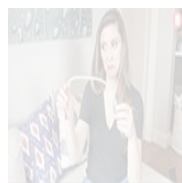
3. **Permissive Parenting Style:** Permissive parents give their kids very few limits and have more of a peer relationship than a traditional parent-child dynamic. They're usually super-responsive to their kids' needs (think helicopter parent) and give in to their children's wants.
4. **Neglectful Parenting Style.** A style added later by researchers Eleanor Maccoby and John Martin, neglectful parents don't interact much with their kids, placing no limits on their behavior but also failing to meet their children's needs.

These four parenting styles—which still form the foundation for much of today's research into childhood development—make up a broad spectrum of behavior that explains how most parents care for their kids. Of course, every parent-child relationship is unique and every day is different, but chances are, your natural mode of parenting falls somewhere among Baumrind's parenting styles.

Not sure which of the different parenting styles represents your own? Find out more about the parenting styles below to see which one fits you.

Authoritarian Parenting Style

“In authoritarian parenting, you're saying ‘I don't trust you to manage things, but rather than doing things for you, I'm going to force you to do what's right,’” says Alyson Schafer, a Toronto-based therapist and author of *Honey, I Wrecked the Kids*. Parents are the rulers of the roost—and it's their way or the highway. This is an old-school type of parenting, where rules are strict and don't leave much room for interpretation, punishments are swiftly meted out, and kids rarely have a say in making decisions or choosing things for themselves.



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What authoritarian parenting looks like

If you regularly find yourself saying, “Because I said so,” you might have an authoritarian bent to your approach to raising kids. Authoritarian parents have strict rules that should be followed no matter what, decide things for the child without their input, resort to punishment to ensure obedience, and may be less affectionate or “warm and fuzzy” than parents who subscribe to other parenting styles.

Effects of authoritarian parenting

“Kids [in authoritarian households] will behave as long as the autocratic leader is in the room,” Schafer says. “But the minute you leave—especially when they’re a little older and finally get a taste of freedom—they’ll either rebel or look for someone else to show them what to do.”

Schafer says children raised through authoritarian parenting tend to:

- Develop a “follower” mentality and readily conform without thinking for themselves
- Have a hard time discerning right from wrong on their own
- Struggle with self-esteem issues, relying on other authority figures to confirm they have worth

Authoritative Parenting Style

Of the parenting styles, this is often considered the gold standard—the happy medium between the strict authoritarian parenting style and the permissive approach. Authoritative parents do set limits for their children, but are also responsive to their needs. Consider it a firm but nurturing style. “Parents operate like CEOs, but in a friendly way that is respectful and allows the child to learn from consequences,” Schafer says.

What authoritative parenting looks like

Authoritative parents give their children room to make decisions and learn from mistakes—but still offer the guidance and rules kids need. When children break the rules, punishments usually stem from the natural consequences of their behavior—and parents take the time to explain why the child’s behavior needed correction.

Effects of authoritative parenting

Of the different parenting styles, most [studies](#) and experts point to authoritative parenting as the best for raising well-adjusted, confident and successful kids. “Authoritative parenting is the optimal goal,” says Fran Walfish, a Beverly Hills, California–based child, parenting and relationship psychotherapist and author of *The Self-Aware Parent*. “Each parent must balance warmth, love and nurturing with boundaries, setting limits, following through and taking action to make sure their kids complete their responsibilities. This promotes raising confident, happy, flexible and resilient children.”

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Authoritative parenting is said to help children:

- Become self-assured and happy, thanks to their parents’ attentive nurturing
- Learn how to handle responsibility and make good decisions on their own
- Figure out how to overcome obstacles, since they’re given the opportunity and encouragement to keep trying
- Trust their own judgment

Permissive Parenting Style

This is the most lax of the parenting styles. Permissive parents act more like their child's friend, rather than taking a leadership role in the family. Parents are super-responsive to their kids' wants and needs, but don't want to make rules or do anything that'll be unpopular with their children. "These parents don't know how to set a limit," Schafer says. "But it's okay to set limits—you don't get to have M&Ms for breakfast."

What permissive parenting looks like

Picture Dudley Dursley from *Harry Potter*—a child who demands whatever he wants and knows he'll get it, or he'll act out until he gets his way. (Though generally, permissive parents give in to their children's whims almost immediately.) "You don't want the child ruling the roost—a 4-year-old shouldn't have the upper hand in a household," Schafer says.

Effects of permissive parenting

Permissive parenting tends to lend itself to one of two scenarios: "You end up with either a child who's entitled or incredibly anxious because there's nobody running the ship," Schafer says.

Walfish paints a bleaker picture of the most lenient of parenting styles. In the worst-case scenario, without boundaries, consequences, realistic expectations, any structure or protocol for appropriate behavior, she says, kids with permissive parents tend to:

- Grow up with poor emotion regulation
- Become rebellious and defiant when they don't get what they want
- Don't persevere when they're faced with challenging tasks
- Engage in antisocial behaviors, like drug and alcohol abuse, vandalism, theft and gangs

Neglectful Parenting Style

While not one of the original Baumrind parenting styles, neglectful parenting was added to the paradigm in 1983 by Eleanor Maccoby, a professor of psychology at Stanford University, and her colleague John Martin. In neglectful parenting, parents don't respond to a child's needs or

place any demands on their child. In its most extreme form, this type of parenting often leads to the authorities getting involved, since neglectful parenting puts a child in danger.

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What neglectful parenting looks like

You (hopefully) haven't seen this one in action—of the different parenting styles, this is the kind where the child is essentially left to raise himself. Neglectful parents are detached and uninvolved in their children's lives, and fail to meet their kids' needs—physically, emotionally or otherwise. Parents tend to not have much conversation or interaction with their children, and are usually absent from the bulk of their kids' activities. With no limits and a lack of guidance, children raised through neglectful parenting can act out through inappropriate behavior.

Effects of neglectful parenting

“Neglectful parents who place no demands and don't pay attention or respond to their children raise kids who have attachment difficulties because the bond between child and parent is so fleeting,” Walfish says. Kids raised with through this parenting style often grow up to:

- Battle with depression
- Struggle to form close connections with others due to a lacking parent-child bond
- Have failed relationships
- Express anger and hostility through delinquent behavior
- Isolate themselves from society

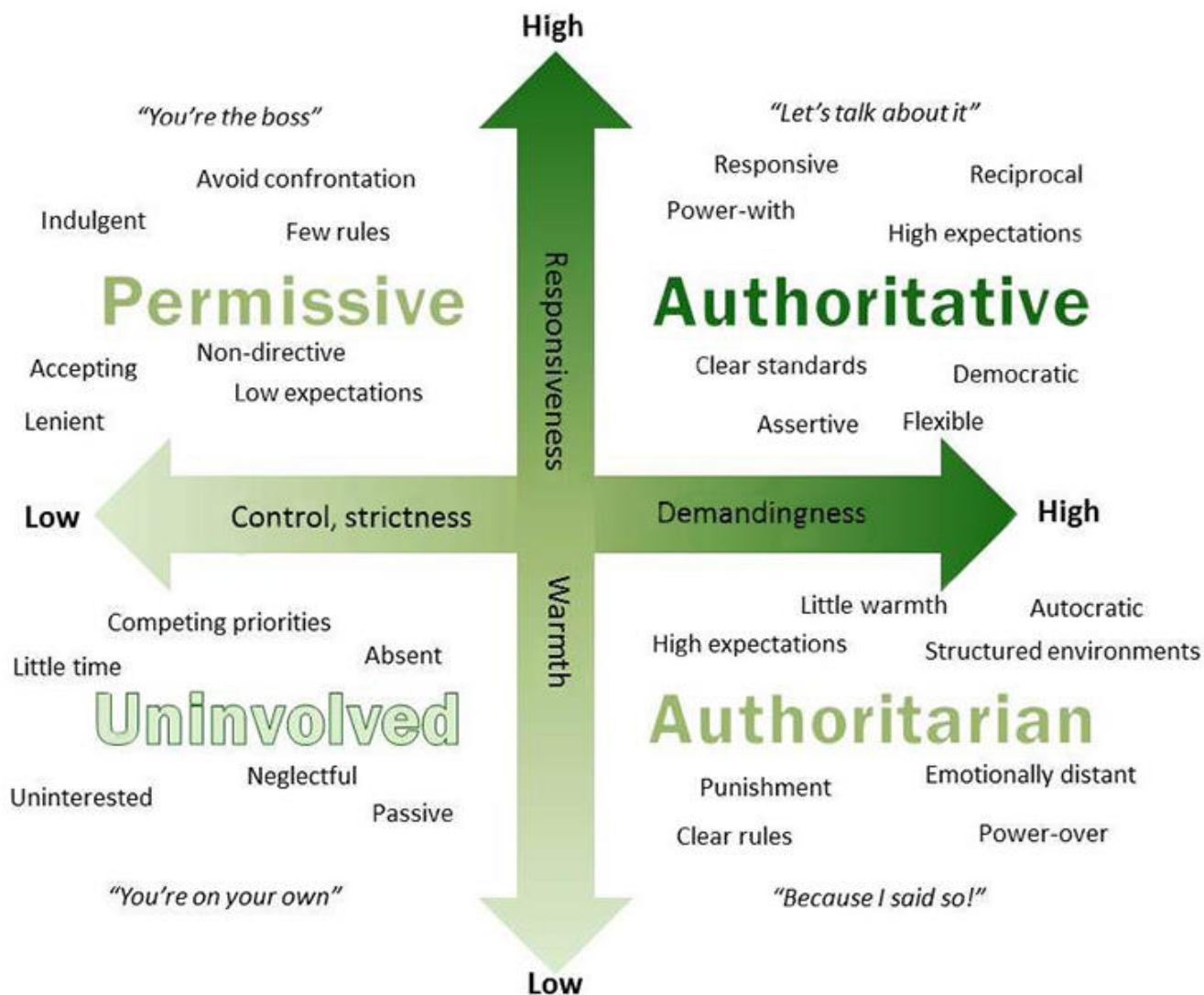


Photo: [Sustaining Community](#)

What Determines Our Styles of Parenting?

So which of the parenting styles are you? Whether it's the the super-strict style of the authoritarian approach or the indulgent permissive philosophy, parenting styles are largely influenced by your own experiences growing up. "Most parents have never deeply thought about their motivations and their belief system, and why they parent they way they do," Schafer says. "But we all have a history, and we have to unpack some of the stories of our childhood and compare them with common sense and science to come up with the right approach."

You may decide to follow in your parents' footsteps—or veer in the exact opposite direction. "We look at what motivated and what didn't motivate us, and think about what we needed but

didn't get," Schafer says. "Someone whose father ruled with an iron fist may swing to other extreme and doesn't know how to set a limit."

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Your individual character is also an important factor in determining which of the parenting styles you end up using. "Our own personality type impacts everything we do," Schafer says. "If you seek control, you'll have a more controlling style and will be reactive to situations where you feel like you're losing control. If you tend to look for approval or comfort, you'll probably be more lax and lenient—even permissive or chaotic."

Dealing With Different Parenting Styles

Many of us are doing this parenting thing with a partner by our side. And just as we don't always see eye to eye on what to watch on Netflix or baby names, we may not always be on the same page with our parenting styles. But that's not necessarily a bad thing. "Parents have this idea that they have to parent on the same page, but that's not true," Schafer says. "Every parent is different, and children need to learn that different people treat them differently."

If you and your partner have different parenting styles, Schafer recommends keeping any conflict away from the kids. "What *isn't* healthy for children is when parents argue about their parenting in front of them, or if parents undermine each other. The rule should be: Whoever starts the discipline, finishes the discipline."

In many ways, having different approaches in the same family can be an advantage, since it gives you the opportunity to embrace the strengths of two different parenting styles. "If the kids [tend to listen well] and always stay in bed when dad does tuck-ins, let him be the tuck-in guy," Schafer says. "If you're more patient, you can help during homework." That's the surest way to set up your family for success.

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Of course, different families have different ways of doing things—but these parenting styles give us some good insight into the type of approach that helps raise a healthy, happy, well-adjusted child. Because at the end of the day, that's all we really want.

Plus more from The Bump, Types of Parenting Methods Infographic:

%% IMAGE 2 %%

Published June 2017



Bidirectional Associations Between Self-Regulation and Parenting Styles in Early Adolescence

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The goal of this study was to explore bidirectional associations between teens' self-regulation and maternal and paternal parenting styles (i.e., authoritative, authoritarian, and permissive-indulgent) over one year. As part of an ongoing longitudinal study, 489 teens ages 11–16 (51% female, 70% European American, 69% in two-parent households) and their parents completed questionnaires on two occasions. Analyses revealed high temporal stability of parenting and self-regulation over time. No cross-lagged effects emerged in either authoritative parenting model. Bidirectional effects were observed in the maternal authoritarian parenting model only. Child effects on parenting were revealed in both permissive-indulgent parenting models. The interpretation of these findings and their implications for future research are delineated in the discussion.

Self-regulation is the ability of an individual to actively or passively monitor, evaluate, modify, and inhibit one's emotions or behavior to achieve one's personal goals in agreement with societal standards of behavior (Moilanen, Shaw, & Fitzpatrick, 2010b). These skills are vital for the prevention of maladaptive developmental outcomes in adolescence, including sexual risk-taking, delinquency, and substance use (Brody & Ge, 2001; Luyckx et al., 2011; Quinn & Fromme, 2010; Tangney, Baumeister, & Boone, 2004), and the promotion of positive outcomes, such as prosocial behavior and academic achievement (Bowers et al., 2011; Moilanen, 2007). Much research points to parenting practices and global styles of parenting as crucial covariates of self-regulation and adjustment during childhood and adolescence (Morris, Silk, Steinberg, Myers, & Robinson, 2007). Parenting practices refer to specific behaviors that socialize the adolescent toward some particular skill or behavior, such as regulating emotions (Darling & Steinberg, 1993; Morris, Cui, & Steinberg, 2013). Collectively, such parenting

practices comprise parenting styles by encompassing the enduring emotional climate of the parent/child relationship (Baumrind, 2013). In terms of the elements of adjustment enumerated previously, the authoritative parenting style and its associated practices appear beneficial, while authoritarian and permissive-indulgent and neglectful styles and practices are detrimental (Brody & Ge, 2001; Davidov & Grusec, 2006; Moilanen et al., 2010b; Steinberg, Blatt-Eisengart, & Cauffman, 2006).

Yet to date this literature remains limited in several key ways. First, much of the adolescent-era research has emphasized discrete parenting practices versus global parenting styles. It is important to explore parenting styles in order to provide a comprehensive picture of the development of self-regulation, as focusing on individual parenting practices eliminates much contextualizing information that may enrich our understanding of these developmental processes (O'Connor, 2002). Second, maternal parenting has received near-exclusive scrutiny in research on self-regulation, with only a few investigations considering paternal contributions alone or in conjunction with maternal parenting during early childhood. A growing body of literature emphasizes that maternal and paternal parenting of individual adolescents varies in terms of quantity and quality and that it cannot be safely assumed that parenting by mothers and fathers is functionally equivalent (Hoeve, Dubas,

We thank the Family Studies Center at Brigham Young University (BYU), the School of Family Life, and the College of Family Home and Social Science at BYU, and we recognize the generous support of the many private donors who provided funding for this project. We also thank the families who were willing to spend valuable hours with the members of the research team, and the many students who assisted in conducting the interviews.

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Gerris, van der Laan, & Smeenk, 2011; Steinberg & Silk, 2002). Third, almost all knowledge about the longitudinal linkages between self-regulation and parenting styles corresponds to childhood. This leaves an unexplored assumption that parenting *continues* to support the ongoing development of self-regulatory abilities in adolescence above and beyond the contributions already made during childhood. Finally, there is growing consensus that children and teenagers influence the parenting they receive (Bell, 1968; Grusec & Goodnow, 1994), a possibility that has been widely overlooked in primarily cross-sectional investigations during the adolescent years. These gaps are addressed in the current study, in which we explored bidirectional relations between adolescents' self-regulation and maternal and paternal parenting styles (authoritarian, authoritative, and permissive-indulgent styles) over one year during early- to mid-adolescence.

The Influence of Parenting on Adolescents' Self-Regulation

A number of studies have indicated that children's regulatory abilities remain relatively stable from early childhood through middle adolescence (e.g., inhibitory control from ages 2 to 4.5 years: Kochanska, Murray, Jacques, Koenig, & Vandegeest, 1996; self-regulation from ages 4–5 to ages 12–13: Raffaelli, Crockett, & Shen, 2005; effortful control from ages 8–12 to ages 11–15: Lengua, 2006; intentional self-regulation from school Grades 5 to 12: Bowers et al., 2011). Optimal self-regulation is the presumptive product of parental socialization, which takes place as parents explicitly and implicitly communicate to children what is and is not appropriate behavior (e.g., through behavioral models, parenting practices, and the family's emotional climate). Morris et al. (2007) suggested that specific parenting styles influence children's emotional regulatory abilities as part of the context of the global familial emotional atmosphere. Of particular interest here are authoritative, authoritarian, and permissive-indulgent styles, which were included as continuous variables versus discrete parenting style categories in the current investigation. We discuss what little is known about the links between styles of parenting and adolescent self-regulation below, augmenting this overview with relevant literature on the parenting practices that correspond to each style, while distinguishing between maternal and paternal parenting when possible.

Authoritative parenting. An authoritative parenting approach is high on warmth/acceptance and control dimensions (Baumrind, 1991). Authoritative parents are responsive and express warmth, but establish appropriate boundaries and provide external controls that promote the development of self-regulation by providing clear standards for behavior, engaging in active monitoring, and reducing children's negative affect (Sroufe, 1996). Gradually across development, the external controls that parents provide are internalized; parental warmth/responsivity increases the likelihood that children will attend to parents' guidance for developing strategies for self-regulation (Olson, Bates, & Bayles, 1990). There is an abundance of evidence supporting the assertion that high levels of warm and accepting maternal parenting are associated with optimal self-regulation during the first two decades of life. In the one known study on the authoritative parenting style and self-regulation, Patock-Peckham, Cheong, Balhorn, and Nagoshi (2001) found that, for women in emerging adulthood, maternal authoritative parenting was positively related with regulatory skills, while paternal authoritative parenting was not associated with females' self-regulation, and neither paternal nor maternal authoritative parenting predicted males' self-regulatory abilities. For parenting practices associated with authoritative parenting, Eiden, Colder, Edwards, and Leonard (2009) revealed that high maternal warmth/acceptance at age 2 predicted rank-order improvements in self-regulation (i.e., effortful control and internalization of maternal and paternal rules) by age 3; this association was not similarly demonstrated for paternal warmth/acceptance. This is also reflected in the literature on adolescent self-regulation, with high levels of adolescent- and/or parent-reported parental acceptance or involvement corresponding to high levels of teens' self-reported behavioral regulation between ages 10 and 14 (Brody & Ge, 2001; Finkenauer, Engels, & Baumeister, 2005); rank-order change was not explored in either of those studies. Albeit less consistently than warmth/acceptance, maternal behavioral control (e.g., the provision of boundaries, monitoring, etc.) has also been related to positive outcomes in self-regulation during childhood and adolescence. Adolescent-reported parental behavioral control was not predictive of adolescents' self-reported regulatory abilities in at least two cross-sectional investigations involving young people ages 10 to 14 and 11 to 17, respectively (Finkenauer et al., 2005; Moilanen, 2007). Bowers et al. (2011)

revealed that youth who followed favorable trajectories of intentional self-regulation (i.e., cognitive and behavioral regulation in pursuit of goals) between fifth through eleventh grades reported higher levels of parental monitoring in fifth grade than did teens who followed unfavorable trajectories. Overall, the evidence for direct effects of parental behavioral control is limited and inconsistent, while the data on maternal acceptance/warmth is comparatively robust.

Authoritarian parenting. Authoritarian parenting is grounded in high levels of parental control and demandingness and low levels of parental warmth and acceptance (Baumrind, 1991). Authoritarian parents may inhibit the development of self-regulation by engaging in hostile or demanding behaviors that may lead children to be emotionally over-aroused and thus have difficulty self-regulating in the future (Sroufe, 1996). Over-control by parents may teach children to suppress negative emotions, which makes them less likely to internalize parents' expectations, or it may deprive children of opportunities to figure out self-regulatory strategies independently (Grolnick, McMenamy, & Kurowski, 1999). As with the authoritative parenting style, there is limited information available about the authoritarian style and self-regulation during the teen years. In a cross-sectional study of college students, Patock-Peckham et al. (2001) revealed no associations between maternal or paternal authoritarian parenting and youths' self-regulation levels. In terms of associated parenting practices, high levels of maternal rejection have predicted poor behavioral and emotional regulatory skills over time among at-risk boys ages 10 to 11 (Moilanen et al., 2010b). Further, Brody and Ge (2001) revealed contemporaneous associations between harsh-conflicted parenting and adolescents' behavioral regulation at ages 11–12 and 12–13 years. In sum, there is some evidence that high levels of authoritarian parenting and its associated practices undermine the development of self-regulation in early adolescence.

Permissive-indulgent parenting. Permissive-indulgent parenting is marked by high levels of warmth and acceptance and very low levels of behavioral control (Baumrind, 1991). Permissive parents do little to provide children with boundaries or expectations for appropriate behavior (Baumrind, 1991). Thus, teens are unable to learn how or when to self-regulate in the absence of such guidance, and are likely to engage in impulsive, dysregulated

actions such as substance use and delinquency (Luyckx et al., 2011; Tangney et al., 2004). Despite robust evidence for the link between permissive-indulgent parenting and risk behaviors often attributed to self-regulation, there is limited direct support for the association between the permissive-indulgent parenting style and self-regulatory abilities in the adolescence literature. Patock-Peckham et al. (2001) found that for college students of both sexes, high levels of permissive parenting in a same-sex parent was significantly correlated with low self-regulation skills. In sum, of the three focal parenting styles in this study, the least is known about potential effects of permissive-indulgent parenting on adolescents' self-regulation.

The Influence of Adolescents' Self-Regulation on Parenting

In nearly all of the studies on parenting and self-regulation reviewed thus far, the implicit assumption is that parenting styles cause improvements in children's self-regulation, despite widespread acknowledgement and growing empirical evidence that parents and children influence each other's behaviors and development bidirectionally over time (Bell, 1968; Grusec & Goodnow, 1994; Padilla-Walker, Carlo, Christensen, & Yorgason, 2012). Specifically, children with difficult temperaments (i.e., poor self-control combined with high emotional reactivity) elicit harsher, less optimal parenting than do children with easy temperaments (Scaramella & Leve, 2004). Difficult children are faced with the "double whammy" of experiencing strong negative emotions while lacking the skills to control those feelings, which results in frequent outbursts. Frustrated with such displays, parents tend to react harshly instead of sensitively, further escalating children's negative internal states (Sroufe, 1996; Zucker, 1994). Children may then focus their efforts on repairing their feelings instead of on learning how to regulate their feelings or behaviors (Grusec & Goodnow, 1994). Ultimately, these parent/child interactions give these under-regulated youth higher levels of negative feelings that require modulation, while depriving them of opportunities to learn how to self-regulate (Scaramella & Leve, 2004). After many unsuccessful exchanges, parents may cease their attempts to regulate out-of-control children, often becoming highly permissive to maintain harmony at home (Pardini, Fite, & Burke, 2008; Patterson, 1982).

There is limited, inconsistent evidence of bidirectional associations between self-regulation and

parenting in early to middle childhood. For example, in one study parents of infants whose levels of regulatory control increased rapidly between 4 and 12 months of age reported low levels of negative parenting when children were 18 months (Bridgett et al., 2009). No child effects on parenting were observed in the study described by Eisenberg et al.'s (2005) 6-year investigation on effortful control in children ages 7–16 or in Lengua and Kovacs's (2005) 1-year study of self-regulation (i.e., inhibitory control, impulsivity, and attention regulation) in children ages 8–11 years. In a follow-up of the same sample, Lengua (2006) revealed that high initial levels of effortful control at ages 8–12 predicted decreases in maternal rejection over 2 years, but this pattern was not repeated for maternal inconsistency. To date, there is only one known study in which such cycles between parenting and self-regulation have been explored during the teen years. In this investigation, Brody and Ge (2001) revealed that teens' high levels of behavioral self-regulation at ages 11–12 years predicted rank-order decreases over 1 year in a latent factor of maternal and paternal conflicted-harsh parenting. No child-driven effects were observed for changes in nurturant-responsive parenting (Brody & Ge, 2001). The current study builds on this early work by Brody and Ge, seeking to more fully illustrate potential bidirectional links by considering additional parenting dimensions that compose authoritative, authoritarian, and permissive-indulgent parenting styles and the unique contributions of mothers and fathers.

Control Variables

The present investigation also explored the effects of several control variables that are known or potential correlates of self-regulation and/or parenting styles. Sex and age differences in self-regulation are well-documented, consistently revealing that girls are advantaged over boys and older over younger teens in types of self-regulatory abilities throughout the first two decades of life (Quinn & Fromme, 2010; Raffaelli et al., 2005). Sex differences in parenting styles have not been revealed in research to date, but age differences and longitudinal changes have been recorded in various dimensions of parenting that comprise the three styles of focus in this investigation (for a review, see Steinberg & Silk, 2002). Few racial/ethnic differences in self-regulatory abilities have been revealed in childhood or adolescence, and generally these effects have been small and mitigated by the inclusion of socioeconomic status (SES) in

statistical models (e.g., inhibitory control: Moilanen, Shaw, Dishion, Gardner, & Wilson, 2010a). Overall, children living in low-SES households tend to have poorer effortful control than their economically advantaged counterparts (Li-Grining, 2007). Similar patterns have emerged for parenting styles, such that African American parents are more likely to have authoritarian orientations while European American parents are more likely to demonstrate authoritative patterns (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987). That there are variations in parenting styles attributable to family structure is well established. Mothers in single-parent households tend to be less authoritative, particularly following divorce (Hagan, Hollier, O'Connor, & Eisenberg, 1992). Less is known about single fathers, but research generally suggests that, although contact from nonresidential fathers is more frequent than is often perceived, the quality of father/child interactions often declines after divorce (Amato & Dorius, 2010). To our knowledge, variations in self-regulation by family structure have only been considered in one study of young children: Early Head Start staff rated the behavioral regulation of three-year-olds more highly if they resided with their father or had highly engaged nonresident fathers than uninvolved fathers (Vogel, Bradley, Raikes, Boller, & Shears, 2006). Thus, we explored these possibilities in adolescence by controlling for parental marital status, and in paternal models only whether the child's father was a biological relative.

The Current Study

Despite theoretical propositions that there are bidirectional associations between children's self-regulation and parenting styles and behaviors (Morris et al., 2007; Scaramella & Leve, 2004), to date there is little available empirical support for such bidirectional links in adolescence. Furthermore, much of the research on self-regulation during the teen years has involved single-informant designs that include adolescent self-reports of self-regulation and teens' reports of their parents' behaviors, with little if any distinctions made between the behaviors of mothers and fathers. This is of concern, given that both mothers and fathers may make differential contributions to the development of self-regulation (Padilla-Walker & Christensen, 2011). Further, there are documented differences in the quantity of time mothers and fathers spend with their children, but also in the quality of the interactions they have with their offspring during

adolescence (Steinberg & Silk, 2002), including their reactions to children's emotional displays (Cassano, Perry-Parrish, & Zeman, 2007; Youniss & Smollar, 1985). Thus, the primary goal of the current study was to address these gaps in the literature, supported by a multi-informant, longitudinal study of typically developing adolescents and their families (including both mothers and fathers). Establishing whether rank-order change occurs over time and identifying whether such changes can be attributed to either parental behaviors or children's characteristics is of tantamount importance for applied work, particularly the creation of developmentally appropriate, scientifically based intervention efforts.

Two primary hypotheses were addressed. First, we anticipated that high initial levels of maternal and paternal authoritative parenting, and low levels of maternal and paternal authoritarian and permissive-indulgent parenting, would predict high levels of subsequent adolescent self-regulation, while controlling for prior levels of self-regulation. Second, we postulated that high initial levels of adolescent self-regulation would in turn predict rank-order increases in authoritative parenting, and rank-order decreases in authoritarian and permissive parenting styles, while controlling for prior parenting in analyses. Regarding control variables, we hypothesized that high levels of self-regulation would be associated with female sex, older age in years, and high SES. Further, we posited that European American and high-SES families would be more likely to show high levels of authoritative parenting and low levels of authoritarian and permissive-indulgent parenting. There were no a priori hypotheses for the remaining control variables.

METHOD

Participants

The participants for this study were from Waves 3 and 4 of the Flourishing Families Project (FFP). This is a longitudinal study of family life involving families with one or more children between the ages of 11 and 16 at Wave 3 ($N = 473$; M age of child = 13.32, $SD = 1.06$, 51% female). Seventy percent of the participants were European American, 13% were African American, and 17% indicated that they were mixed/biracial or of other ethnic backgrounds. At Wave 3, this study included 298 two-parent families and 160 single-parent families. The majority of mothers and fathers reported being biological parents of the participating adolescents (>90%). Twenty percent of families reported

incomes <\$40,000 per year, 44% made between \$40,000 and \$100,000 a year, and 36% earned more than \$100,000 per year. Sixty percent of mothers reported having a bachelor's degree or higher levels of education. There was very little attrition: 99% of mother/child pairs and 95% of father/child dyads who participated in Wave 3 also had complete data for Wave 4.

Bias analyses comparing the subsamples with (63.6%) and without paternal data (36.4%), revealed few differences, generally suggesting that fathers were more likely to be present at either wave if they were the child's biological father, married, and of European American ancestry (Cramér's V range = .21–.78). Children missing paternal data (i.e., who were more likely to live in single-parent households) reported higher levels of maternal nonreasoning/punitive parenting at both waves than did children whose fathers participated in the study (η^2 range = .03–.04). The same pattern was evidenced for maternal permissive parenting at both waves (η^2 range = .02–.03). At Wave 3 only, children missing father data reported higher levels of maternal physical coercion than children with father data ($\eta^2 = .01$), and the mothers reported lower average cognitive and behavioral self-regulation scores for children without paternal data compared to children whose fathers participated in the study (η^2 range = .01–.02). No other differences were observed for any other study variables.

Procedures

Participants of the FFP were randomly selected from targeted census tracts in a large northwestern city and were identified using a purchased national telephone survey database (Polk Directories/InfoUSA, Papillion, NE, United States). Families were interviewed in their homes yearly, with each assessment involving questionnaires completed by the child, mother, and, when available, residential father (biological or step). The overall response rate of eligible families (families in the database with a child between the ages of 10 and 14) at Wave 1 was 61%. In an attempt to closely mirror the demographics of the local area, a limited number of families were recruited into the study through other means (e.g., referral, fliers; $n = 77$, 15%), resulting in 500 total families participating at Wave 1.

Measures

Descriptive statistics are provided for all study variables in Table 1.

TABLE 1
Descriptive Statistics

Variables	Wave	N	M (SD)	Range
Emotion regulation - maternal report	W3	443	2.92 (0.68)	1.00-4.00
	W4	455	2.97 (0.71)	1.00-4.00
Behavioral regulation - maternal report	W3	443	2.83 (0.64)	1.00-4.00
	W4	455	2.88 (0.61)	1.00-4.00
Cognitive regulation - maternal report	W3	443	2.89 (0.61)	1.00-4.00
	W4	455	2.94 (0.61)	1.00-4.00
Emotion regulation - paternal report	W3	305	2.90 (0.48)	1.00-4.00
	W4	313	3.00 (0.68)	1.00-4.00
Behavioral regulation - paternal report	W3	305	2.80 (0.55)	1.25-4.00
	W4	313	2.76 (0.56)	1.00-4.00
Cognitive regulation - paternal report	W3	305	2.85 (0.57)	1.00-4.00
	W4	313	2.91 (0.61)	1.00-4.00
Maternal autonomy granting	W3	439	3.36 (0.87)	1.00-5.00
	W4	452	3.30 (0.87)	1.00-5.00
Maternal connection	W3	439	3.86 (0.81)	1.00-5.00
	W4	452	3.81 (0.81)	1.20-5.00
Maternal regulation	W3	439	3.35 (0.86)	1.00-5.00
	W4	452	3.28 (0.83)	1.00-5.00
Paternal autonomy granting	W3	301	3.33 (0.88)	1.00-5.00
	W4	312	3.25 (0.86)	1.00-5.00
Paternal connection	W3	301	3.65 (0.82)	1.20-5.00
	W4	312	3.61 (0.82)	1.00-5.00
Paternal regulation	W3	301	3.27 (0.89)	1.00-5.00
	W4	312	3.22 (0.82)	1.00-5.00
Maternal verbal hostility	W3	439	2.28 (0.82)	0.75-5.00
	W4	452	2.32 (0.88)	1.00-5.00
Maternal physical coercion	W3	439	1.33 (0.53)	0.00-4.00
	W4	452	1.32 (0.57)	1.00-4.25
Maternal nonreasoning	W3	439	2.08 (0.76)	0.75-5.00
	W4	452	2.11 (0.80)	1.00-4.75
Paternal verbal hostility	W3	300	2.27 (0.83)	0.75-5.00
	W4	312	2.35 (0.87)	1.00-5.00
Paternal physical coercion	W3	301	1.36 (0.57)	1.00-5.00
	W4	312	1.34 (0.55)	1.00-4.00
Paternal nonreasoning	W3	301	1.96 (0.72)	1.00-4.00
	W4	312	2.04 (0.81)	1.00-4.50
Maternal permissive/indulgent	W3	439	2.39 (0.68)	1.00-4.80
	W4	452	2.40 (0.71)	1.00-4.40
Paternal permissive/indulgent	W3	301	2.23 (0.62)	1.00-4.40
	W4	312	2.20 (0.66)	1.00-4.60

Note. W3, Wave 3; W4, Wave 4.

Control variables. At prior waves of the study, participants reported the child's sex (0 = *female*, 1 = *male*) and race/ethnicity (0 = *other*, 1 = *White*). At Wave 3, participants reported the child's age in years, and parents reported the total combined family income (for single parents, their sole income was used), which ranged from 1 (*under \$20,000 per year*) to 12 (*at least \$120,000 per year*). Mothers and fathers also reported their current marital status (0 = *single, separated, divorced, widowed, etc.*, 1 = *married*), and fathers indicated whether they were biologically related to the participating teenager (0 = *no*, 1 = *yes*).

Parenting styles. At both waves, adolescents reported on mothers' and fathers' parenting using the Parenting Styles and Dimensions Questionnaire-Short Version (PSDQ; Robinson, Mandelco, Olsen, & Hart, 2001). For each item, youth used a 5-point response scale ranging from 1 (*never*) to 5 (*always*). High scores indicated high levels of each parenting style.

For authoritative parenting, adolescents indicated how often their parents engaged in certain behaviors characteristic of connection (5 items, e.g., "My parent is responsive to my feelings and needs"), regulation (5 items, e.g., "My parent emphasizes the reasons for rules") and autonomy granting (5 items, e.g., "My parent takes my desires into account before asking me to do something"). Items were averaged to form three subscales for each parent at each wave, and these subscales were used as indicators of latent variables for maternal and paternal authoritative parenting. Across waves, Cronbach's alphas ranged from .79 to .84 for both parents.

For authoritarian parenting, adolescents were asked how often their parents engaged in various behaviors characteristic of physical coercion (4 items, e.g., "My parent slaps me when I misbehave"), verbal hostility (4 items, e.g., "My parent yells or shouts when I misbehave") and punishment (4 items, e.g., "My parent punishes me by taking away privileges with little if any explanation."). Items were averaged to form three subscales for each parent at each wave, and these subscales were used as indicators of latent variables for maternal and paternal authoritarian parenting. Across the two waves, Cronbach's alphas ranged from .66 to .77 for mothers and .69 to .80 for fathers.

For permissive-indulgent parenting, adolescents answered five items regarding how permissive and/or indulgent their parents were (e.g., "My parent gives in to me when I get upset about something"). Raw items were used to form latent variables of permissive-indulgent parenting at both waves. (Although not used in analyses, scale scores formed by averaging the items are presented in Table 1.) Cronbach's alphas for at Waves 3 and 4, respectively, were .58 and .62 for mothers and .50 and .57 for fathers.

Adolescent self-regulation. At both waves, mothers and fathers responded to 12 items about their adolescents' emotional, behavioral, and cognitive self-regulation (Novak & Clayton, 2001). Emotion regulation was assessed with five items

(sample item: "My child has difficulty controlling his/her temper"; maternal α range = .88–.89; paternal α range = .89–.89), behavior regulation with four items (sample item: "My child gets fidgety after a few minutes if s/he is supposed to sit still"; maternal α range = .76–.79; paternal α range = .73–.73), and cognitive regulation with three items (sample item: "Once my child has a goal, she/he makes a plan how to reach it"; maternal α range = .81–.82; paternal α range = .80–.82). For all statements, responses ranged from 1 (*never true*) to 5 (*always true*), with items reverse-scored when necessary, and higher scores representing higher mother- and father-reports of their child's self-regulation. At each wave, the three subscales were calculated separately for each respondent by averaging across the items.

Preliminary Analyses

Patterns of missing data were explored separately for each parent/child dyad. These analyses indicated that the likelihood of missing Wave 4 data was attributable to maternal marital status at Wave 3 (i.e., children were more likely to be present if their mothers were married at Wave 3). There were no differences in Wave 3 self-regulation scores between youth who were and were not present at Wave 4. Compared to children with maternal data for both Waves 3 and 4, children present at Wave 3 who were missing data at Wave 4 reported significantly lower levels of Wave 3 maternal autonomy granting, and higher levels of Wave 3 maternal physical coercion, verbal hostility, and nonreasoning. Fathers who did and did not provide Wave 4 data did not differ on any Wave 3 variables. Of the 31 tests performed, just five revealed significant associations (16%). Adjusting for the number of tests, only one of these six remained significant at $p < .0016$: children who were missing maternal parenting data at Wave 4 ($M = 2.25$, $SD = 1.26$) reported higher levels of physically coercive maternal parenting at Wave 3 than did children who had maternal parenting data at Wave 4 ($n = 436$, $M = 1.32$, $SD = 0.52$), $F(1, 441) = 20.69$, $p < .001$, $\eta^2 = .05$. As this mean difference was small in magnitude, we interpreted it as largely being due to chance.

These analyses suggested that data were missing at random (MAR), in that the probability of missingness was dependent upon youth and family characteristics measured prior to missing data points. When data are MAR, unbiased estimates can be generated for missing scores using full

information maximum likelihood (FIML) with all variables statistically associated with missingness controlled in the respective models (Enders, 2001).

Analysis Plan

Preliminary analyses consisted of bivariate correlations (see Table 2). Hypotheses were tested through fitting a series of cross-lagged path models. Three models were fitted for each parent, one for each parenting style dimension. For the authoritative and authoritarian models, the parenting variables were modeled as latent constructs defined by each broadband factor's respective subscales, and for the permissive-indulgent models, each latent parenting variable was defined by the five items comprising that scale. In all models, self-regulation was modeled as a latent variable defined by the three self-regulation subscales (emotional, behavioral, and cognitive dimensions). Wave 4 parenting was regressed upon the same measure of parenting and the child's self-regulation at Wave 3, while Wave 4 self-regulation was simultaneously regressed upon Wave 3 self-regulation and parenting. As the same informants responded to the same measures on two occasions, the residual variances of the repeated-measures indicators of the latent variables were allowed to covary over time. The residual variances between the latent parenting and self-regulation variables at Wave 4 were correlated by default, but the same correlation was specified at Wave 3 to improve model fit. Finally, the child's age, sex, race, parental marital status, and household income were controlled in each model, such that Wave 3 parenting and self-regulation were regressed upon these control variables at once. Paternal models also controlled for whether the father was biologically related to the child.

All analyses were conducted in M-Plus version 6.11 (Muthén & Muthén, 1998–2007). Requirements for acceptable model fit were a nonsignificant chi-square fit statistics (χ^2), χ^2 / df ratios smaller than 5.00, comparative fit indices (CFI) larger than .95, root mean square errors of approximation (RMSEA) smaller than .06, and standardized root mean square residuals (SRMR) smaller than .08 (West, Taylor, & Wu, 2012).

RESULTS

Authoritative Parenting

For both the maternal and paternal models of authoritative parenting, the data provided an ade-

TABLE 2
Bivariate Correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Male sex	1.00	.03	.06	.02	.06	.02	-.19**	-.07	-.18**	-.23***	-.02	-.18**	-.04
2 Race/ethnicity	.03	1.00	-.02	.29***	.28***	.20***	.02	-.06	.03	-.01	.01	.06	.08
3 Age	.06	-.02	1.00	-.05	-.08	-.04	.02	.04	.03	.02	.08	.01	-.02
4 Family income	.02	.29***	-.05	1.00	.56***	.17**	.04	.06	.13*	.11	.03	.13*	.09
5 Marital status	.06	.28***	-.08	.56***	1.00	.13*	.05	-.02	.02	.16**	.01	.02	.05
6 Biological father	.02	.20***	-.04	.17**	.13*	1.00	.22***	.03	.15*	.24***	.01	.04	.13*
7 Behavioral SR W3	-.19***	.13*	.07	.16**	.12*	.11	.57***	.39***	.54***	.71***	.30***	.48***	.19**
8 Emotional SR W3	-.01	.07	.05	.14**	.05	-.01	.47***	.68***	.40***	.41***	.78***	.29***	.17**
9 Cognitive SR W3	-.22***	.07	-.01	.15**	.11*	.06	.49***	.40***	.48***	.54***	.33***	.66***	.26***
10 Behavioral SR W4	-.12**	.12*	.09	.13**	.04	.14*	.77***	.40***	.40***	.53***	.28***	.27***	.14*
11 Emotional SR W4	.11*	.12*	.06	.13**	.09	-.01	.39***	.78***	.32***	.41***	.64***	.18**	.13*
12 Cognitive SR W4	-.19***	.17***	-.00	.14**	.11*	.11	.44***	.38***	.67***	.48***	.40***	.47***	.21***
13 Autonomy W3	-.03	.12*	-.09	.08	.05	.10	.16**	.19***	.21***	.12*	.19***	.19***	.89***
14 Connection W3	-.12*	.12*	-.12*	.07	.02	.06	.13**	.17***	.18***	.08	.20***	.13**	.78***
15 Regulation W3	-.04	-.03	-.13**	.03	.06	.03	.02	.06	.11*	.00	.06	.07	.62***
16 Autonomy W4	-.02	.17**	-.05	.11*	.04	.09	.12*	.13**	.18***	.13**	.19***	.24***	.67***
17 Connection W4	-.09	.19***	-.10*	.12*	.04	.13*	.12*	.17**	.21***	.11*	.19***	.25***	.61***
18 Regulation W4	.01	-.02	-.05	.08	.05	-.00	.02	.14**	.10*	.03	.12*	.12**	.48***
19 Verbal hostility W3	-.02	-.15**	.10*	-.07	-.03	.02	-.04	-.16**	-.07	.01	-.18***	-.10*	-.29***
20 Physical coercion W3	.12*	-.24***	.02	-.19***	-.10*	-.10	-.15**	-.22***	-.18***	-.10*	-.23***	-.22***	-.26***
21 Nonreasoning W3	.03*	-.22***	.05	-.24***	-.16**	-.03	-.15**	-.24***	-.23***	-.15**	-.27***	-.32***	-.40***
22 Verbal hostility W4	-.06	-.18***	.09	-.03	-.05	-.10	-.09	-.16**	-.08	-.15**	-.26***	-.20***	-.24***
23 Physical coercion W4	.07	-.26***	.05	-.12*	-.07	-.12*	-.12*	-.15**	-.18***	-.13**	-.23***	-.24***	-.24***
24 Nonreasoning W4	.06	-.15**	.03	-.17***	-.15**	-.04	-.22***	-.28***	-.25***	-.25***	-.35***	-.33***	-.39***
25 Permiss-indul W3	-.05	-.15**	.03	-.15**	-.15**	-.06	-.11*	-.11*	-.11*	-.09*	-.11*	-.16**	.01
26 Permiss-indul W4	-.03	-.09	.08	-.14**	-.15**	-.02	-.14**	-.13**	-.16**	-.16**	-.18***	-.23***	.02

Variable	14	15	16	17	18	19	20	21	22	23	24	25	26
1 Male sex	-.07	.02	-.09	-.08	-.01	.14*	.26***	.16**	-.04	.15**	.10	-.06	-.01
2 Race/ethnicity	.07	.02	.08	.08	.02	-.13*	-.20***	-.09	-.12*	-.21***	-.11	.05	.00
3 Age	-.13*	-.08	.03	-.06	-.09	.01	-.04	-.01	-.01	-.05	-.07	-.05	.07
4 Family income	.14*	.09	.08	.07	.09	-.02	-.11	-.10	.05	-.12*	-.07	-.05	.07
5 Marital status	.08	.10	.12*	.09	.15**	-.02	-.13*	-.02	-.09	-.06	-.09	-.01	-.10
6 Biological father	.06	.08	.05	.02	.02	.07	.04	-.10	.07	.01	.02	-.01	.01
7 Behavioral SR W3	.12*	.07	.12*	.11*	.05	-.08	-.13*	-.22***	-.10	-.13*	-.19**	-.04	-.15**
8 Emotional SR W3	.14*	.07	.07	.11*	.11	-.08	-.12*	-.23***	-.11	-.06	-.22***	-.04	-.15*
9 Cognitive SR W3	.15*	.10	.21***	.18**	.10	-.05	-.21***	-.28***	-.04	-.11	-.22***	-.08	-.14*
10 Behavioral SR W4	.09	.07	.13*	.10	.03	-.06	-.13*	-.18**	-.07	-.11	-.19**	-.08	-.17**
11 Emotional SR W4	.13*	.03	.18**	.14*	.10	-.15*	-.11	-.21***	-.20***	-.11	-.29***	-.04	-.13*
12 Cognitive SR W4	.16**	.07	.21***	.20***	.14*	-.10	-.20**	-.29***	-.08	-.12*	-.28***	-.00	-.15*
13 Autonomy W3	.78***	.65***	.66***	.62***	.49***	-.29***	-.21***	-.41***	-.28***	-.31***	-.34***	.01	-.07
14 Connection W3	.82***	.65***	.54***	.70***	.54***	-.25***	-.20***	-.37***	-.20**	-.28***	-.28***	.03	-.05
15 Regulation W3	.62***	.87***	.45***	.53***	.61***	.01	-.03	-.14*	-.04	-.09	-.14*	-.05	-.06
16 Autonomy W4	.53***	.38***	.85***	.75***	.56***	-.30***	-.19**	-.41***	-.41***	-.32***	-.50***	-.09	-.05
17 Connection W4	.64***	.43***	.76***	.79***	.57***	-.24***	-.15**	-.35***	-.37***	-.29***	-.41***	-.03	-.00
18 Regulation W4	.47***	.59***	.58***	.62***	.86***	.01	-.04	-.14*	-.02	-.08	-.13*	-.02	-.04
19 Verbal hostility W3	-.27***	-.04	-.26***	-.22***	-.03	.71***	.48***	.56***	.64***	.35***	.39***	.22***	.12*
20 Physical coercion W3	-.24***	-.06	-.19***	-.21***	-.03	.46***	.78***	.47***	.35***	.64***	.30***	.07	.15**
21 Nonreasoning W3	-.32***	-.08	-.38***	-.32***	-.14**	.54***	.53***	.80***	.51***	.40***	.64***	.21***	.20***
22 Verbal hostility W4	-.16**	.04	-.36***	-.33***	-.05	.65***	.33***	.44***	.77***	.47***	.63***	.18**	.26***
23 Physical coercion W4	-.18***	.01	-.21***	-.24***	-.01	.36***	.60***	.40***	.46***	.68***	.47***	.02	.14*
24 Nonreasoning W4	-.29***	-.11*	-.48***	-.40***	-.17***	.42***	.35***	.63***	.61***	.45***	.84***	.22***	.30***
25 Permiss-indul W3	-.01	-.01	-.06	-.06	-.03	.30***	.21***	.32***	.18***	.16**	.18***	.76***	.55***
26 Permiss-indul W4	.02	-.02	.02	.03	.02	.16**	.09*	.22***	.19***	.11*	.23***	.57***	.72***

Note. SR, Self-regulation; Permiss-indul, permissive-indulgent; W3, Wave 3; W4, Wave 4. Correlations for maternal variables are below the diagonal, and those for paternal variables are above the diagonal. Correlations on the bold diagonal are between maternal and paternal variables. Dummy variables were coded as follows: For sex, 1 = male, 0 = female. For race/ethnicity, 1 = European American, 0 = any other race/ethnicity.

* $p < .05$, ** $p < .01$, *** $p < .001$.

quate fit to the model, maternal model χ^2 fit (96) = 179.51, $p < .001$, χ^2/df ratio = 1.87, CFI = .98, RMSEA (90% CI) = .043 (.033–.053), SRMR = .041, paternal model χ^2 fit (107) = 154.31, $p < .01$, χ^2/df ratio = 1.44, CFI = .98, RMSEA (90% CI) = .037 (.023–.049), SRMR = .043. With some variation present in the associations with control variables,

the pattern of findings revealed in the maternal model was mirrored in the paternal model (see Figure 1; factor loadings are provided in the top panel of Table 3). There was high temporal stability in mothers' and fathers' reports of children's self-regulation and in children's reports of mothers' and fathers' authoritative parenting. No cross-

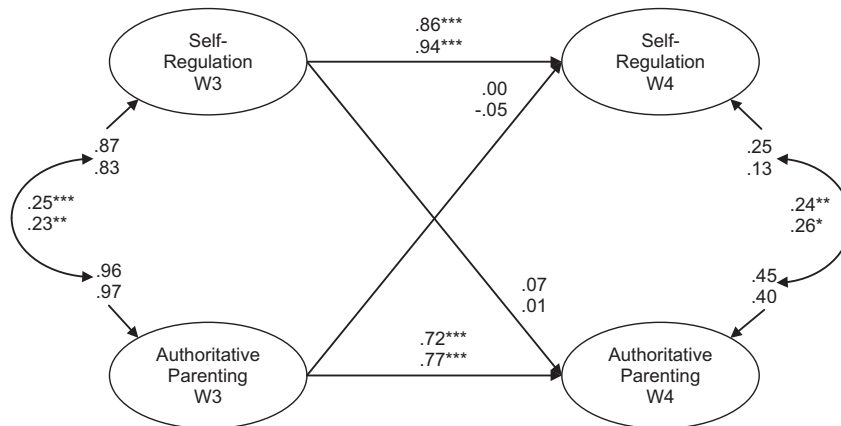


FIGURE 1 Full model for authoritative parenting. Top values are for mothers, and bottom values are for fathers. All coefficients are standardized.

* $p < .05$; ** $p < .01$; *** $p < .001$.

TABLE 3
Latent Variable Factor Loadings and Residuals

	<i>Maternal</i>				<i>Paternal</i>			
	<i>Wave 3</i>		<i>Wave 4</i>		<i>Wave 3</i>		<i>Wave 4</i>	
	λ (SE)	ε	λ (SE)	ε	λ (SE)	ε	λ (SE)	ε
Authoritative model								
Autonomy granting	1.00 (0.00)	.20	1.00 (0.00)	.30	1.00 (0.00)	.22	1.00 (0.00)	.35
Connection	0.90 (0.04)	.23	1.01 (0.05)	.17	0.94 (0.05)	.22	1.10 (0.06)	.12
Regulation	0.76 (0.04)	.52	0.81 (0.05)	.51	0.83 (0.05)	.47	0.83 (0.06)	.50
Behavior regulation	1.00 (0.00)	.47	1.00 (0.00)	.54	1.00 (0.00)	.42	1.00 (0.00)	.28
Emotion regulation	0.88 (0.08)	.64	0.95 (0.10)	.69	0.85 (0.12)	.72	0.68 (0.10)	.77
Cognitive regulation	0.91 (0.09)	.53	1.07 (0.11)	.46	0.96 (0.12)	.50	0.81 (0.11)	.60
Authoritarian model								
Nonreasoning/punitive	1.00 (0.00)	.32	1.00 (0.00)	.34	1.00 (0.00)	.40	1.00 (0.00)	.37
Verbal hostility	0.88 (0.07)	.55	1.00 (0.08)	.45	1.08 (0.11)	.48	1.08 (0.10)	.37
Physical coercion	0.54 (0.05)	.59	0.53 (0.05)	.63	0.66 (0.07)	.60	0.55 (0.06)	.61
Behavior regulation	1.00 (0.00)	.47	1.00 (0.00)	.56	1.00 (0.00)	.43	1.00 (0.00)	.31
Emotion regulation	0.93 (0.09)	.61	1.02 (0.10)	.66	0.88 (0.12)	.71	0.72 (0.10)	.76
Cognitive regulation	0.90 (0.09)	.54	1.06 (0.10)	.49	0.99 (0.11)	.49	0.84 (0.11)	.58
Permissive-indulgent model								
Item 20: Does not punish	1.00 (0.00)	.35	1.00 (0.00)	.32	1.00 (0.00)	.45	1.00 (0.00)	.39
Item 8: Finds discipline difficult	0.41 (0.08)	.90	0.45 (0.07)	.85	0.36 (0.10)	.93	0.53 (0.09)	.81
Item 15: Gives in	0.32 (0.08)	.93	0.28 (0.06)	.94	0.28 (0.10)	.96	0.40 (0.08)	.90
Item 17: Threatens punishment	0.76 (0.09)	.73	0.93 (0.09)	.52	0.82 (0.15)	.71	1.05 (0.12)	.49
Item 24: Spoils me	0.34 (0.07)	.92	0.27 (0.06)	.95	0.35 (0.10)	.93	0.21 (0.08)	.98
Behavior regulation	1.00 (0.00)	.46	1.00 (0.00)	.54	1.00 (0.00)	.38	1.00 (0.00)	.21
Emotion regulation	0.88 (0.08)	.63	0.94 (0.10)	.69	0.80 (0.12)	.73	0.63 (0.10)	.79
Cognitive regulation	0.91 (0.09)	.53	1.06 (0.11)	.46	0.90 (0.12)	.54	0.74 (0.10)	.63

Note. All factor loadings are unstandardized, and all residual variances are standardized.

lagged paths emerged in either the maternal or paternal model: Wave 3 levels of authoritative parenting did not predict Wave 4 levels of self-regulation, nor did Wave 3 self-regulation explain variation in Wave 4 authoritative parenting. Significant residual variances remained for both Wave 4 variables, indicating that Wave 4 parenting and self-regulation were not fully explained by prior levels of these two constructs, and these two residual variances were significantly and positively correlated. Turning to the control variables, parents of daughters reported higher levels of Wave 3 self-regulation than parents of sons (see Table 4, panel 1). In the maternal model only, Wave 3 self-regulation covaried with family income, such that self-regulation scores were high for children in high-SES families. Furthermore, Wave 3 authoritative parenting was associated with child age (i.e., older teens reported lower levels of maternal authoritative parenting than younger teens), and child ethnicity (i.e., European American teens

were more likely to endorse high levels of maternal authoritative parenting than teens from other ethnic backgrounds). In the paternal model only, Wave 3 self-regulation scores were high when fathers were biologically related to their children. There were no associations between paternal authoritative parenting and any of the control variables.

Authoritarian Parenting

As for authoritarian parenting, the data provided an adequate fit to both maternal and paternal authoritarian parenting models, maternal model χ^2 fit (96) = 192.22, $p < .001$, χ^2/df ratio = 2.00, CFI = .97, RMSEA (90% CI) = .046 (.037–.055), SRMR = .048, paternal model χ^2 fit (107) = 192.73, $p < .001$, χ^2/df ratio = 1.80, CFI = .96, RMSEA (90% CI) = .049 (.038–.060), SRMR = .051. With two exceptions, the pattern of findings revealed in the maternal model was mirrored in the paternal model (see Figure 2; see the middle panel of Table 3 for

TABLE 4
Standardized Path Coefficients for Control Variables

	<i>Maternal Authoritative Parenting</i>		<i>Paternal Authoritative Parenting</i>	
	<i>Self-Regulation</i>	<i>Parenting</i>	<i>Self-Regulation</i>	<i>Parenting</i>
Male sex	-.48***	-.14	-.53***	-.06
Race	.11	.13*	-.06	.06
Age	.08	-.13*	.07	-.08
Family income	.20**	.08	.10	.07
Marital status	.03	-.04	.06	.04
Biological father	–	–	.27***	.07
	<i>Maternal Authoritarian Parenting</i>		<i>Paternal Authoritarian Parenting</i>	
	<i>Self-Regulation</i>	<i>Parenting</i>	<i>Self-Regulation</i>	<i>Parenting</i>
Male sex	-.47***	.10	-.55***	.41**
Race	.10	.21***	-.06	-.18**
Age	.08	.05	.07	-.04
Family income	.19**	-.21**	.11	-.05
Marital status	.03	.03	.05	-.07
Biological father	–	–	.26***	.09
	<i>Maternal Permissive-Indulgent Parenting</i>		<i>Paternal Permissive-Indulgent Parenting</i>	
	<i>Self-Regulation</i>	<i>Parenting</i>	<i>Self-Regulation</i>	<i>Parenting</i>
Male sex	-.48***	.03	-.54***	.07
Race	.10	-.10	-.06	.03
Age	.07	.04	.07	-.06
Family income	.20**	-.12	.09	-.12
Marital status	.03	-.04	.07	.02
Biological father	–	–	.27***	.06

* $p < .05$; ** $p < .01$; *** $p < .001$.

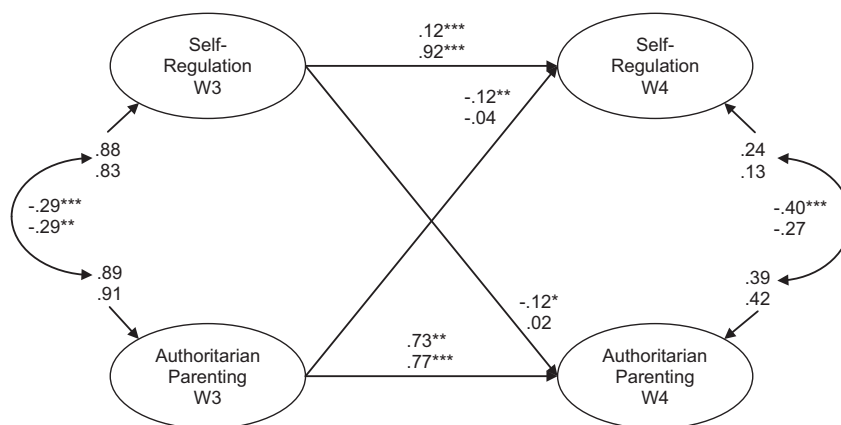


FIGURE 2 Full model for authoritarian parenting. Top values are for mothers, and bottom values are for fathers. All coefficients are standardized.

* $p < .05$; ** $p < .01$; *** $p < .001$.

factor loadings). Again, there was high temporal stability in children's reports of mothers' and fathers' authoritarian parenting. Cross-lagged pathways between study constructs emerged in the maternal model only, such that high levels of Wave 3 maternal authoritarian parenting predicted rank-order decreases in self-regulation between Wave 3 and Wave 4, and high levels of Wave 3 self-regulation predicted rank-order decreases in authoritarian parenting between Wave 3 and Wave 4. As in the authoritative parenting models, significant residual variances remained for both Wave 4 variables. These two residual variances were significantly and positively correlated. For the control variables (see Table 4, panel 2), child sex was associated only with Wave 3 paternal authoritarian parenting (i.e., boys reported higher levels than girls), but child ethnicity was linked to Wave 3 parenting in both models (i.e., European American teens reported lower levels of

maternal and paternal authoritarian parenting than teens of other ethnicities). Family income was negatively associated with Wave 3 maternal authoritarian parenting, such that teens in high-SES families reported lower levels of maternal authoritarian parenting than youth in low-SES families.

Permissive-Indulgent Parenting

The model fit for the permissive-indulgent parenting models was acceptable, maternal model χ^2 fit (164) = 328.87, $p < .001$, χ^2/df ratio = 2.01, CFI = .94, RMSEA (90% CI) = .046 (.039–.053), SRMR = .056, paternal model χ^2 fit (179) = 273.87, $p < .001$, χ^2/df ratio = 1.53, CFI = .94, RMSEA (90% CI) = .040 (.030–.049), SRMR = .056. Again, there was high temporal stability in children's perceptions of permissive-indulgent maternal and paternal parenting (see Figure 3; see the bottom panel of

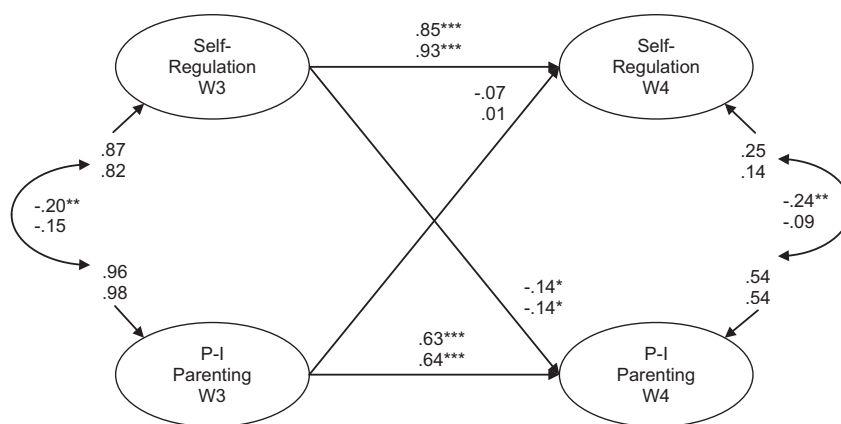


FIGURE 3 Full model for permissive-indulgent parenting. Top values are for mothers, and bottom values are for fathers. All coefficients are standardized.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3 for factor loadings). One cross-lagged pathway emerged in both models: High levels of Wave 3 self-regulation predicted rank-order decreases in permissive-indulgent parenting over time. Wave 3 permissive-indulgent parenting did not explain rank-order change in self-regulation over time. At both waves, the residual variances between parenting and self-regulation were correlated only in the maternal model. No associations between the control variables and Wave 3 parenting scores were observed (see Table 4, panel 3).

DISCUSSION

The purpose of the current investigation was to explore bidirectional associations between adolescents' self-regulation and maternal and paternal authoritative, authoritarian, and permissive-indulgent parenting styles over 1 year. As anticipated, there was high temporal stability for all constructs. Contrary to hypotheses, there was comparatively stronger evidence for child effects on rank-order changes in parenting over time than there was for parenting effects on rank-order changes in youths' self-regulation. Overall, these results provide new information about the processes by which teenagers and parents (primarily mothers) influence one another, which further validates the notion that models of coercive parenting are applicable during the early teen years (Patterson, 1982; Scaramella & Leve, 2004). These findings challenge the assumption that self-regulation continues to be socialized directly through the provision of authoritative parenting during early adolescence. Instead, results of this longitudinal, multi-informant study indicated that the ongoing presence of maternal authoritarian parenting interfered with self-regulatory development during this 1-year period. Furthermore, this study provided the first known examples of such child effects during adolescence, suggesting that increases in maternal authoritarian and maternal and paternal permissive-indulgent parenting were reactions to youths' self-regulatory difficulties (Scaramella & Leve, 2004). Each of these findings is discussed below.

The Influence of Parenting on Adolescents' Self-Regulation

Authoritative parenting and the practices that comprise this parenting style have long been touted as the driving force behind optimal self-regulatory abilities, while authoritarian and permissive parenting styles and practices have been blamed for

leading to teens' poor self-control (Baumrind, 1991; Brody & Ge, 2001; Patock-Peckham et al., 2001). Cross-sectional studies with teenagers have generally demonstrated positive correlations between self-regulation and authoritative parenting practices, and negative correlations with authoritarian and permissive-indulgent parenting behaviors (Finkenauer et al., 2005; Moilanen, 2007), yet these associations have been demonstrated inconsistently in a bare handful of longitudinal studies. Consequently, it was hypothesized that high levels of self-regulation at Wave 4 would be attributable to high levels of Wave 3 authoritative parenting and low levels of Wave 3 authoritarian and permissive-indulgent parenting.

Contrary to theoretical assertions and expectations, initial levels of authoritative and permissive-indulgent parenting were not linked to rank-order changes in self-regulation over time. These null results are consistent with a small number of existing longitudinal, multi-informant investigations conducted in middle childhood and the transition to adolescence. For example, Lengua (2006) uncovered no longitudinal effects for maternal rejection or inconsistent discipline (i.e., low levels of the authoritative parenting style) on change in children's effortful control from ages 8–12 to 10–14. In the Eisenberg et al. (2005) study on parental warmth/positive expressivity, there were small-sized associations between parenting at children's ages 7–12 years to their effortful control at ages 9–14 years, yet parenting at ages 9–14 years did not predict youths' effortful control at ages 11–16 years. Thus, despite evidence of contemporaneous associations between self-regulation and authoritative practices during adolescence (Brody & Ge, 2001; Finkenauer et al., 2005; Moilanen, 2007) and between self-regulation and permissive-indulgent practices during early adulthood (Patock-Peckham et al., 2001), these effects do not appear to operate longitudinally during the early adolescent years.

The only parenting style that was linked to rank-order change in self-regulation was authoritarian parenting, such that high levels of maternal authoritarian parenting predicted rank-order decreases in self-regulation over one year. These findings for authoritarian parenting support other empirical works suggesting that high levels of parental control and harshness are particularly deleterious during adolescence (Brody & Ge, 2001; Moilanen et al., 2010b). This is consistent with the argument that individuals' self-regulatory development is slowed when mothers engage in hostile, overcontrolling parenting, due to the poor examples

of emotion regulation mothers display and/or the negative affect aroused in these interchanges (Dix, 1989; Scaramella & Leve, 2004). Just as in childhood, teens' regulatory abilities are overtaxed and their attention is diverted to repairing their negative emotions instead of developing strategies to self-regulate their feelings and impulses (Sroufe, 1996). Whether this effect will persist further into adolescence is an important question for future research.

In sum, this study provides evidence for ongoing detrimental effects of authoritarian parenting during the early to middle adolescent years. The ultimate reason for the primacy of authoritarian parenting is unclear. Given the high stability of self-regulation and parenting behaviors over time, one tempting interpretation is that authoritative and permissive-indulgent parenting may have already exerted their influences by promoting or hindering children's regulatory abilities prior to the teen years, while the ongoing presence of authoritarian parenting continues to hinder teenagers' developing self-regulation (Kiff, Lengua, & Zalewski, 2011; Moilanen et al., 2010b; Pardini et al., 2008). In regard to the findings on authoritative and permissive-indulgent parenting, one explanation may be that while the combination of warmth/acceptance and control is theoretically optimal (Baumrind, 1991), the elements of responsiveness and support that are common to authoritative and permissive-indulgent parenting styles may be sufficient for young children to learn how to down-regulate their negative feelings and to control their behaviors. In addition, during adolescence, young teens who have consistently experienced these benefits earlier in life should be able to autonomously self-regulate with or without such explicit parental support. On the other hand, teens are just as likely as children to become upset when their parents use harsh physical punishments, shout in anger, or set arbitrary boundaries without providing explanations (Padilla-Walker, 2008). Thus, the ongoing presence of harsh parenting behaviors appears to be more dysregulating than the relative absence of supportive childrearing practices during adolescence.

The Influence of Adolescents' Self-Regulation on Parenting

Given recently renewed interest in bidirectional effects and how children influence parenting, we also investigated how rank-order changes in each parenting style were predicted by children's initial

levels of self-regulation. In general, we anticipated that high initial levels of self-regulation would be associated with rank-order increases in authoritative parenting and with rank-order decreases in authoritarian and permissive-indulgent parenting styles. The hypothesis for authoritative parenting was not supported, likely due to the high temporal stabilities in both self-regulation and authoritative parenting. Yet analyses revealed two novel child effects on authoritarian and permissive-indulgent parenting that were contrary to hypotheses: specifically, low initial levels of self-regulation predicted rank-order increases in permissive-indulgent parenting from both parents, and in authoritarian parenting from mothers only.

Regarding authoritarian parenting, this investigation provides further evidence for the validity of coercive cycles (i.e., that teens' poor abilities to regulate their emotions and behaviors elicits authoritarian parenting behaviors from their mothers), in that teens' prior levels of self-regulation predicted parents' subsequent levels of authoritarian behaviors. Mothers may feel embarrassed or angry when poorly regulated teenagers continue to fall short of society's expectations for self-regulation, and become increasingly authoritarian to force their children to act appropriately (Zucker, 1994). That this was observed for mothers and not for fathers may reflect that on average, mothers have greater responsibilities than do fathers for care of teenage children (Phares, Fields, & Kamboukos, 2009). Thus, mothers may have more opportunities than do fathers to react negatively to teens' dysregulated behaviors and/or to be the primary disciplinarian in the family. Given these duties, mothers may feel harshly judged by society if their adolescents are behaving inappropriately, in that their dysregulated behavior may reflect poorly on mothers' (and not fathers') childrearing decisions (Phares, 1993).

This investigation provided novel information on child effects on indulgent parenting, as permissive-indulgent parenting styles and behaviors have not previously been studied longitudinally in relation to self-regulation at any point in development. Study findings suggested that high initial levels of adolescent self-regulation were linked to rank-order decreases in permissive-indulgent parenting, in that the parents of teens who were poorly self-regulated at Wave 3 became more indulgent over time, compared with the parents of teens who were highly self-regulated at Wave 3. This pattern is in keeping with arguments about coercive cycles forwarded by Patterson (1982) in that after

repeated failures parents may give up attempting to manage highly dysregulated children, opting to engage in permissive or uninvolved parenting in order to “keep the peace” in the household (Pardini et al., 2008). As such parenting is a strong risk factor for various forms of adolescent maladjustment linked to self-regulatory difficulties (Luyckx et al., 2011), the present findings suggest that additional attention to this aspect of parenting is warranted.

Control Variables

We also explored the effects of several control variables. Results for self-regulation were primarily consistent with the literature, in that according to mothers and fathers, girls’ levels of self-regulation were higher than boys, no racial/ethnic differences were identified (Raffaelli et al., 2005), and socioeconomic advantage was associated with maternal reports of children’s self-regulatory prowess (Li-Grining, 2007; Moilanen et al., 2010a). Likely due to the relatively narrow age range at each study wave, no age differences in self-regulation were identified. Echoing Vogel et al. (2006) results in early childhood, biological fathers reported that their children had higher levels of self-regulation than did nonbiological fathers. Step-fathers may perceive their stepchildren differently than do biological fathers of their offspring, or the increased stress experienced by teens whose mothers remarry could undermine youths’ abilities to regulate effectively. Overall, these findings suggest that some differences in initial levels of self-regulation are attributable to these control variables.

Similarly, covariances for control variables varied for mothers and fathers and across parenting dimensions. No sex differences emerged in any models, and only one age difference was identified, such that younger children received higher levels of maternal authoritative parenting. Consistent with previous studies, European American youth reported perceiving their mothers as more authoritative and their mothers and fathers as less authoritarian than non-European American teens (Dornbusch et al., 1987). Along these same lines, children in high-SES families reported lower levels of maternal authoritarian parenting than children in low-SES families (McLoyd, 1990; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Overall, these findings are consistent with the literature on variations in parenting styles attributable to sex, race, and SES (Grusec & Goodnow, 1994; Steinberg et al., 1994).

Contributions, Limitations, and Future Directions

The current study should be interpreted with several caveats in mind. The inclusion of multiple respondents (i.e., teenagers, mothers, and fathers, when available) is a strength of this research, yet as is the case for much scholarship in this area, all study variables were based upon survey reports. Thus, this investigation’s findings could have been impacted by common method variance or other forms of bias (e.g., highly authoritarian parents may view their children as poorly regulated, regardless of their actual regulatory abilities). Furthermore, the internal consistencies of some of the paternal scales were somewhat low. For future studies, researchers should strive to replicate these findings while using **observational methods**, additional questionnaires, or mixed measurement modalities.

This study was also limited in regard to the content of the selected self-regulation measure, which focused primarily on short-term aspects of emotional, behavioral, and cognitive self-regulation (e.g., inhibition of undesirable behaviors in the moment). Teenagers also are capable of intentional self-regulation with long-term goals in mind (Gestsdottir & Lerner, 2008; Moilanen, 2007). Some recent research indicates that a core set of parenting practices promotes the development of both short- and long-term self-regulation during the teen years (e.g., parental warmth and monitoring; Bowers et al., 2011), but there is also some evidence that distinct parenting behaviors are linked to these separate aspects of self-regulation (Moilanen, 2007). Further explorations of potential bidirectional associations between parenting and long-term self-regulation remain warranted.

Notably, we opted to focus on the three latent continuous parenting style variables in separate models. This is at odds with the larger parenting styles literature, in which parenting styles are typically modeled as typological categories (e.g., Steinberg, Mounts, Lamborn, & Dornbusch, 1991). Due to the limitations of structural equation modeling, using categorical parenting style variables would have precluded the exploration of cross-lagged associations. Variations in self-regulatory abilities could still be attributed to parenting style types, as is the case for associated dimensions of competence and maladjustment (Steinberg et al., 1994). Furthermore, many scholars have focused on small sets of discrete parenting behaviors or practices that may or may not correspond to any particular parenting style. For example, others have identified parental monitoring and psychological control as important processes in the development of self-regulation (e.g., Bowers et al.,

2011; Finkenauer et al., 2005), but these constructs were not represented in the selected measure of parenting styles in this investigation. It is possible that one or more practices that were represented in the parenting styles questionnaire are particularly crucial for the development of self-regulation, but our latent variable modeling strategy precludes the identification of any particular influence. Such distinct parenting practices could also mediate or moderate each other's effects (e.g., Darling & Steinberg, 1993).

Finally, although longitudinal inquiries on self-regulation in adolescence are rare in the literature, this study spanned only 1 year, from early to middle adolescence. As these results are somewhat contradictory to existing studies with younger children (i.e., Eisenberg et al., 2005), it is vital that future studies include more than two annual waves of data, ideally covering multiple developmental periods, to see if these patterns are replicable.

Bolstered by the large sample of typically developing youth, the explicit separation of maternal and paternal parenting and the focus on three styles versus single-parenting behaviors, the current investigation adds novel information to the literature on the development of self-regulation and parenting styles during the teen years. These combined results cast doubt on the common assumption that teens' self-regulation skills *continue* to be shaped by ongoing authoritative parenting during adolescence, as these findings indicated that self-regulation was largely stable over 1 year, and the only parenting effect was for the maternal authoritarian style. In contrast, the present study provides some support for the notion that maternal and paternal parenting styles have similar, albeit primarily null influences on adolescents' self-regulatory development. Instead, this inquiry provides comparably robust support for short-term longitudinal child effects on rank-order change in maternal authoritarian and maternal and paternal permissive-indulgent parenting (Bell, 1968; Patterson, 1982; Scaramella & Leve, 2004). As these parenting styles are apparently still malleable and their adjustment-related consequences remain considerable, it may be possible to divert teens from unfavorable behavioral trajectories by arming parents with specific strategies to manage poorly regulated teenagers with consistency and efficacy.

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Examining the association between parenting and psychosomatic problems: self-esteem as a mediator across ages in early adolescence

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Received 23 Jan 2018, Accepted 28 May 2018, Published online: 04 Jun 2018

Download citation <https://doi.org/10.1080/02673843.2018.1482771>



In this article

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Abstract

Supportive parenting is known to protect against

psychosomatic manifestations of distress, yet the mechanisms through which this association operates are less clear. The present study evaluates children's self-esteem as a mediator, partially explaining the association between parent-child relationship quality and psychosomatic problems from late childhood to mid-adolescence. Results from a large, nationally-representative Canadian sample indicated that self-esteem partially mediated these associations, and self-esteem accounted for more shared variance between parent-child relationship quality and psychosomatic problems among younger children. Among older children, shared variance with self-esteem explained a smaller portion of this association, but the remaining direct effect of parent-child relationship on psychosomatic problems was larger. These findings suggest that supportive parents protect against psychosomatic problems, and that they do so by promoting self-esteem for younger children and through other mechanisms as children age. Results are discussed in the context of attachment theory and age-related trends in self-esteem development.

Keywords: [Self-esteem](#), [adolescence](#), [parents](#), [psychosomatic](#)

Introduction

The importance of parenting for healthy child development is well documented, and the mechanisms behind this association are numerous and complex. Parents foster healthy development both directly, through emotional support and assistance with problem solving, and indirectly, by enabling the child to develop intrinsic

resources such as self-esteem. The effects of parenting behavior are most notable during sensitive periods of development, at which time the child is particularly susceptible to environmental influences (e.g. Feldman, 2015; Whittle et al., 2014). These sensitive periods include infancy, during which attachment representations are built through parent-child interactions (Ainsworth, 1979; Bowlby, 1969; Fraley, 2002), and adolescence, when parents continue to provide a secure base from which the teenager can safely explore independence (Allen et al., 2003). Adolescents who lack this secure base are not only left to navigate an increasingly complex and stressful social world without this 'safety net', but also tend to believe that other close relationships cannot be relied upon for support (e.g. Pascuzzo, Cyr, & Moss, 2013; Vaughn et al., 2016; Waters, Ruiz, & Roisman, 2017).

Without sufficient support from parents, stressors during adolescence often manifest as psychosomatic problems, defined as physiological manifestations of psychological distress (Berntsson, Ringsberg, Eriksson, & Köhler, 2015; Hagquist, 2016; Laundry Frisenstam, van den Bosch, Chen, Friberg, & Osika, 2017). The prevalence of internalizing disorders increases dramatically during adolescence (e.g. American Psychiatric Association, 2013; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Kim-Cohen et al., 2003), often resulting in physical symptoms such as tension headaches, indigestion, dizziness, sleep problems, and muscle aches (e.g. Eminson, 2007). However, supportive parents are able to offset these adverse effects, contributing to the adolescent's resilience and overall mental health (Maunder & Hunter, 2001; Segerstrom &

Miller, 2004). Rapid changes in ego development, emotion regulation, cognitive skills, and stress reactivity occur during this period (e.g. Blakemore & Mills, 2014; Erikson, 1968; Fuhrmann, Knoll, & Blakemore, 2015; Gullone, Hughes, King, & Tonge, 2010; Romeo, 2010; Steinberg et al., 2008), making adolescence a particularly crucial time for the interplay between familial factors (e.g. parental support) and personal factors (e.g. self-esteem). This interplay culminates in either resilience in the face of stressors, or heightened risk for internalizing problems.

Several underlying processes behind the protective effect of parents against psychosomatic problems have been identified, including attachment-based differences in physiological response to stress and health risk behaviors (Maunder & Hunter, 2001), blood pressure and cardiovascular reactivity (Uchino, Cacioppo, & Kiecolt-Glaser, 1996), use of emotion regulation strategies (Hagekull & Bohlin, 2004), and self-evaluation (Milevsky, Schlechter, Netter, & Keehn, 2007). Parental influence on self-esteem is particularly compelling as an explanatory mechanism for this association, due to the sensitive nature of adolescence for self-concept formation. However, the potential mediating role of self-esteem within this association has not been assessed developmentally during adolescence.

Here, as elsewhere, self-esteem refers to valenced self-evaluation and degree of satisfaction with oneself (e.g. Greene & Way, 2005; Steiger, Allemand, Robins, & Fend, 2014). It is thought to develop within the parent-child

relationship, become internalized as a personal characteristic, and in turn influence social competence and

well-being (Birkeland, Melkevik, Holsen, & Wold, 2012; Van Dijk et al., 2014). Self-concept is an important component of both attachment representations (i.e. seeing the self as worthy of compassion and care from significant others, Ainsworth, Bell, & Stayton, 1974; Bowlby, 1982) and depressogenic schemas (i.e. Beck's cognitive triad: negative views of the self, the world, and the future; Beck, 1970). Meta-analyses of longitudinal data have demonstrated that poor self-esteem predicts later depression, after controlling for concurrent levels of each construct ('vulnerability model', Metalsky, Joiner, Hardin, & Abramson, 1993; Sowislo & Orth, 2012). Self-esteem also is robustly associated with psychosomatic manifestations of depression and other internalizing problems (e.g. Garaigordobil, Dura, & Perez, 2005; Sweeting, West, & Der, 2007). In summary, low self esteem is a key component in the development of internalizing problems, and fostering high self-esteem may be a mechanism behind supportive parents' ability to protect against these issues. Thus, self-esteem may mediate the association between supportive parenting and psychosomatic manifestations of internalizing problems.

The role of self-esteem as a mechanism through which parent-child relationships serve as a protective factor has rarely been directly examined across ages during the pre- and early- adolescent period. Some empirical support for the mediating role of self-esteem was generated by Wilkinson (2004) with youth in mid-to-late adolescence. Wilkinson demonstrated a direct effect of parent-child relationship quality on depression and an indirect effect of parenting through self-esteem (Wilkinson, 2004). Hunter, Barber and Stolz also identified self-esteem as a mediator

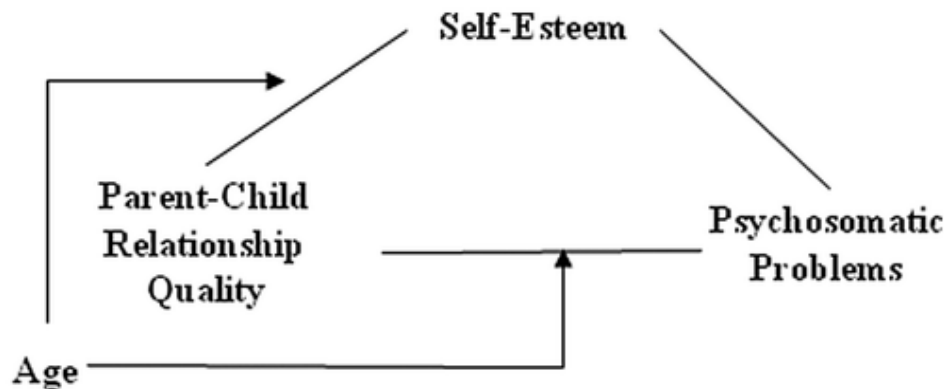
of the association between parenting behaviors and depression and antisocial behavior for students in grades 5 and 8 (2015). Both of these studies provide valuable evidence for self-esteem as a mechanism, as it partially explains how parents can protect against psychological distress; however, neither study accounts for other negative emotions (e.g. anxiety) or psychosomatic presentations of distress. Further, neither study examines the changing role of parents and self-esteem across adolescent development. The current study aims to extend the findings of both Wilkinson (2004) and Hunter and colleagues (2015) by examining whether self-esteem partially accounts for the influence of parent-child relationships on psychosomatic symptoms, and whether this pattern of influence varies in strength as a function of age from pre- to mid-adolescence.

The relative importance of both self-esteem and support from parents may change as children age into adolescence due to other developmental processes unfolding at this time (e.g. social role change, increased demands, and drive for independence; Baldwin & Hoffmann, 2002; Birkeland et al., 2012; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2006; Zimmerman, Copeland, Shope, & Dielman, 1997). Indeed, research with older adolescent participants has documented a decreasing effect of parental support on emotional well-being, perhaps reflecting increased reliance on peer support and personal resources such as self-esteem (e.g. Helsen & Vollebergh, 2000; Laible, Carlo, & Raffaelli, 2000; Meeus, Oosterwegel, & Vollebergh, 2002). These age-related trends have not been assessed with a younger sample of adolescents. It is possible that, as with older children, the

influence of parents will decrease as children age into the teenage years due to the increasing importance of other influences on well-being (e.g. academic performance, peer relationships, and dating; Helsen & Vollebergh, 2000; Scholte, van Lieshout, & van Aken, 2001). Although a longitudinal approach to this question would be ideal, the lack of existent research on this topic from a developmental perspective means that a cross-sectional approach constitutes a valuable addition to the literature.

The present study aims to evaluate whether self-esteem partially accounts for the association between parent–child relationship quality and psychosomatic problems in the pre- to mid- adolescent period, and whether the relative strength of these influences on psychosomatic problems varies by age. To address this question, a series of moderation and moderated mediation analyses were conducted on cross-sectional data. As depicted in Figure 1, it is hypothesized that: (1) higher parent–child relationship quality will be associated with fewer psychosomatic problems at all ages across pre-, early, and mid- adolescence; (2) this association will be partially accounted for by shared variance with the child’s self-esteem (partial mediation), specifically, higher parent–child relationship quality will be associated with higher self-esteem, which in turn will be associated with fewer psychosomatic problems; (3) the association between parent–child relationship quality and psychosomatic problems will be moderated by age, such that the effect size will be smaller among older children; and (4) the association between self-esteem and parent–child relationship quality will be moderated by age, such that the effect size will be smaller among older children.

Figure 1. Hypothesized model: conceptual diagram.



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Method

Participants and procedure

This study used the 2014 Canadian Health Behaviour in School-Aged Children (HBSC) data-set (Freeman, King, & Pickett, 2016). This nationally representative sample consists of 29,784 students in grades 6–10 across 377 schools. Only students who met the following criteria were retained for analysis: 11–16.5 years of age, reported gender, and did not omit more than one item within each scale (Psychosomatic Problems, Parent Relationship Quality, and Self-Esteem). After removing participants who did not meet these criteria, the final sample consisted of $N = 25,960$ students (51.9% female, $M_{\text{age}} = 14.01$ years). Participants who were excluded due to missing data were younger ($t(29,047) = 9.158, p < .001, M_{\text{age}} = 13.76$) and more likely to be male ($\chi^2(1) = 96.71, p < .001, 57.5\%$ male).

Questionnaires were completed anonymously during class time. They consisted of 105 items asking about school and

community environments, physical and mental health, and interpersonal relationships. Additional information about the HBSC questionnaire design, ethics clearance, sample selection, and demographics is available from the Public Health Agency of Canada (Freeman et al., 2016).

Measures

Scores for each of the measures described below were calculated by computing the mean of all items, and then standardized by converting to z scores. Standardized values were used so that beta weights within the mediation analysis would be interpretable as effect sizes (Hayes, 2013) while preserving the distribution of scores and pattern of significant associations (Hayes & Rockwood, 2016). Further, this approach is recommended for measurements lacking a true zero point, so paths are evaluated using values for individuals who are 'average' on extraneous variables; by using raw scores, this estimate would be erroneously based on a true zero point representing the absence of that construct (Hayes & Rockwood, 2016). In this case, a score of zero would not be possible on the measures of interest, nor would it represent the absence of the construct.

Parent–child relationship quality

The HBSC 2014 questionnaire includes several items assessing family relationships. The parent–child Relationship Quality measure was created by combining items from the Family Support scale (i.e. 'my family really tries to help me', 'I get the emotional help and support I need from my family', 'I can talk about my problems with my family', 'my family is willing to help me make decisions')

and the Parental Understanding and Trust section (i.e. 'my parents understand me', 'my parents expect too much of me', 'my parents trust me', 'what my parents think of me is important'). The questionnaire was then reviewed for other items referencing parents, and one additional item was added: 'I get in a lot of arguments with my parents'. Items from the Family Communication section of the HBSC survey were not included (despite referencing parents), as exploratory analyses indicated insufficient shared variance and poor scale reliability when combined with the other items. The resulting parent-child Relationship Quality variable comprises nine items, with strong inter-item reliability ($\alpha = .89$). Notably, these items do not distinguish between the adolescent's relationship with each parent respectively, but rather respondents independently interpret who is being referenced by the terms 'parents' and 'family' (detailed in Discussion section).

Self-esteem

This measure was based on the self-esteem variable created by Ma (2007) from HBSC 1998 data. Two notable diversions from Ma's scale are that the item 'I like myself' was not available in 2014 so it was excluded, and a Likert scale was used instead of the yes/no response format used in the 1998 survey (Ma, 2007). Students rated the following six statements on a 5-point Likert scale ranging from Strongly Agree to Strongly Disagree: 'I have confidence in myself', 'I have trouble making decisions', 'I am often sorry for the things I do', 'I often wish I were someone else', 'I would change how I look if I could', and 'I have a hard time saying no'. This overall measure had acceptable inter-item reliability ($\alpha = .71$). These items are consistent with the

construct of self-esteem, defined in the literature as the degree to which an individual is satisfied with him/herself and believes they are a person of worth (e.g. Greene & Way, 2005).

Psychosomatic symptoms

The HBSC questionnaire included a Psychosomatic Symptoms scale, which asked participants to indicate the frequency with which they experience the following eight symptoms: headache, stomach ache, back ache, feeling low (depressed), irritability or bad temper, feeling nervous, difficulty getting to sleep, and feeling dizzy. HBSC researchers selected these items as common physical manifestations of emotional distress; however, it is not possible to conclusively determine the cause of these symptoms from the questionnaire data. Frequency was rated on a 5-point Likert scale with the following labels: About Every Day, More Than Once a Week, About Every Week, About Every Month, and Rarely or Never. Due to this scale's strong inter-item reliability ($\alpha = .84$) and previous research documenting frequent somatic presentations of psychological distress in children and adolescents (e.g. Eminson, 2007; Murberg & Bru, 2004; Sweeting et al., 2007), emotional and physical symptoms were treated as a single measure, consistent with the approach taken by the HBSC research team (Freeman et al., 2016).

Results

Descriptive statistics and exploratory analysis

All variables were standardized and subsequent results represent analyses conducted on z-scores. The expected pattern of association was observed across constructs, with higher Parent Relationship Quality associated with higher Self-Esteem and lower rates of Psychosomatic Problems. Parent Relationship Quality and Self-Esteem were lower among older participants, who also reported higher rates of Psychosomatic Problems (see Table 1 for associations with Age). A gender difference emerged across all variables of interest with small to medium effect sizes, wherein males reported fewer Psychosomatic Problems ($F(1,25\ 958) = 1696.9, p < .001, \eta^2 = .01$), higher Parent Relationship Quality ($F(1,25\ 958) = 181.63, p < .001, \eta^2 = .06$), and higher Self-Esteem ($F(1,25\ 958) = 1595.24, p < .001, \eta^2 = .06$), indicating the importance of controlling for gender in the present analyses (discussed below).

Table 1. Correlations (r) among study variables.

CSV Display Table

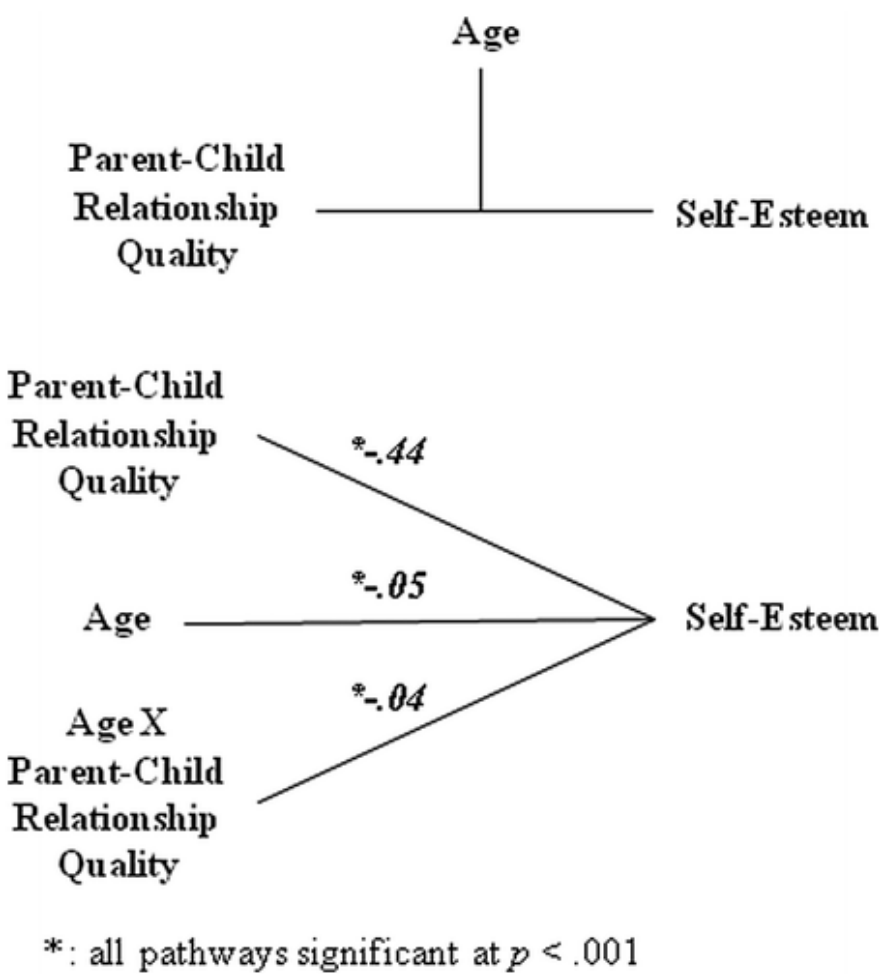
Self-esteem and psychosomatic problems: associations with parent–child relationships across ages (moderation)

The impact of age on the strength of the association between parent–child Relationship Quality and both Self-Esteem and Psychosomatic Problems (respectively) was assessed using the Process macro for SPSS, Model 1 (Hayes, 2013). In each case, R^2 change was small but

significant at $p < .001$. Consistent with hypotheses, the association between parent–child Relationship Quality and

Self-Esteem was weaker among older children compared to younger children (See Figure 2 and Table 2). Contrary to hypotheses, older children demonstrated a stronger association between parent–child Relationship Quality and Psychosomatic Problems relative to younger children (See Figure 3 and Table 2).

Figure 2. Moderation: age and self-esteem.

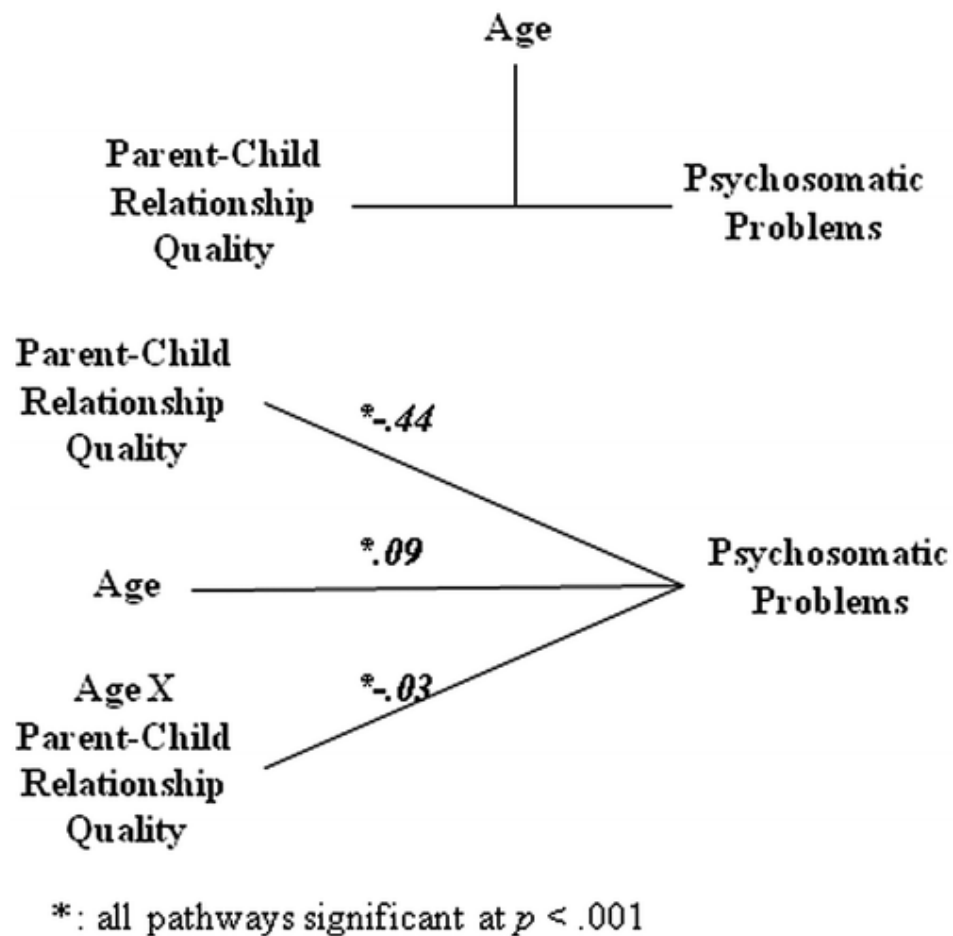


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Table 2. Associations with parent–child relationship quality by age (standardized beta).

CSV Display Table

Figure 3. Moderation: age and psychosomatic problems.



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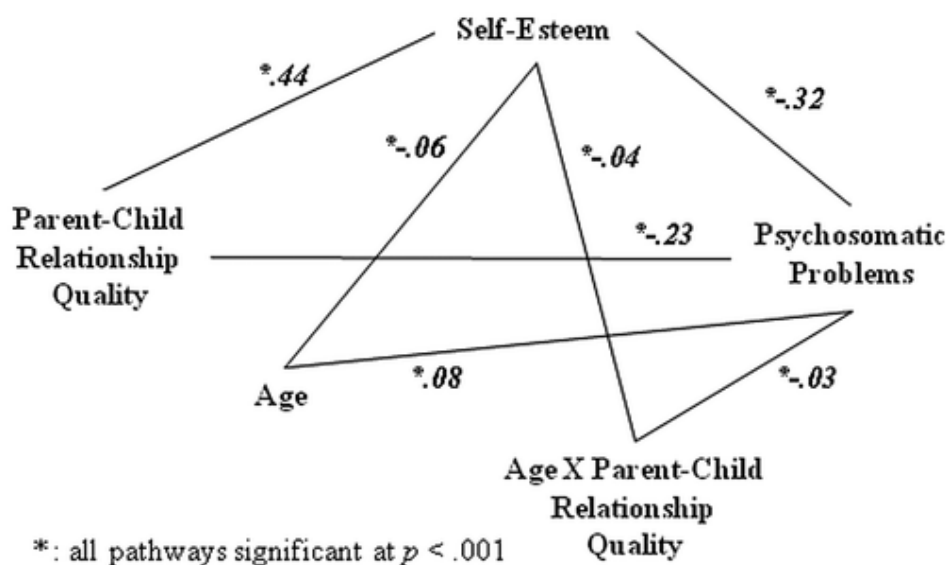
Self esteem as a mediator across ages (moderated mediation)

Moderated mediation was evaluated using the Process macro for SPSS, model 8 (Hayes, 2013). Gender was expected to exert a main effect on each variable, but not to moderate associations between variables, and was therefore entered as a covariate. To confirm that this approach was appropriate, the model was re-run with males and females separately, and the same pattern of

results emerged across genders (See Supplementary Material). All pathways depicted in the model are significant

at $p < .001$ (Figure 4), and the confidence interval for the index of moderated mediation (CI: .01–.02) did not overlap zero, indicating statistical significance. The analysis indicated that Self-Esteem partially mediates the association between parent–child Relationship Quality and Psychosomatic Problems, moderated by Age (Figure 4 and Table 2). The Psychosomatic Problems variable includes both emotional and physical items, so the two alternative models were re-run with these items separately: one model including only emotional items (i.e. feeling low (depressed), irritability or bad temper, and feeling nervous) and another including only physical items (i.e. headache, stomach ache, back ache, difficulty getting to sleep, and feeling dizzy). These two alternative models resulted in the same overall pattern of results (see Supplementary Material).

Figure 4. Moderated mediation results, statistical diagram.



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Discussion

The current results support the hypothesis that a high quality parent–child relationship protects against psychosomatic problems, in part through promotion of high self-esteem. This pattern of associations was significant at all ages from pre- to mid- adolescence; however, effect sizes in the model varied as a function of age. Self-esteem accounted for a smaller portion of this association among older children, and older children showed a stronger association between parent–child relationship quality and psychosomatic problems relative to younger children (contrary to the hypothesized direction). Together, these results suggest that although children’s self-esteem becomes increasingly independent from their family context with age, they also rely more heavily on their parents to support well-being as they age.

These findings are consistent with principles of attachment theory, which posit that the child develops a sense of self-worth out of the relationship with the primary caregiver (Ainsworth, 1979; Bowlby, 1980; Fraley, 2002), which then exerts an ongoing influence on mental health throughout development (Sroufe, 2005). Although attachment theory and empirical evidence support this conceptualization (Ainsworth et al., 1974; Bowlby, 1982; Metalsky et al., 1993; Sowislo & Orth, 2012), the present data is cross-sectional and therefore cannot establish causal directionality. It is possible that chronic and severe psychosomatic problems and corresponding negative mood states may impair self-esteem via affect-induced cognitive biases and social impairment (Christodoulou & Burke, 2016; Joiner, 2000; Shahar & Davidson, 2003) and also strain the parent–child relationship. Results indicated that parental support protects against psychosomatic problems even after

accounting for self-esteem. This pattern demonstrates the increasingly important role for parents during the early- and mid-adolescent period. Above and beyond fostering self-esteem, supportive parents may provide strategies for emotion regulation, a secure base from which to explore independence, and the opportunity for 'fun' experiences that induce positive mood states (e.g. Allen et al., 2003; Buckholdt, Parra, & Jobe-Shields, 2014; Wilson et al., 2014). This association is probably reciprocal; children with lower rates of psychosomatic distress are more likely to elicit positive interactions with their parents (Hummel, Kiel, & Zvirblyte, 2016; Kochanska, Kim, & Boldt, 2015). Children who experience frequent negative mood states (which may manifest physiologically or emotionally) are more challenging to parent, and therefore elicit more negative parent-child interactions (Brooker et al., 2015; Edwards et al., 2017; Klein et al., 2016).

The moderating effect of age underscores the importance of investigating these constructs developmentally. A reduction in the strength of the indirect effect through self-esteem was expected due to additional, extra-familial influences on self-esteem (e.g. academics, peers, body-image) which become more salient during adolescence (Baldwin & Hoffmann, 2002; Birkeland et al., 2012; Hay & Ashman, 2003). Note that this pattern does not reflect a decrease in the association between self-esteem and psychosomatic problems, but that the portion of shared variance between parent-child relationship quality and psychosomatic problems *that can be attributed to self-esteem* declines with age. Documented associations between self-esteem and psychosomatic symptoms (e.g. Garaigordobil et al., 2005; Sweeting et al., 2007) suggest the

presence of additional shared variance separate from the parent-child relationship. Thus, relationships with parents become increasingly important as children develop into adolescence, despite the fact that self-esteem becomes less tied to familial relationships at this time.

The age-related increase in the influence of parents on physical and emotional well-being may be attributable to the age range in the present sample, which spanned late childhood to mid-adolescence. Previous studies documenting an age-related decline in the impact of parent-child relationships on well-being have done so with older samples (e.g. Helsen & Vollebergh, 2000; Laible et al., 2000; Meeus et al., 2002), suggesting that reliance on support from parents may peak in mid-adolescence and then decline later in development. This pattern may be partly attributable to internal and external stressors faced during the first half of adolescence. Prior studies with this age range have found decreases in self-esteem during this period (Ogihara, Uchida, & Kusumi, 2016; Robins & Trzesniewski, 2005), a trend which was replicated in this sample. It is possible that, in the face of declining self-esteem, children with a positive relationship with their parents use this source of support to partially buffer against corresponding emotional distress. When relationships with parents are poor, adolescents face this age-related reduction in self-esteem without effective support from parents, and experience adverse effects in the form of psychosomatic problems.

This conceptualization accounts for the moderation of age on both pathways: the decreasing indirect effect of self-

esteem (which declines with age regardless of familial relationship quality, resulting in decreased shared variance) and increasing direct effect of parent–child relationship quality on psychosomatic problems (possibly as a compensatory mechanism for the effects of declining self-esteem). The increasing direct effect of parent–child relationship quality with age is consistent with the sensitive period conceptualization of adolescence (e.g. Blakemore & Mills, 2014; Fuhrmann et al., 2015). As children transition into adolescence, environmental effects (in this case, relationship with parents) become more influential for well-being. Longitudinal research suggests that the effects of environmental influences during adolescence are likely to persist into adulthood (e.g. Blakemore & Mills, 2014; Raphael, 2013; Sawyer et al., 2012; Weinfield, Sroufe, & Egeland, 2000) via mechanisms such as HPA axis development, cognitive styles, and regulatory skills (Fuhrmann et al., 2015; Romeo, 2010; Whittle et al., 2014; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000).

This conceptualization is also consistent with the limited empirical evidence for this pattern of associations among older children. The present study replicates and extends findings by Wilkinson (2004), who documented an association between parental support and depression, partially mediated by self-esteem. The current results replicated these findings using a younger sample, with a stronger residual direct effect of parental support. A developmental trend was identified wherein this direct effect was stronger among older participants, whereas the mediating effect of self-esteem becomes slightly weaker with age as self-evaluation is less tied to the relationship with one's parents. Further, this model was extended to

psychosomatic problems, a common manifestation of psychological distress among youth.

These findings must be interpreted in the context of study limitations, such as reliance on self-report and cross-sectional data. The HBSC questionnaire is not able to distinguish medically unexplained symptoms (i.e. psychosomatic problems) from those symptoms attributable to physiological conditions (e.g. lactose intolerance, scoliosis). Further, it is not possible to distinguish the unique ongoing contribution of early-life experience with the attachment figure from the ongoing effect of parent-child interactions over time, a distinction emphasized in the attachment literature (e.g. Fraley, 2002; Weinfield et al., 2000). Future research may extend these findings using longitudinal data. Comparison across family structure and relative impact of mothers and fathers as a function of child's gender and age is another promising direction as existent research has explored the role of parent and child gender in these relationships (e.g. Garside & Klimes-Dougan, 2002; Merrill, Gallo, & Fivush, 2015; Updegraff, Delgado, & Wheeler, 2009). Although participant gender was entered as a covariate, unfortunately it was not possible to differentiate this information in this study, as students responded to questions about their parents. It is also unknown whether self-esteem as a mechanism across ages operates the same way in other cultures. For example, in collectivist cultures, a strong ongoing impact of family relationships on self-esteem may occur, manifesting as greater shared variance and a larger indirect effect on psychosomatic problems. Finally, the cognitive mechanisms underlying the effects of self-esteem and family support (e.g. negative self-schemas with concurrent positive

relationship-schemas) may further illustrate these influences.

Conclusions

Results from the 2014 HBSC survey suggest that supportive parents protect against psychosomatic problems in part by facilitating the development of self-esteem. These relationships are particularly important for children in early and mid-adolescence, at which time self-esteem declines and they rely more strongly on their parents for support. These findings highlight the importance of prioritizing parent–child relationships in this developmental period and the value of considering somatic expressions of psychological distress.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by Public Health Agency of Canada.

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Supplemental data

Supplemental data for this article can be accessed here <https://doi.org/10.1080/02673843.2018.1482771>.

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The influence of perceived parenting styles on socio-emotional development from pre-puberty into puberty

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Received: 7 July 2016 / Accepted: 8 June 2017 / Published online: 19 June 2017
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Abstract The relative impact of parenting on socio-emotional development of children has rarely been examined in a longitudinal context. This study examined the association between perceived parenting styles and socio-emotional functioning from childhood to adolescence. We hypothesized that optimal parenting associated with improvement in socio-emotional functioning from childhood into early adulthood, especially for those with more behavioral problems in childhood. Children between ages 7 and 9 years were recruited for the Singapore Cohort Study of Risk Factors for Myopia (SCORM). Nine years later, 700 out of 1052 subjects were followed up (67%). During childhood, parents completed the Child Behavior Checklist (CBCL), while young adults completed the Youth Self-Report (YSR) and Parental Bonding Instrument (PBI). Perceived optimal parental care resulted in less internalizing and externalizing problems in early adulthood in comparison to non-optimal

parental care styles. Perceived optimal paternal parenting, but not maternal parenting, in interaction with childhood externalizing problems predicted externalizing symptoms in early adulthood. No significant interactions were found between perceived parenting styles and internalizing problems. In conclusion, perceived parental care associates with the quality of socio-emotional development, while optimal parenting by the father is especially important for children with more externalizing problems in childhood.

Keywords Parenting · Child development · Behavioural problems · Socio-emotional development · Adolescence

Introduction

The onset of most common mental disorders is before adulthood [1, 2]. The early onset of psychopathology implies a formidable cost for both the individual and society. The peripubertal peak in the onset of mental disorders underscores the importance of early interventions targeting at-risk children [3]. The ability to effectively identify children at risk is essential for the design and delivery of prevention programs [4–6]. These considerations suggest that it is critical to understand how socio-emotional functioning changes over development and to identify the course of this variation.

Emotional and behavioral dysregulation is an important predictor of mental disorders later in life [7]. However, the association between measures of emotional and behavioral problems in childhood and later psychopathology, while statistically significant, shows variation over time with evidence for a considerable portion of children exhibiting emotional or behavioral difficulties in early life, but without evidence of psychopathology at later ages [8, 9]. It is

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thus important to understand the sources of variation in emotions and behavior and to identify factors that moderate changes over time.

One of the most important factors that influence socio-emotional development is parenting [3, 10–14]. Positive forms of parenting are beneficial for cognitive and social development, while negative parenting such as punishment and low warmth are associated with disruptive behavior in children and increased risk for psychopathology [11, 15]. These effects are apparent in studies that used self-reports of perceived parenting styles using measures such as the Parental Bonding Instrument (PBI) [16]. For example, PBI scores characterized by low care and high overprotection predict psychopathology such as depression, anxiety disorders, and eating disorders [16–20].

Studies of the relationship between perceived parenting and psychopathology are most commonly explored with cross-sectional design and often conducted in adult samples [21–23]. The design of such studies does not permit an analysis of the potential role of parenting as a moderator of the relationship between early risk and later outcomes. In addition, most studies focus on clinical samples, or on groups with low socio-emotional status [24]. Hence, these samples do not inform about the extent of perceived parenting effects on socio-emotional development in a general population.

The aim of this study is to use a longitudinal design to examine whether parenting, as measured with the PBI, is a moderator of the relation between early socio-emotional functioning and later mental health. We hypothesize that perceived optimal parenting, characterized by high warmth and low control, in interaction with behavioral and emotional profiles in middle childhood, will have a positive effect on the socio-emotional development over time and lead to less reported symptoms of psychopathology during late adolescence/early adulthood. Moreover, since the effects of intervention programs that target parental care are often greatest among children with negative temperament [25], we predicted that the effect of optimal parenting would be most apparent among children with increased emotional and behavioral problems in childhood.

Methods

Participants

The current study sample was derived from the SCORM that recruited a total of 1979 children out of 2913 Asian children (participation rate: 67.9%) from three normal stream schools in Singapore between November 1999 and May 2001. The majority of the children in Singapore attend normal stream schools, while children with intellectual

disability (IQ <70) often attend ‘special’ schools [26]. Children with serious chronic medical conditions (e.g., heart disorders, cancer, and chronic eye conditions) were excluded ($n = 94$).

Measures of internalizing and externalizing traits

The Child Behavior Checklist (CBCL) 4–18 parental report and the Youth Self-Report (YSR) are both tests of emotional and behavioral difficulties for, respectively, parents of children between 4 and 18 years old (CBCL), and for adolescents between 11 and 18 years of age (YSR). The CBCL consists of 118 items and the YSR 112 items, both assessed with a three-point Likert scale, with eight subscales, two syndrome groups, and a total problem score each. The two syndrome groups are internalizing and externalizing scale scores. The internalizing scale score is a grouping of social withdrawal, somatic complaints and anxiety/depression items, whereas the externalizing score is a grouping of delinquent behavior and aggressive behavior items [27]. We used raw scores for both the CBCL and YSR [28]. The CBCL and YSR have good construct validity and acceptable test–retest reliability coefficients among the subscales. Cronbach’s α values range from .62 to .92 [27].

Measurement of parenting styles

The PBI is a widely used battery for assessing parenting behaviors [29]. It is a self-report questionnaire that asks participants retrospectively about the perceived parenting styles of both parents during the first 16 years of their life. Participants complete sections for mother and father separately. PBI measures perceived levels of care and overprotection/control. It consists of 25 items, 12 ‘care’ items and 13 ‘overprotection’ items [7]. The reliability and validity of the PBI have been found to be satisfactory [29].

Measurements of demographic and socioeconomic data

Parents completed a questionnaire, in English or Chinese, on demographic information inclusive socioeconomic indicators at the baseline visit. Ethnicity was determined based on the father’s reported ethnicity [30]. Socioeconomic status was assessed on the basis of maternal education, a frequently used index in studies with children.

Procedures

Before commencing study, all parents provided written informed consent while children provided written assent. At baseline, the children were in grades one to three (7–9 years old). At that time the children were assessed

with an IQ test (Raven Standard Progressive Matrices), parents provided information on demographics and filled out the English version of the CBCL. Of the initial SCORM sample of 1979 children, only 1336 completed the CBCL, because one of the three schools did not participate in completing the CBCL. Subsequently, participants were followed up 9 years after baseline. During follow-up, between the ages of 16 and 21, a package consisting of a consent form on the follow-up study and a set of self-report questionnaires including YSR and PBI in English were mailed to 1052 participants. After giving consent, the participants were to complete and mail back the set of questionnaires to the study team. Seven hundred of the 1052 participants gave consent for the follow-up study (response rate 66.5%). Among those 700 participants, 460 had complete data on the CBCL, YSR and PBI; hence, they were included for analyses in this study. The Singapore Eye Research Institute Ethics Committee approved the initial and follow-up study and the tenets of the Declaration of Helsinki were observed.

Statistics

To appreciate parenting effects, we were especially interested in those children with discrepancies between their CBCL and YSR scores. This includes one group with high CBCL score at age 7–9 years, but low YSR score at young adulthood, and another group with an initial low score on the CBCL when young, but high YSR score at later stage in life.

CBCL and YSR raw scores were used and adjusted for gender and age. Differences in ages, gender, ethnicity, socioeconomic status, and IQ between the included and excluded samples were analyzed by using parametric tests if normality and homogeneity assumptions were satisfied; otherwise, the non-parametric Mann–Whitney *U* test was used. Categorical data were analyzed using the Chi-squared test.

The association between scores on the CBCL and YSR in interaction with parenting styles was analyzed as categorical variables in general linear models, where CBCL and YSR were divided into four groups: low scores, low average scores, high average scores and high scores. For parenting styles, comparisons were made between optimal versus “non-optimal parenting” (which groups affectionate constraint, affectionless control, and neglectful parenting) as well as optimal versus affectionless control, neglectful, and affectionate constraint parenting separately [31].

All outliers above 3 standard deviations were removed. All statistical procedures were performed with the Statistical Package for the Social Sciences (SPSS) 16.0 (SPSS Inc., Chicago, IL, USA) and *p* values were two-tailed and

considered statistically significant when the values were below .05.

Results

Of the 460 participants with complete data on the CBCL, YSR and PBI, 4 were older than 21 years and 8 with missing age; hence, they were excluded for analyses in this study. Based on scatter plots, three outliers (i.e., >3 SD away) were removed. Thus, data from 445 participants with complete data (192 boys and 253 girls) were included in our final analyses.

The age ranged from 6 to 10 years with a mean of 7.8 years (*SD* = 0.83) at the time of baseline (CBCL) and 16 to 21 years with a mean of 18.4 years (*SD* = 1.32) at the second assessment that included the YSR and PBI. The mean score for internalizing problems on the CBCL raw score was 7.68 (*SD* = 7.53, range 0–58) and 7.71 (*SD* = 7.06, range 0–65) for externalizing problems. The mean score for internalizing problems on the YSR raw score was 13.0 (*SD* = 8.4, range 0–48) and 10.5 (*SD* = 6.8, range 0–33) for externalizing problems. There was a high correlation between the CBCL and YSR total raw scores as well as sub-scores ($p < .001$). No main effects on maternal education or IQ were found. Hence, these variables were not included in subsequent analyses.

Comparison on group characteristics were conducted for those included for analysis ($n = 445$) and those excluded from analysis ($n = 255$) in the group of 700 children who were followed up with questionnaires returned. Chi-squared analysis was conducted to compare group differences in gender, race, income, and housing, while non-parametric Mann–Whitney *U* test was conducted to compare group differences in age and IQ scores, as they were not normally distributed in our sample (with more children having higher IQs and more children being 7 instead of 8 or 9 years old at baseline). No significant difference was found between the groups (see Table 1). We also explored if there were differences in PBI and CBCL between the two groups using Chi-square analysis for PBI groups and independent *t* test for CBCL. Likewise, no significant difference was found between the groups for PBI and CBCL (see Tables 2, 3 for PBI and CBCL analysis, respectively).

Perceived parenting styles in Singapore youths

The scores of the PBI showed that the majority of mothers and fathers were perceived by the participants to demonstrate optimal parenting styles, followed by affectionless controlled parenting styles. Using paired sample *t* test; significant differences on the PBI subscales “Care” and “Control” were found between Singaporean mothers

Table 1 Comparison on demographic variables of children included for analysis ($N = 445$) and excluded from analysis ($N = 255$) from the group with returned questionnaires at follow-up visit

	Remained in follow-up visit ($N = 700$)		$X (p \text{ value})$
	Included for analysis ($N = 445$)	Excluded for analysis ($N = 255$)	
Gender			0.643 (.423)
Boys	192	118	
Girls	253	137	
Race			6.09 (.193)
Chinese	347	198	
Malay	65	40	
Indian	30	13	
Others	2	0	
Missing	1	4	
Income			5.94 (.051)
\$2000 or less/mth	121	89	
>\$20,000–\$50,000/mth	212	115	
>\$5000/mth	106	46	
Missing	6	5	
Housing			4.77 (.190)
1–3 Room	49	41	
4 Room and above	345	182	
Private housing	25	18	
Others	26	13	
Missing	0	1	
Father education level			4.14 (.388)
No formal education	11	9	
Elementary school	100	66	
High school	197	116	
Pre-university/diploma	76	40	
University	61	24	
Mother education level			6.92 (.140)
No formal education	13	10	
Elementary school	108	77	
High school	228	115	
Pre-university/diploma	69	40	
University	37	13	
			$U (p \text{ value})$
Age (at first visit)	7.80 (0.83)	7.92 (0.88)	52,919.5 (.113)
Mean (SD)			
IQ (at first visit)	116.08 (10.7)	114.25 (11.66)	38,713 (.068)
Mean (SD)			

and Singaporean fathers (see Table 2). Singaporean mothers scored higher on both care [$t(399) = 9.81, p < .001$] and control [$t(400) = 5.44, p < .001$] when compared with fathers.

Effects of parenting styles on YSR

General linear model of CBCL categorical scores based on quartiles (low scores/below average/above average and

high scores) in interaction with parenting styles on YSR were analyzed. The main effects showed that scores for participants reporting optimal maternal care and paternal care were significantly lower than for participants reporting “non-optimal care” (combination of all not-optimal parenting styles, namely “affectionless control”, “neglectful”, and “affectionate constraint”) on the YSR internalizing, externalizing and total score (see Table 4). When comparing optimal parenting with “affectionless control”,

Table 2 Comparison on PBI score distribution according to bonding type, means and standard deviation on perceived level of care and control by parents in children included for analysis ($N = 445$) and excluded from analysis ($N = 255$)

Remained in follow-up visit ($N = 700$)			
	Included for analysis ($N = 445$)	Excluded for analysis ($N = 255$)	X (p value)
Maternal			
Bonding type (%)			
Optimal	30.8	22.0	
Neglectful	18.0	14.5	
Affectionate constraint	17.8	11.0	
Affectionless Control	28.8	24.7	
Missing	4.7	27.8	
Maternal care [Mean (SD)]	26.20 (6.16)	26.33 (6.30)	28.6 (.486)
Maternal control [Mean (SD)]	13.30 (6.32)	13.56 (6.90)	32.0 (.466)
Paternal			
Bonding type (%)			
Optimal	27.2	18.4	
Neglectful	20.0	12.9	
Affectionate constraint	17.3	10.2	
Affectionless control	27.0	23.1	
Missing	8.5	35.3	
Paternal care [Mean (SD)]	23.16 (6.73)	22.66 (7.33)	38.5 (.235)
Paternal control [Mean (SD)]	11.84 (6.35)	12.43 (6.70)	35.0 (.284)

Table 3 Comparison on CBCL score [means (SD)] between groups of children included for analysis ($N = 445$) and excluded from analysis ($N = 255$)

Remained in follow-up visit ($N = 700$)			
CBCL Raw Score	Included for analysis ($N = 445$)	Excluded for analysis ($N = 255$)	t (p value)
Internalizing	7.68 (7.53)	7.30 (6.77)	−.444 (.657)
Externalizing	7.71 (7.06)	7.12 (6.03)	−.742 (.458)
Total	27.24 (22.46)	25.72 (20.01)	−.604 (.546)

“neglectful”, and “affectionate constraint” parenting separately, all main effects were significant for all three YSR scales except for paternal affectionate constraint parenting.

Interactions between CBCL and perceived parenting styles

No significant interaction was found between internalizing traits of childhood (CBCL) and parenting styles (of mother or father) on internalizing traits in adolescence/young adulthood (YSR). However, significant interactions were found between paternal parenting styles and externalizing traits in childhood (CBCL) and externalizing traits in adolescence/young adulthood (YSR). More specifically, a significant interaction was found between optimal parenting of the father and externalizing traits in childhood (CBCL) and externalizing traits in adolescence/young adulthood (YSR), $F(3, 374) = 4.08$, $p = .007$ (See Fig. 1). Also, significant interactions were found between paternal optimal parenting versus paternal affectionless control parenting

[$F(3, 213) = 2.87$, $p = .037$] (See Fig. 2), and versus parental neglectful parenting and CBCL externalizing traits on YSR externalizing traits [$F(3, 186) = 3.50$, $p = .017$] (See Fig. 3), but only not versus affectionate constraint [$F(3, 173) = 1.79$, $p = .15$] (see Fig. 4) and externalizing traits in childhood on externalizing traits in young adulthood. In other words, and as shown in the figures, optimal care of the father lowers the risk of developing externalizing problems in youth for those children who had already higher externalizing scores in their childhood. Interestingly no interaction was found between any of the maternal parenting styles with internalizing or externalizing traits of the child (see Table 5).

Discussion

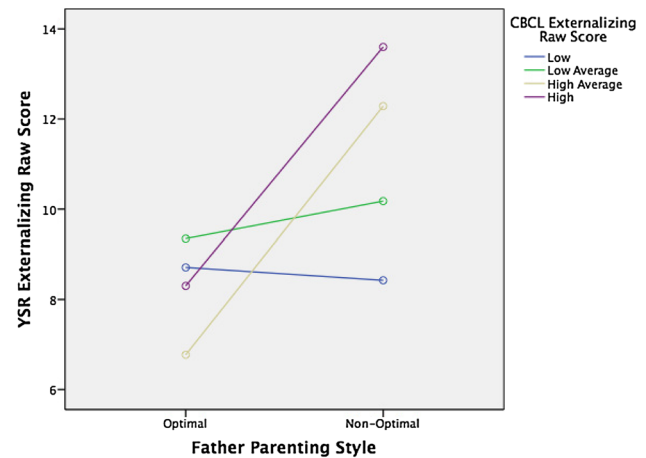
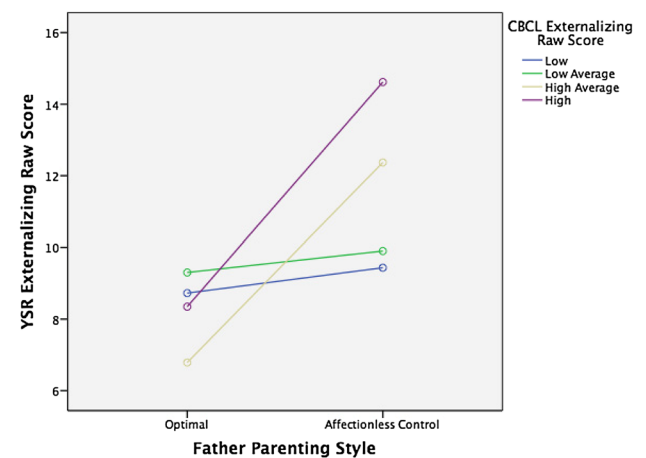
Our data show a high correlation between behavioral and emotional traits in childhood and those in young adulthood, suggesting a general consistency of behavior and emotional

Table 4 Main effects of perceived optimal parenting (F value) with other parenting style on YSR internalizing, externalizing and total score

	Mother	Father
YSR internalizing	22.7***	15.0***
Optimal	($n = 131$)	($n = 117$)
Non-optimal	($n = 272$)	($n = 265$)
	24.1***	16.9***
Optimal	($n = 131$)	($n = 117$)
Affectionless control	($n = 121$)	($n = 112$)
	1.94	0.53
Optimal	($n = 131$)	($n = 117$)
Affectionate constraint	($n = 78$)	($n = 72$)
	16.7***	11.6**
Optimal	($n = 131$)	($n = 117$)
Neglectful	($n = 73$)	($n = 81$)
YSR externalizing	17.1***	14.4***
Optimal	($n = 134$)	($n = 117$)
Non-optimal	($n = 276$)	($n = 275$)
	13.9***	12.6***
Optimal	($n = 134$)	($n = 117$)
Affectionless control	($n = 123$)	($n = 114$)
	2.60	4.10*
Optimal	($n = 134$)	($n = 117$)
Affectionate constraint	($n = 74$)	($n = 74$)
	16.8***	10.9**
Optimal	($n = 134$)	($n = 117$)
Neglectful	($n = 79$)	($n = 87$)
YSR total	23.6***	15.8***
Optimal	($n = 125$)	($n = 109$)
Non-optimal	($n = 247$)	($n = 241$)
	19.40***	18.2***
Optimal	($n = 125$)	($n = 109$)
Affectionless control	($n = 108$)	($n = 98$)
	5.82*	3.42
Optimal	($n = 125$)	($n = 109$)
Affectionate constraint	($n = 72$)	($n = 67$)
	17.6***	9.60**
Optimal	($n = 125$)	($n = 109$)
Neglectful	($n = 67$)	($n = 76$)

*** $p < .001$, ** $p < .01$, * $p < .05$

profiles/traits over time. This is especially interesting, since parents completed the CBCL of children at 7–9 years of age, while the young adult participants completed the YSR at a mean age of 18 years. This finding also suggests a high inter-rater reliability of these screening instruments over time in our cohort. Second, our data show strong main effects of perceived maternal care and paternal care, suggesting that both are influential for socio-emotional development. Third, although we found evidence of a differential

**Fig. 1** Interaction of paternal optimal parenting style ($n = 117$) vs. paternal non-optimal parenting style ($n = 275$) with CBCL externalizing raw scores (in quartiles) on YSR externalizing raw scores, $F(3, 374) = 4.08$, $p = .007$ **Fig. 2** Interaction of paternal optimal parenting style ($n = 117$) vs. paternal affectionless control parenting style ($n = 114$) with CBCL externalizing raw scores (in quartiles) on YSR externalizing raw scores, $F(3, 213) = 2.87$, $p = .037$

effect of parental care as a function of socio-emotional status in childhood, as reflected in the CBCL data, this effect was only unique to externalizing scores in the YSR. Thus, we report a greater effect of paternal care on externalizing scores among youth with higher externalizing scores in childhood. This finding is consistent with previous reports of increased susceptibility to the effects of parenting among young children with more difficult childhood temperament [25].

Interestingly, while we found the main effects of both perceived maternal and paternal care on socio-emotional function as reflected in the YSR, the interaction effect

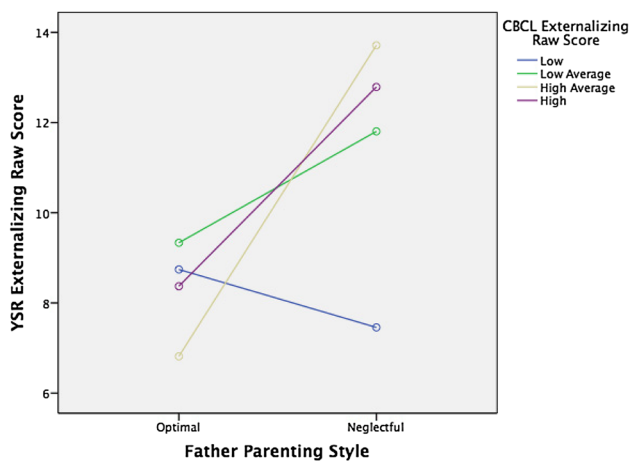


Fig. 3 Interaction of paternal optimal parenting style ($n = 117$) vs. paternal neglectful parenting style ($n = 87$) with CBCL externalizing raw scores (in quartiles) on YSR externalizing raw scores, $F(3, 186) = 3.50$, $p = .017$

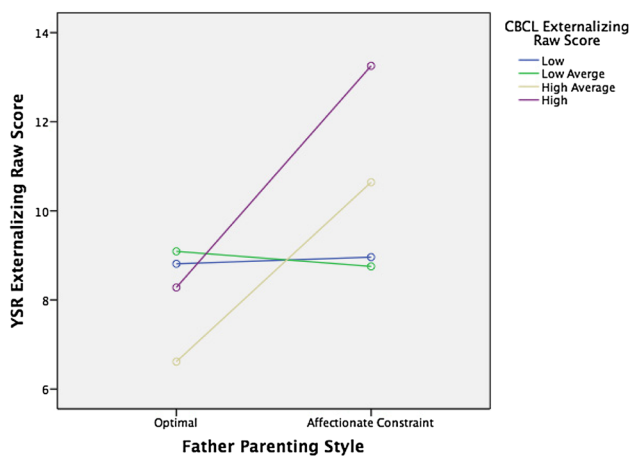


Fig. 4 Interaction of paternal optimal parenting style ($n = 117$) vs. paternal affectionate constraint parenting style ($n = 74$) with CBCL externalizing raw scores (in quartiles) on YSR externalizing raw scores, $F(3, 173) = 1.79$, $p = .15$

between externalizing scores in childhood and care on externalizing scores on the YSR was apparent only for paternal care (Table 5; Fig. 1). This interaction effect was significant for optimal versus non-optimal parenting and specifically for affectionless control and neglectful parenting. These findings suggest that optimal parenting by the father is especially important for children who score high on externalizing problems in childhood, although optimal parenting of the mother also seems to decrease externalizing problems over time. For children with elevated externalized traits, optimal parenting by the father seems to be a protective factor; hence, highly reactive or negative

children are more susceptible to positive parenting by the father than their less reactive peers. This finding is in concordance with previous findings of increased susceptibility to parenting styles of children with difficult behavioral and emotional traits [25, 32].

Our findings are in agreement with previous studies, which suggested differential effects of caretaking by mothers or fathers. Thus, associations of ADHD with comorbid externalizing problems were negatively associated with care of the father [14]. A study by Narusyte and colleagues [33] found that critical remarks of father, but not mother, were associated with externalizing behavior of adolescents. Other studies also suggest the importance of the paternal role with increasing age of the child. For example, in a sample of 1364 children of ten different Western geographic areas, maternal support for child autonomy in boys was mediated by higher self-reliance at grade one, while the paternal support for child autonomy was associated with increase in self-reliance in boys for a longer period, from grades one to three [34]. In addition, having a caring father has been associated with lower risk of certain psychopathologies, such as posttraumatic stress disorder [35].

In contrast to previous studies, we did not find any interaction effect of perceived parenting styles and socio-emotional status in childhood on later internalizing problems [36]. This inconsistency in findings might be explained by the differences in the study population, study design, stability of internalizing traits in our population, or differences between parenting practices in different cultures. Although some parenting practices (e.g., nurturing and protecting offspring [37]) and parent–child interaction therapies are applicable across cultures [38], a discrepancy has been described between parenting styles in Asia in comparison to European-American cultures [39], with parenting styles in Asia being more controlling than in Europe and America. In contrast to the existing literature, a higher percentage of Singaporean mothers and fathers in our study displayed affectionless control as well as neglectful parenting styles, but a lower percentage displayed affectionate control parenting styles when compared to other non-clinical samples from Europe [40]. Despite the differences in parenting styles, we only found interaction effects between paternal parenting styles, but not between controlling or neglectful parenting styles of the mother with socio-emotional status in childhood on mental health in adolescents when assessed across the entire sample. A possible explanation can be gleaned from previous studies that showed differential effects of maternal parenting styles in Asian cultures as compared to westernized cultures. There are a number of reports showing that controlling styles of mothers associate with positive outcomes in Asian participants. For example, Li and colleagues [41] found that perceived maternal authoritarian parenting styles were related to

Table 5 Interactions of perceived parenting style by fathers and mothers (optimal versus other parenting style) and CBCL internalizing, externalizing and total score on YSR internalizing, externalizing and total score [$F(p$ value)]

	YSR		
	Internalizing	Externalizing	Total
Opt vs. non-opt			
PBI father			
CBCL int	1.17 (.32)	–	–
CBCL ext	–	4.08** (.007)	–
CBCL total	–	–	1.63 (.18)
PBI mother			
CBCL int	0.80 (.50)	–	–
CBCL ext	–	0.91 (.44)	–
CBCL total	–	–	1.05 (.37)
Opt vs. affectionless control			
PBI father			
CBCL int	1.21 (.31)	–	–
CBCL ext	–	2.87* (.037)	–
CBCL total	–	–	1.29 (.28)
PBI mother			
CBCL int	1.71 (.16)	–	–
CBCL ext	–	1.62 (.19)	–
CBCL total	–	–	2.11 (.10)
Opt vs. affectionate constraint			
PBI father			
CBCL int	0.98 (.40)	–	–
CBCL ext	–	1.79 (.15)	–
CBCL total	–	–	0.92 (.43)
PBI mother			
CBCL int	1.14 (.34)	–	–
CBCL ext	–	0.50 (.68)	–
CBCL total	–	–	0.60 (.62)
Opt vs. neglectful			
PBI father			
CBCL int	1.22 (.30)	–	–
CBCL ext	–	3.50* (.017)	–
CBCL total	–	–	1.56 (.20)
PBI mother			
CBCL int	1.10 (.35)	–	–
CBCL ext	–	0.66 (.58)	–
CBCL total	–	–	0.75 (.53)

*** $p < .001$, ** $p < .01$, * $p < .05$

positive socio-emotional development in Chinese sample, but not in the European young adults.

A major strength of this study is the prospective study design with a reasonable sample size for a longitudinal study conducted over more than 10 years. Additionally, internalizing and externalizing problems were explored over the full range of the spectrum, with most children

being in the normal range. Our study also has limitations. First, the mean score on the YSR externalizing scale is in the lower range; hence, most children do not have serious externalizing problems. As development trajectory studies show that a reduction of externalizing problems is expected for both sexes from childhood to adolescence [3], this raises the question on how much of this improvement in externalizing symptoms can be attributed to the parenting style of the father. Although in our study the overall externalizing symptoms indeed decreased over time, we still found an interaction effect with optimal parenting of father suggesting that a perceived optimal parenting style of father further reduces externalizing symptoms from childhood to early adulthood. Second, the data are based on subjective information. However, we found a high correlation between CBCL, filled out by parents, and YSR, filled out by the adolescents, which suggests high inter-rater reliability. Moreover, in previous studies, child reports of parenting have been widely used and found to be consistent with parents' and observers' reports [42, 43]. Furthermore, subjective experiences are thought to have a greater impact on physiology and behavior response than objective measurements [44]. Third, in our study we have investigated the parenting styles of mother and father separately, while in "real life" both parenting styles would have interacted and created an impact on the child. Also, a one- or two-parent household may influence the effect of parenting styles on the child. Although it may be difficult to collect this information over a longer period, as this may change over time, it is a limitation that we lack this information in our study. Another drawback is that our findings may not be representative of the whole Singaporean population, as the socioeconomic status in our sample was slightly higher as compared to the national sample and the children had generally a higher IQ. Although we controlled for socioeconomic status, our data may not be representative of parents and children with a very low socioeconomic status.

Conclusion

Our results suggest that optimal parenting of both parents is essential in social emotional development and an optimal parenting style of the father may moderate externalizing symptoms from pre-puberty to puberty. Future studies should replicate and further explore the role of parenting over an extended time period from childhood into young adulthood. Additionally, it will be important to explore the maternal and paternal parenting styles together. Previous studies found low levels of similarity between maternal and paternal parenting styles. Studies also showed that dissimilarity between parenting styles is an important factor in the development of socio-emotional problems in children and

that more similarity in some parenting styles between parents is associated with more compliant behavior in children [45–48]. Understanding the influence of different parenting styles on the child will have long-term benefits, as early intervention programs can help to improve parenting styles and as such may improve health outcomes for children.

Acknowledgements This work was supported by the National Medical Research Council, NMRC/0975/2005 Singapore. All authors declare that the study sponsor had no role in the design or conduct of the study; in the collection, management, analysis, or interpretation of data; or in the preparation, review, or approval of the article. We thank the project coordinator, Ms. Su Shan Yeow, and other study staffs for their additional contributions.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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The relationship between Internet parenting styles and Internet usage of children and adolescents



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ARTICLE INFO

Article history:

Received 21 December 2015

Received in revised form

17 February 2016

Accepted 19 February 2016

Available online 1 March 2016

Keywords:

Parenting style

Internet

Children's Internet use

Adolescents' Internet use

ABSTRACT

Parenting styles, which are known to have a significant effect on children's development, also have a significant effect on children's Internet use. This study was designed to demonstrate how parenting styles in relation to Internet use are perceived by children and parents and how these styles affect children's Internet use. Both qualitative and quantitative data-collection techniques were used in the study. The quantitative data-collection process was carried out through the participation of 1289 students, and the qualitative data-collection process was carried out with 20 parents and 23 children. The result of the study showed that the Internet parenting styles could be categorized as laissez-faire, permissive, authoritative, and authoritarian. A significant relationship was shown between Internet parenting style and child's gender and mothers' education level. It was also found that as the students' age and grade level increased, Internet parenting styles that were interpreted as initially authoritative were later interpreted as laissez-faire. As the grade level increased, the Internet parenting style tended to lean toward laissez-faire.

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1. Introduction

As a means of accelerating and facilitating communication and access to information, the Internet has become an important constituent in the lives of all users, particularly children and adolescents. Providing these facilities and opportunities to its users, the Internet serves a wide range of purposes for many individuals in many fields worldwide. Internet use in Turkey is increasing incrementally every year, as in other countries. In parallel with the increase in Internet service providers and the decrease in prices, the number of individuals with access to the Internet is also increasing every day in Turkey (Turkish Statistical Institute [TurkStat], 2015). Data from TurkStat (2015) indicate that the household Internet usage rate is 69.5% and that its usage has increased by 1.5% from the previous year. TurkStat (2013) showed that the Internet usage rate is 50.8% for children ages 06–15 years, 36.9% for those ages 06–10 years, and 65.1% for those ages 11–15 years. Similarly, also influenced by the F@TIH project (Movement of Enhancing Opportunities and Improvement Technology, abbreviated as F@TIH), which was launched in 2010, the technological infrastructure of all schools has been improved, tablets are distributed to foster students'

technological literacy, and Internet access is aimed at every child. The number of children and adolescents with access to the Internet is increasing every day in parallel with these developments and opportunities (TurkStat, 2013). Moreover, it was found that 45.6% of children ages 06–15 years use the Internet almost every day (TurkStat, 2013) and that the Internet is mostly used at home by both children and adults (Hofferth, 2010; Kaşıkçı, Çağıltay, Karakuş, Kurşun, & Ogan, 2014; Livingstone, Mascheroni, Ólafsson, & Haddon, 2014; TurkStat, 2015).

Although the Internet has many utilities and facilities, its unconscious, uncontrolled, and extreme use creates risks for all users, particularly children and adolescents. Unconscious and uncontrolled Internet use causes academic failure (Yang & Tung, 2007; Young, 1996), social isolation, and other negative effects, e.g., anxiety, depression, and loneliness (Chen & Lin, 2015; Steinfeld, Ellison, & Lampe, 2008; Yen, Ko, Yen, Wu, & Yang, 2007), cyber bullying (Aricak & Ozbay, 2016; Gezgin & Çuhadar, 2012; Peluchettea, Karl, Wood, & Williams, 2015; Slonje, Smith, & Frisen, 2013), the tendency to commit crime (Oktan, 2015; Patton, Eschmann, & Butler, 2013), a decline in life satisfaction and quality (Bulut-Serin, 2011; Çelik & Odacı, 2013; Çuhadar, 2012) and some other psychological problems (Cao, Sun, Wan, Hao, & Tao, 2011; Kim & Davis, 2009; Ko, Yen, Yen, Chen, & Chen, 2012; Landers & Lounsbury, 2006).

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Research emphasizes that parental control and guidance are effective in reducing the negative situations that children face through the Internet medium (Leung & Lee, 2012; Valcke, Schellens, Van Keer, & Gerarts, 2007), but strict rules and control could compromise a child's future acquisitions (Cankaya & Odabasi, 2009). Cankaya and Odabasi (2009) state that exhibiting parenting attitudes may help limit a child's Internet usage and thus protect the child from the Internet's negative aspects. These researchers also state that a change in attitude of parents who used to have a negative attitude toward Internet use may enable their child to gain the maximum benefit from this medium.

2. Theoretical background

2.1. Parenting styles and Internet parenting styles

Although the Internet is a technology that children and adolescents frequently use and has an important place in their lives, families bear the great responsibility to prevent the risks that children may encounter from this medium (Duerager & Livingstone, 2012; Erdur-Baker & Kavsut, 2007; Rosen, Cheever, & Carrier, 2008; Valcke, Bonte, De Wever, & Rots, 2010). Indicating that children's Internet use is affected by numerous factors, researchers emphasize that parenting style is one of these factors (Eastin, Greenberg, & Hofschire, 2006; Rosen et al., 2008; Valcke et al., 2010). Baumrind (1991, p. 57) defined parenting style as the actions taken by parents during the period in which the child socializes and how the child is controlled. In the following years, in addition to the studies on parenting styles that Baumrind had defined in consideration of the degree of control in the interaction between parents and children, Maccoby and Martin (1983) also indicated that the degree of warmth in the interaction between the parents and child is important in parenting style.

Parental control in Internet usage includes guidance for children's online activities, setting up rules to regulate Internet use, and taking measures to restrain children's inappropriate online activities. In the relevant literature review, it is noted that children's Internet-use processes should be kept under control (Cho & Cheon, 2005; Pauwels, Bauwens, & Vleugels, 2008; Rosen et al., 2008), and to this end, parents should use content-filtering software and monitor their children's Internet history (European Commission, 2008; Liau, Khoo, & Ang, 2005; Mitchell, Finkelhor, & Wolak, 2005; Stark, 2007; Wang, Bianchi, & Raley, 2005). Additionally, the literature review revealed that a very small number of parents set up rules in relation to Internet usage duration (Duimel & de Haan, 2007; Wang et al., 2005).

Parental warmth in terms of Internet usage includes advanced communication with children during their use of this online medium and support for the children. In the related literature, some research emphasizes the importance of parental guidance (De Rycke, 2007; Walrave, Lenaerts, & De Moor, 2008), and some research notes the necessity for parents to be in closer proximity to their children and to demonstrate more care toward them during their Internet-usage process (Cho & Cheon, 2005; Law, Shapka, & Olson, 2010; Lei & Wu, 2007; Lwin, Stanaland, & Miyazaki, 2008; Valkenburg, Peter, & Schouten, 2006). Research also shows the necessity of parents to adopt a more respectful and understanding attitude towards their child's preferences during Internet usage (Fleming, Greentree, Cocotti-Muller, Elias, & Morrison, 2006; Lwin et al., 2008). In their studies, Lee and Chae (2007) and Kerawalla and Crook (2002) find that when parents and children use the Internet together, the child better learns the negative aspects of the Internet.

The four parenting styles formed by the intersection of parental control and parental warmth (see Fig. 1) can be defined as follows:

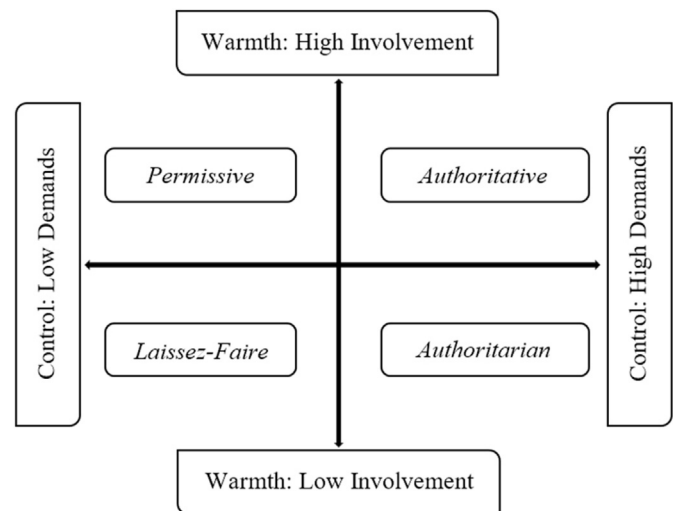


Fig. 1. Parenting styles (based on Baumrind, 1991; Maccoby & Martin, 1983).

- **Authoritative Parenting Style:** Authoritative parents have solution-oriented communication with their child, share ideas mutually and support the child's special skills and tendencies (Maccoby, 1992). These parents usually establish practical rules, e.g., the Internet-use duration (Valcke et al., 2010).
- **Permissive Parenting Style:** Permissive parents do not demand much of their child, avoid facing their child and do not refuse the child's requests (Darling, 1999).
- **Laissez-faire Parenting Style:** Having a tendency to rarely give feedback to their child, these parents provide little or no support, emotionally or as guidance, for their child. Parents with this style have poor communication and low interaction with their child (Maccoby, 1992). Laissez-faire parents do not reflect a correct supportive or restrictive attitude with regard to their children's Internet use (Valcke et al., 2010).
- **Authoritarian Parenting Style:** In the authoritarian parenting style, which is defined as the intersection of low parental warmth and high parental control, the child is expected to obey and not to break the strict rules established by the parents (Darling, 1999).

The reviewed literature in relation to parenting styles indicates that mothers primarily act in the authoritative style, whereas fathers have a tendency to lean toward the authoritarian style (Aunola, Stattin, & Nurmi, 2000). With the increase in their education level, parents' control and warmth also increase (Pauwels et al., 2008). It was found that girls adapt to the authoritative parenting style better, whereas boys accept the laissez-faire style more (Aunola et al., 2000).

The reviewed literature in relation to Internet parenting styles indicates that parents who are younger, more educated and hence more aware with regard to the Internet establish more rules and have warmer interactions with their children with respect to their children's Internet usage in comparison with those parents who are unaware (European Commission, 2008; Valcke et al., 2010). Other studies show that younger children, compared to adolescents, are controlled and limited more strictly by their parents (European Commission, 2008; Lwin et al., 2008; Valkenburg et al., 2006; Wang et al., 2005) and receive more explanation about Internet-usage rules (Valcke et al., 2010). The literature also reveals an adverse effect of the increase in the number of children in a family on Internet usage control and warmth (Duimel & de Haan, 2007). The research indicates that the rules established by the families for

Internet usage for girls and boys do not differ in content or number (European Commission, 2008; Livingstone & Bober, 2004). However, some research shows that mothers adopt a more restrictive attitude than fathers in relation to Internet usage (European Commission, 2008) and that Internet usage is more restricted for girls than for boys (Pauwels et al., 2008).

In a study conducted by Valcke et al. (2010) regarding Internet parenting styles, it was concluded that the majority of parents act in the authoritative Internet style, and there is a relationship between Internet parenting style and the level of Internet usage of parents and children. Similarly, in another study by Lou, Shih, Liu, Guo, and Tseng (2010), it was found that most parents have an authoritative Internet style, and the least observed Internet style is the permissive style. Lou et al. (2010) noted that the authoritative parenting style is the most effective in disciplining children, and the parenting style and parents show a relationship with Internet usage, Internet literacy and Internet parenting. By contrast, in another study performed by Ayas and Horzum (2013), it was found that parents adopt the laissez-faire Internet style most commonly, followed, by the permissive, authoritative, and authoritarian styles, respectively.

2.2. The relationship between Internet parenting style and children's Internet usage

Related research indicates that control over children in relation to the Internet, warmth towards children during this period (Eastin et al., 2006), and restrictive actions towards children's Internet usage are not related to children's Internet usage (Lee & Chae, 2007). Research has noted that parental control is not effective in reducing Internet risks (Law et al., 2010; Liao et al., 2005; Livingstone & Helsper, 2008). However, in some other studies, it was stated that parenting styles may prevent children from coming across negative or inappropriate websites (Cho & Cheon, 2005; Fleming et al., 2006; Heim, Brandtzaeg, Hertzberg, & Endstad, 2007; Leung & Lee, 2012; Valcke et al., 2007) and that children can understand the risks of the Internet and adapt to the right way of using it (Eastin et al., 2006). In another study, conducted by Lwin et al. (2008), it was found that parental control causes a decrease in the Internet-usage levels of young children. However, it is stated that although parents' control and supervision of their children's Internet usage may prevent children's exposure to online risks, strict rules and restrictions may impede children's opportunities to learn and their online communication (Cankaya & Odabasi, 2009; Duerager & Livingstone, 2012).

2.3. Aim of the study

Among European countries, Turkey is viewed as a country with the lowest consciousness levels in the context of the Internet literacy of children and with the least knowledge about children's safe Internet usage (Haddon & Livingstone, 2012). Striking data from the same report show that the ratio of children coming across inappropriate content shared over the Internet is twice the average of children in other European countries. In an evaluation of the interactions of parents with their children during Internet use, it was noted that Turkish parents use the Internet the least and have the least amount of knowledge about it (Haddon & Livingstone, 2012). Furthermore, in the study on the Internet usage of family members, mothers in particular were reported to have very low levels of knowledge about Internet usage compared to their European counterparts (Haddon & Livingstone, 2012).

Although many investments have been made in Turkey to extend the use of technology and the Internet, there here has been little (Ayas & Horzum, 2013; Horzum & Bektas, 2014) research on the relationship between Internet parenting style and children's

Internet usage. Because the samples of these studies consisted only of students of certain ages, a generalization of the obtained data is limited. For this reason, the necessity for further holistic studies to identify the parenting styles of those who have different cultural backgrounds and children of different ages and different demographic characteristics is mentioned in the related literature studies (Ayas & Horzum, 2013; Haddon & Livingstone, 2012; Horzum & Bektas, 2014; Ihmeideh & Shawareb, 2014; Valcke et al., 2010). The main purpose of this study is to identify the Internet parenting styles that families prefer during the Internet-usage process of children and adolescents and to present the relationship between the Internet parenting style and children's gender, children's education level, children's daily Internet-usage time and parents' education level. Through a number of interviews with parents with different characteristics in terms of various parameters, such as Internet literacy and education level, the aim was to gauge parents' knowledge of the Internet's risks and safe usage, parents' perspective of the Internet, children's Internet-usage process, and parents' care and guidance during their children's Internet usage-process. In line with this general purpose, the following research questions were posed:

1. What is the Internet parenting style most commonly preferred by parents?
2. Is there a relationship between Internet parenting style and child/parent characteristics?
3. What is the effect of different Internet parenting styles on a child's Internet usage?
4. Do parents' Internet style and children's opinion of their parents' style coincide with each other?

3. Materials and methods

3.1. Research design

The research was performed using a mixed-method approach in which both qualitative and quantitative data were used simultaneously. The convergent parallel mixed methods design was used. In this approach, qualitative and quantitative data are collected simultaneously, and the findings are compared to determine whether the findings obtained verify each other (Creswell, 2013, p. 222). The relevant pattern is presented in Fig. 2.

The cross-sectional survey model, a general survey model, was used to acquire the quantitative data for the research. In cross-sectional survey research, measurement is performed once in accordance with the characteristics of the parameters to be described (Fraenkel & Wallen, 2009, p. 391). The case-study pattern was used to collect the qualitative data for the research. In the case studies, case-specific factors (e.g., environment, individuals, and processes) were studied in a holistic approach, and the focus was on how they affected and were affected by the relevant case (Yildirim & Simsek, 2013, p. 83).

3.2. Participants

The study samples consisted of two different groups. The first research group (from which the quantitative data were collected) consisted of a total of 1356 students who studied at five different primary and secondary schools and six different high schools located in Edirne City center. The questionnaires from 67 students who did not give the correct answers in the data-collection tool were excluded from the research. For this reason, the analyses were conducted from the data obtained from 1289 students (see Table 1). Edirne, which is located in western Turkey and shares borders with the Balkan states, is a city with a near-high level of development in

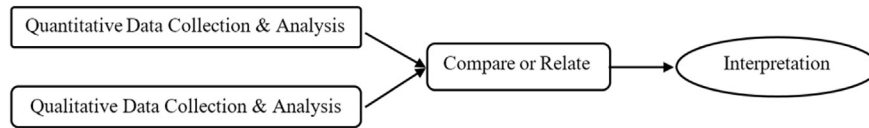


Fig. 2. Convergent parallel mixed-methods design (based on Creswell, 2013, p. 220).

Table 1
Demographic characteristics of the students.

Sex	N	(%)	Grade level	N	(%)
Boy	630	48.9	3rd grade	109	8.5
Girl	659	51.1	4th grade	165	12.8
Age	N	(%)	5th grade	116	9
9–10	239	18.5	6th grade	124	9.6
11–12	259	20.1	7th grade	137	10.6
13–14	272	21.1	8th grade	123	9.5
15–16	379	29.4	9th grade	170	13.2
17 or older	140	10.9	10th grade	218	16.9
Student Education Level	N	(%)	11th grade	63	4.9
High School	525	40.7	12th grade	64	4.9
Middle School	535	41.5	Receive Technical Help from	N	(%)
Elementary School	229	17.8	Father	396	30.7
Father Education Level	N	(%)	Father and Mother	269	20.8
Elementary School	137	10.6	Mother	223	17.3
Middle School	162	12.6	Friends	165	12.8
High School	402	31.2	Forums	147	11.4
Bachelor's Degree	436	33.8	Nobody	89	6.9
> Bachelor's Degree	152	11.8	Warned by	N	(%)
Mother Education Level	N	(%)	Mother	614	47.6
Elementary School	283	22	Father	344	26.7
Middle School	335	26	Father and Mother	198	15.3
High School	258	20	Nobody	133	10.3
Bachelor's Degree	255	19.8	Daily Internet Usage	N	(%)
> Bachelor's Degree	158	12.2	Less than 1 h	32	2.5
Connect to Internet	N	(%)	1–2 h	278	21.6
By oneself	1143	88.7	2–3 h	265	20.6
Under parental supervision	146	11.3	3–4 h	472	36.6
Connect to Internet from	N	(%)	More than 4 h	242	18.8
Home	1239	96.1	Internet Usage Years	N	(%)
Internet cafes	128	9.9	More than 6 yrs.	651	50.5
School	651	50.5	3–5 yrs.	465	36.1
			1–2 yrs.	173	13.4

terms of the socio-economic development ranking of the country (Ministry of Development, 2011).

To collect data from the second group (from which the qualitative data were obtained), a typical case sampling was used. The purpose of this sampling was to obtain an idea of a certain area through studying the average cases and to inform those who did not have sufficient information about this area, subject matter, application and innovation (Yildirim & Simsek, 2013, p. 138). The qualitative study data were obtained from the second group, which consisted of eight females and 12 male parents ages 35–48 years. The demographic data on the participants and their children are presented in Table 2.

3.3. Data collection tools and procedure

For the collection of the quantitative research data, The Internet Parental Style Scale and personal information questionnaire were used. A semi-structured interview form, which was developed by the researcher, was used to obtain the qualitative data.

The Internet Parental Style Scale: The 5-point Likert type The Internet Parental Style Scale was developed by van Rooij and van den Eijden (2007). Its original Dutch version was translated into English by Valcke et al. (2010). The Turkish version of the scale was adapted by Ayas and Horzum (2013). The scale consists of two

factors with 25 items. The “parental control” factor of the scale consists of 11 items, and the “parental warmth” consists of 14 items. A point between 1 and 5 is obtained from each item on the dimensions of parental control and warmth. Points 1–2 are considered low, and points 3–5 are considered high. A 2 × 2 structure is formed by the obtained values, which includes low/high parental control and low/high parental warmth. Cronbach's alpha reliability coefficient is found to be .94 for the scale in general, .86 for the parental control factor and .88 for the parental warmth factor (Ayas & Horzum, 2013). In the present study, Cronbach's alpha reliability coefficient was found to be .92 for the scale in general, .87 for the parental control factor and .85 for the parental warmth factor. In Fig. 1, the determination of the Internet parenting style using parental control and warmth dimensions is demonstrated visually.

Personal Information Form: The personal information form drawn up by the researcher included a set of questions prepared to obtain certain demographic information such as the child's gender, age, grade, and Internet-usage time and the education level of the mother and father.

The research data were obtained from 1356 students of various education levels in March, 2015. The research was conducted in person, and the students were informed at the outset about the subject of the research and data-collection tools. They were reminded that participation in the research was on a volunteer

Table 2

Demographic characteristics of the interviewed parents and their children.

Sex		Age		Education level		Years of Internet usage		Daily Internet usage	
Parent	Child	Parent	Child	Parent	Child	Parent	Child	Parent	Child
Female	Boy	42	16	B.N.	HS	13 yrs.	>6 yrs.	3–4 h	3 h
Male	Girl	45	12	B.E.	ES	15 yrs.	3–5 yrs.	6–7 h	1 h
Male	Boy	41	14	Ph.D.	MS	19 yrs.	>6 yrs.	4–5 h	3 h
Female	Girl	40	14	Sc.D.	MS	16 yrs.	>6 yrs.	4–5 h	3 h
Female	Girl	35	14	B.S.	MS	16 yrs.	>6 yrs.	1 h	3 h
Male	Boy	43	16	B.E.	HS	16 yrs.	>6 yrs.	8 h	2 h
Female	Girl	47	17	ES	HS	6 yrs.	>6 yrs.	1 h	3 h
Male	Girl	42	12	Ph.D.	MS	12 yrs.	>6 yrs.	1 h	3 h
Female	Boy & Girl	42	12/12	B.E.	ES	10 yrs.	3–5 yrs.	2 h	1 h
Male	2 Girls	43	16/12	Ph.D.	HS/MS	10 yrs.	>6/3–5yrs.	2 h	2 h/1 h
Male	Boy	43	10	B.S.	ES	14 yrs.	>6 yrs.	1 h	2 h
Male	Girl	48	12	Ph.D.	ES	16 yrs.	>6 yrs.	2 h	1 h
Female	Boy	44	16	ES	HS	–	3–5 yrs.	–	4 h
Male	2 Boys	40	12/10	B.E.	MS/ES	16 yrs.	3–5/>6yrs.	2–3 h	3 h/1 h
Male	Girl	36	10	B.E.	ES	14 yrs.	1 yr	3–4 h	1 h
Female	Boy	35	12	HS	MS	6 yrs.	>6 yrs.	1 h	2 h
Female	Boy	43	10	HS	ES	4 yrs.	3–5 yrs.	1 h	2 h
Male	Boy	41	12	Ph.D.	MS	17 yrs.	3–5 yrs.	2 h	2 h
Male	Boy	46	14	Ph.D.	MS	15 yrs.	>6 yrs.	2–3 h	3 h
Male	Boy	43	10	MS	ES	19 yrs.	>6 yrs.	3 h	2 h

B.N.: Bachelor's of Nursing B.E.: Bachelor's of Engineering/Education B.S.: Bachelor's of Science Ph.D.: Doctor of Philosophy Sc.D.: Doctor of Science ES: Elementary School MS: Middle School HS: High School.

basis. The scale was answered in approximately 20 min.

During the process of the qualitative data collection, the parents answered the open-ended semi-structured interview questions while their children stated their opinion on their parents' Internet styles on The Internet Parental Style Scale. The interview form was set by the researcher after a literature review such that it was capable of revealing the purpose and scope of the research. To ensure the scope validity of the interview form, three domain-expert academicians were consulted. In line with the suggestions from the domain-expert academicians, the form was recomposed and took its final form. To test the intelligibility and applicability of the questions, two parents were interviewed in a pilot scheme on a voluntary basis, and no problem was encountered with this scheme. Each parent was evaluated in semi-structured interviews through the form that took its final form in line with expert opinions. The interviews were recorded using a voice recorder. During the interviews, the researcher avoided any orientation that may have affected the participants' perspectives. The determination of the participants was performed with the intention of ensuring credibility, transmissibility, consistency, and the verifiability of the research through employing strategies such as purposive sampling, an expert review on the research data and findings, and the approvability and detailed description of the research process and findings from the research report. Any orientation was avoided that may have affected participants' opinions during the application stage and semi-structured interviews, and the research and data-collection processes were ensured to proceed in a natural and objective manner.

3.4. Data analysis

In the data obtained from the quantitative part of the research, the control in relation to the classification of the Internet parenting styles was examined using discriminant analysis, and the relationship between the Internet parenting style used on the students and other parameters was examined using the chi-square test. The analysis of the qualitative data was performed using the content-analysis technique. The main objective of the content analysis was to identify the concepts and relationships that could explain

the data collected (Yildirim & Simsek, 2013, p. 259). In the research-analysis data, a word processor, a spreadsheet, and qualitative data-analysis software were used. All the research data and voice recordings were transferred in advance to a computer medium. An academic member listened to and confirmed all recordings to ensure the accuracy of the data and voice recordings transferred to a computer medium. Pursuant to the obtained data, the themes were presented to two academicians who are experts in educational technologies and qualitative data, and then, inter-rater reliability analysis was performed for the themes obtained. Here, to present the opinion on the themes, the formula *inter-rater reliability* = $\frac{\text{agreement}}{\text{agreement} + \text{disagreement}}$, which was offered by Miles and Huberman (1994, p. 64), was used. As a result of the calculations, the inter-rater reliability coefficients for all themes were shown to vary between .86 and .96, and the reliability coefficient for the general average of themes was found to be .89. Because the inter-rater reliability coefficient found was above .70, which was set as the criterion (Gay, 1987, p. 217), the themes were taken to be reliable.

4. Findings

4.1. Internet parenting styles preferred by parents

In the research, after the demographic information was collected, the accuracy of the classification made using The Internet Parental Style Scale was tested. Discriminant analysis was used for this purpose. One of the purposes of using discriminant analysis is to decide which parameter group the data will fall under (Kalaycı, 2014, p. 335). The results of the discriminant analysis on the accuracy of the Internet parenting style classification are given in Table 3.

Table 3 shows an 87.4% possibility that the discriminant function used in determining the Internet parenting styles of students' families was correctly assigned to the groups to which families' Internet parenting styles were classified using the scale. The findings presented in Table 3 show that 595 of the students considered their family's Internet parenting style to be laissez-faire, and 395 considered it to be permissive. Whereas 282 children stated that

Table 3
Internet parenting style classification – discriminant analysis.

Internet parenting style		Predicted group membership				
		Laissez-faire	Authoritarian	Permissive	Authoritative	Total
Original Count	Laissez-faire	497	61	37	0	595
	Authoritarian	0	17	0	0	17
	Permissive	0	5	364	26	395
	Authoritative	0	26	7	249	282
Original %	Laissez-faire	83.5	10.3	6.2	0	100
	Authoritarian	0	100	0	0	100
	Permissive	0	1.3	92.2	6.6	100
	Authoritative	0	9.2	2.5	88.3	100

*Rate of people accurately classified in the group to which they belonged was 87.4%.

the Internet parenting style in their family was authoritative, 17 children stated that their family adopted the authoritarian Internet parenting style.

4.2. The relationship between Internet parenting style and child/parent characteristics

In this stage of the research, first, the relationship between Internet parenting style and the child's gender was examined. The findings obtained are presented in Table 4.

The findings presented in Table 4 show that the Internet parenting style of 227 (34.4%) female students' families was authoritative, that of 221 (30.7%) was permissive, that of 205 (31.1%) was laissez-faire, and that of 6 (.9%) was authoritarian. The Internet parenting style of 390 (61.9%) male students' families was shown to be laissez-faire, that of 174 (27.6%) was be permissive, that of 55 (8.7%) was authoritative, and that of 11 (1.7%) was authoritarian. The relationship between the Internet parenting style of the student's family and the student's gender was observed to be significant ($\chi^2_{(3)} = 168.93$, $p < .01$). This finding indicates that gender is a significant parameter in Internet parenting style. The table shows that in general, the female students considered their parents' Internet parenting style to be mostly authoritative, followed by permissive, laissez-faire, and authoritarian. Male students considered the Internet parenting style of their parents to be mostly laissez-faire, followed by permissive, authoritative, and authoritarian.

The relationship between the age parameter and Internet parenting style ($\chi^2_{(8)} = 309.95$, $p < .01$) was found to be significant. For the purpose of this analysis, because the number of persons per cell in the authoritarian style was small, the parents with this style were excluded from the analysis. The finding presented in Table 5 reveals that the age parameter is a significant parameter in Internet parenting style. Children aged 9–10 years stated that the Internet parenting style of their parents was mostly authoritative (46.2%), whereas children aged 11–12 years stated that it was mostly permissive (41.6%). Children aged 13 years or above stated that the Internet parenting style of their parents was, to a large

extent, laissez-faire. The table shows that in general, the increase in the age parameter changes the authoritative Internet parenting style of the families into a laissez-faire style.

When the findings presented in Table 6 are considered as a whole, it is observed that the relationship between the grade parameter and the Internet parenting style is significant ($\chi^2_{(18)} = 332.55$, $p < .01$). For the purpose of this analysis, because the number of persons per cell in the authoritarian style is small, the parents with this style were excluded from the analysis. This finding reveals that grade level is a significant parameter of the Internet parenting style. The table shows that in general, the authoritative Internet parenting style of the families of students in seventh grade or higher increasingly changes into a laissez-faire style (see Table 7).

Regarding grade level, 365 (69.5%) of the students in high school stated that the Internet parenting style of their parents was laissez-faire. Two-hundred and two (37.8%) of the students in middle school stated that the Internet parenting style of their parents was permissive, whereas 104 (45.4%) of the elementary school students said that their parents adopted the authoritative Internet parenting style. It is shown that the relationship between the Internet parenting style and the type of school in which the students study is significant ($\chi^2_{(6)} = 249.50$, $p < .01$). The evaluation shows that regardless of school type, an increase in education level results in a decrease in parental warmth and control in terms of the Internet.

When the findings presented in Table 8 are considered as a whole, it is observed that the relationship between mothers' education level and their Internet parenting style was significant ($\chi^2_{(12)} = 25.37$, $p < .05$). Mothers with a laissez-faire Internet parenting style were mostly elementary school graduates, and permissive mothers were generally middle school graduates. Another finding obtained from the table is that the mothers with an undergraduate and graduate education level had a higher ratio of authoritative style in Internet usage than mothers with other education levels. It was discovered that the relationship between fathers' education level and their Internet parenting style was not significant ($\chi^2_{(12)} = 15.05$, $p > .05$). The findings show that primary school-graduate fathers exhibited a laissez-faire parenting style toward Internet usage, whereas fathers with an undergraduate degree exhibited mostly permissive and authoritative Internet parenting styles.

The findings presented in Table 9 show that the relationship between the Internet parenting style of the families and the number of years the child had been using the Internet ($\chi^2_{(6)} = 85.09$, $p < .01$) were significant. This finding reveals that the Internet usage year is an influential parameter in the family's Internet parenting style. When the Table is considered in general, it is revealed that the increase in the usage year is in parallel with the laissez-faire, permissive, and authoritarian Internet parenting styles.

Table 4
Chi-square table of relationship between Internet parenting style and students' gender.

Internet Parenting style	Female		Male		df	χ^2	p
	N	%	N	%			
Authoritative	227	34.4	55	8.7	3	168.93	.001
Permissive	221	33.5	174	27.6			
Laissez-faire	205	31.1	390	61.9			
Authoritarian	6	.9	11	1.7			
Total	659	100	630	100			

Table 5

Chi-square table of the relationship between Internet parenting style and students' ages.

Internet parenting style	Age										χ^2	df	p
	9–10		11–12		13–14		15–16		17 years And older				
	N	%	N	%	N	%	N	%	N	%			
Laissez-faire	43	18.1	62	24.3	122	45.7	253	67.8	115	82.7	309.95	8	.001
Permissive	85	35.7	106	41.6	97	36.3	88	23.6	19	13.7			
Authoritative	110	46.2	87	34.1	48	18.0	32	8.6	5	3.6			
Total	238	100	255	100	267	100	373	100	139	100			

Table 6

Chi-square table of relationship between Internet parenting style and students' grade level.

Internet Parenting style		Grade										χ^2	df	p
		3	4	5	6	7	8	9	10	11	12			
Laissez-faire	N	20	28	28	30	58	66	118	145	47	55	332.55	18	.001
	%	18.5	17.1	24.1	24.8	43.3	54.5	71.1	67.1	74.6	87.3			
Permissive	N	41	56	52	49	51	39	32	58	13	4			
	%	38.0	34.1	44.8	40.5	38.1	32.2	19.3	26.9	20.6	6.3			
Authoritative	N	47	80	36	42	25	16	16	13	3	4			
	%	43.5	48.8	31.0	34.7	18.7	13.2	9.6	6.0	4.8	6.3			
Total	N	108	164	116	121	134	121	166	216	63	63			
	%	100	100	100	100	100	100	100	100	100	100			

Table 7

Chi-square table of the relationship between the Internet parenting styles and students' school levels.

Internet Parenting style	Elementary school		Middle school		High school		χ^2	df	p
	N	%	N	%	N	%			
Laissez-faire	40	17.5	190	35.5	365	69.5	249.50	6	.001
Permissive	83	36.2	202	37.8	110	21.0			
Authoritative	104	45.4	135	25.2	43	8.2			
Authoritarian	2	.9	8	1.5	7	1.3			
Total	229	100	535	100	525	100			

Table 8

Chi-square table of relationship between Internet parenting styles and the education level of students' mothers.

Internet parenting style	Elementary school		Middle school		High school		Bachelor's degree		Post-graduate and higher		χ^2	df	p
	N	%	N	%	N	%	N	%	N	%			
Laissez-faire	202	71.4	151	45.1	108	41.9	88	34.5	46	29.1	25.37	12	.013
Permissive	50	17.7	143	42.7	101	39.1	66	25.9	35	22.2			
Authoritative	30	10.6	38	11.3	40	15.5	99	38.8	75	47.4			
Authoritarian	1	.3	3	.9	9	3.5	2	.8	2	1.3			
Total	283	100	335	100	258	100	255	100	158	100			

Table 9

Chi-square table of relationship between Internet parenting styles and students' Internet-use duration.

Internet parenting style	1–2 years		3–5 years		6 and more years		χ^2	df	p
	N	%	N	%	N	%			
Laissez-faire	40	23.1	195	41.9	360	55.3	85.09	6	.001
Permissive	58	33.5	150	32.3	187	28.7			
Authoritative	73	42.2	114	24.5	95	14.6			
Authoritarian	2	1.2	6	1.3	9	1.4			
Total	173	100	465	100	651	100			

4.3. The effect of Internet parenting style on child's Internet usage

It was found that the relationship between the Internet parenting style of the families and a child's daily Internet usage

time parameter ($\chi^2_{(12)} = 102.26$, $p < .01$) was significant. This finding indicates that the Internet parenting style of the family is an influential parameter in the child's daily Internet usage time. When the table is considered in general, it can be observed that the

Table 10

Chi-square table of the relationship between Internet parenting styles and students' daily Internet usage.

Internet Parenting style	Less than 1 h		1–2 h		2–3 h		3–4 h		More than 4 h		χ^2	df	p
	N	%	N	%	N	%	N	%	N	%			
Laissez-faire	7	21.9	98	35.3	114	43.0	250	53.0	126	52.1	102.26	12	.001
Permissive	5	15.6	83	29.9	72	27.2	161	34.1	74	30.6			
Authoritative	17	53.1	91	32.7	77	29.1	58	12.3	39	16.1			
Authoritarian	3	9.4	6	2.2	2	.8	3	.6	3	1.2			
Total	32	100	278	100	265	100	472	100	242	100			

increase in the daily Internet usage is in parallel with the laissez-faire and permissive Internet parenting style (see Table 10).

4.4. Parent's perspective on Internet and child's Internet-usage process

In the interviews, fifteen parents indicated that the preeminent benefit of the Internet was fast and easy access to information. One parent expressed this benefit as follows: “First of all, you can easily access information and easily conduct research”. Other expressed benefits of the Internet were easier communication through online tools, the easier and faster handling of routine operations such as banking and shopping, and hence a more efficient use of time. Two parents stated that meeting new people and socializing through social websites faster and more easily are some of the advantages of the Internet. One parent said, “On social media, you can see people's thoughts, emotions and sadness immediately; you can see their happiness and their happy moments”. The easier and faster follow-up of daily agendas through social websites and news sources was also listed among the benefits of the Internet. The facilitation of the access to numerous sources, materials, and content for individual needs was included among the benefits expressed. One parent expressed that the Internet supports children with their schoolwork, saying, “The Internet helps our children with their courses” (Table 11).

Twelve parents listed the following as major negative sides of the Internet: attacks by malicious people on the virtual platform against computers and against personal rights and safety due to viruses, Trojans, and spam messages. One parent said, “Our child might be exposed to threats, blackmail, and situations that can lead to safety problems that disclose their privacy, such as cyber bullying”. Ten parents stated that they suffered from information pollution and incorrect information from the Internet. One of them emphasized another negative component by saying, “If you are not following a genuine site, there are lots of made-up sites full of mistakes”. Because individuals lose track of time while using Internet applications,

social websites and online games, and because of the extreme usage of this online medium, physiological problems may arise, such as visual impairments posture impairments, along with psychological problems, such as loneliness and addiction. Moreover, content shared on websites that is inappropriate for the psychosocial development of younger children in particular, heavy engagement in this medium after going online, and inefficiency in time management were listed among the Internet's negative components (Table 12).

Eighteen parents stated that they shared with their children their own personal knowledge and experience about the benefits and disadvantages of the Internet. One of the parents explained their behavior within this process as follows: “We frequently remind our child that the Internet medium might involve some ill-intentioned people, and we try to draw attention to the fact that the person they are speaking to might not be as well-intentioned as we are”. Four parents expressed that they asked domain experts for opinions on this matter. One parent said, “We absolutely get support from their computer teacher”. Three parents mentioned that they led their child to Internet sources such as websites and forum sites, and two parents said that they helped their child access printed sources that explained the benefits and disadvantages of the Internet (Table 13).

Eight parents said that they familiarized their child with social activities such as sportive activities, meetings and trips with friends, and playing outside with friends to limit their Internet-usage time. One such parent said, “To keep her away from using the Internet for too long in her spare time, we picnic with the whole family, or visit friends or relatives”. Of the parents who said that they informed their child about the problems that excess Internet use can cause or warned them about the Internet's negative aspects, four stated that they put limits on Internet usage for a more efficient use of time, and two said that they used time-limiting software (Table 14).

Parents also said that they prevented their children from entering sites that are inappropriate for their psychosocial

Table 11

Parents' views regarding the benefits of Internet use.

Theme	Sub-themes	f
Attaining information		28
	Attaining information easily and fast	15
	Being informed easily and fast about the daily agenda	10
	Searching to do homework	3
Facilitating communication		17
	Communication with friends	12
	Communicate with family members	5
Time management		1
	Saving time	1
Accelerating and facilitating daily chores		7
	Accelerating and facilitating shopping	5
	Accelerating and facilitating banking	2
Individual development		3
	Socialization	2
	Searching about subjects of personal interest	1

Table 12

Parents' views regarding the negative effects of Internet use.

Theme	Sub-themes	f
Psychological effects		6
	Internet addiction	3
	Isolate oneself from friends	2
Individual effects		3
	Loneliness	1
	Wasting time	2
Physiological effects		2
	Spending too much time on computer	1
	Eye problems	1
Content		26
	Poor posture	1
	Virus, Trojan, spam	11
	False information content	7
	Unsuitable content	4
	Unsafe information content	3
	Identity theft	1

Table 13

How the child is informed about the positive and negative aspects of the Internet.

Theme	f
Sharing personal knowledge	18
Expert consultation	4
Guidance to Internet resources	3
Sharing printed resources	2

Table 14

Methods that the parent employs to limit child's Internet-usage time.

Theme	f
Participating in social activities	8
Warning	7
Setting a time limit	4
Informing about the negative aspects of the Internet	4
Using software	2

development. One said, “We tell him that he should not visit sites with inappropriate content, not to join live chats and not to click on buttons that are for communication and from somewhere he doesn't know, and we explain to him what can happen if he does not listen to us”. For the same purpose, nine parents stated that they used the service providers' family filters, and four parents expressed that they warned their child. Two parents stated that they tried to prevent their child from seeing inappropriate content by entering the room where the Internet connection is made and disturbing the child frequently (Table 15).

Half of the parents said that they monitored their child's Internet usage primarily through checking the history via the Internet browser, and they viewed the child's activities and talks on online chat mediums on social media sites by logging in with the child's password. Nine of the parents that participated in the study said that they arranged the room's seating so that they could see the monitor of the device that connects to the Internet, and they remotely monitored their child's online activities. One of these parents said, “I call him from time to time as if something interesting happened, and in the meantime, his mother checks which pages are open on his computer”. Six of the research participants emphasized that they talked with their child about they have done on the computer to gain knowledge about his/her activities online. Two parents stated that they checked their child's Internet activities by either sitting side-by-side with him/her or connecting to the Internet at the same time (Table 16).

Eleven of the parents who provided opinions stated that they did not use any tools because they did not know which tools they could use to monitor their child's Internet-usage behavior. They said they could not do anything but trust their child. One of these parents stated, “I do not follow her Internet behavior because I do not know how to follow it”. Seven parents said that they monitored the Internet-usage quota and the amount of mobile data used. Two parents said that they used log-tracking software that records which user performed what type of operations on which date and

Table 15

Actions that the parent takes to prevent the child from entering sites that are inappropriate for children's psychosocial development.

Theme	f
Informing	14
Using family filter	9
Warning	4
Being at the Internet-access area	2

Table 16

Actions employed to track the child's Internet usage.

Theme	f
Checking the history of online activities	10
Observing from a distance	9
Speech	6
Be around	2

Table 17

Tools employed for monitoring the child's Internet usage.

Theme	f
No tools used	11
Quota/data usage monitoring	7
Log tracking software	2

at which time on their computer, and they checked every night what was done on the computer using this software (Table 17).

The parents stated that because mothers stay at home for longer periods of time, their knowledge and attitude are more dominating than fathers' in regards to determining the rules for the child's Internet usage. The parents say that they primarily benefit from their own experience and knowledge for setting the rules, and one of them explained the reason for this behavior as follows: “Each expert tells us something different, and I don't know in which one to believe, so I decided on the right way on my own to do this since I have been using the Internet for many years”. Six parents said that they obtained information from the mass media such as television and radio to establish Internet-usage rules, and three said that they used Internet sources. Two of the parents interviewed expressed that they met their child's information technology teacher to establish Internet-usage rules, and three other parents stated that they used printed sources for this purpose. One of the two parents who consulted adolescent psychologists to set up Internet-usage rules that are appropriate for child development said, “I went to adolescent psychologists, attended conferences by domain experts on problems during adolescence, and consulted experts” (Table 18).

Thirteen parents said that they considered themselves adequate in terms of Internet usage, and they stated that their children contacted them first when they encountered a problem. Two parents did not consider themselves adequate in terms of using Internet and similar technologies, and they stated that their children consulted friends who had more knowledge. Seven parents said that their children generally tried to resolve the relevant problems on their own (Table 19).

Nine parents expressed that they conveyed their knowledge to their child on the solution to technical problems that their child experienced during Internet usage, and they expected them to solve the problem with this knowledge. Five other parents said that they tried to solve the problem with their child. Two parents who considered themselves inadequate in terms of the Internet said that they called customer services to solve the problem and performed the instructions with their child. Three parents with an adolescent child expressed that they directed their child to websites or forum

Table 18

Factors effective in determining rules for child's Internet usage.

Theme	f
Parent's Internet knowledge	9
Information obtained from the mass media	6
Advice from an expert	4
Information obtained from printed sources	3
Information obtained from Internet sources	3

Table 19

Solutions that the child uses when faced with a technical problem while using the Internet.

Theme	f
Parental consultation	13
Solving by individual effort	7
Friend consultation	2

sites to solve technical problems. One such parent said, “I inform him by stating that when encountering a problem, the solution may again be on the Internet, and there are search engines and solution websites with visual aid”. Two parents said that they helped their child solve the problem by providing hints, and one stated that they shared with their child printed sources that offer solutions (Table 20).

Eleven parents stated that they could understand whether their child exhibited unethical behavior online through the websites the child visited, logging on to the social media sites with the child's password, and reading his/her shares and messages. Seven parents who stated that they often chatted with their child expressed that they could in this way determine their child's unethical behavior. Three parents stated that they could identify possible unethical actions by changes in their child's behavior. One parent with a child in high school said that possible unethical behavior of the child could be understood by the words he/she uses in online chats (Table 21).

4.5. Comparison between parent's Internet style and child's opinion on parent's style

In the research, the children of the parents interviewed were asked to answer The Internet Parental Style Scale. It was found that the children's opinion on their parents' Internet style, which was obtained through the questionnaire, did not exactly match with the Internet parenting styles that were found through interviews with the parents. Whereas eleven parents who participated in the study stated that they were authoritative parents, only five of their children agreed with them. The children of parents who stated that they adopted the permissive style stated that their parents' Internet parenting style was authoritative or laissez-faire. Four of the parents who participated in the interview said that they were authoritarian on Internet usage, whereas only one of their children was in agreement with his parent (see Fig. 3).

It was found that the parents who participated in the study considered themselves mostly authoritative on their children's Internet usage. Permissive and authoritarian styles were the second and third most common, respectively. A parent with an authoritative parenting style expressed his style as follows: “I don't think that as the head of the family or as the parents we have the right to use it more often or other members have the right to use it less often; I think everyone can use it for whatever and however long it is necessary”. A parent with a permissive parenting style expressed his style

Table 20

Parental behavior towards solving the technical problem encountered by the child while using Internet.

Theme	f
Sharing personal knowledge	9
Solving together	5
Phoning customer service	2
Directing towards Internet sources	3
Providing hints	2
Sharing printed resources	1

Table 21

Methods employed by the parent to identify the possible unethical behavior of the child on the Internet.

Theme	f
By examining the history of online activities	11
By chatting	7
By observing the change in behaviors	3
By the language used by the child	1

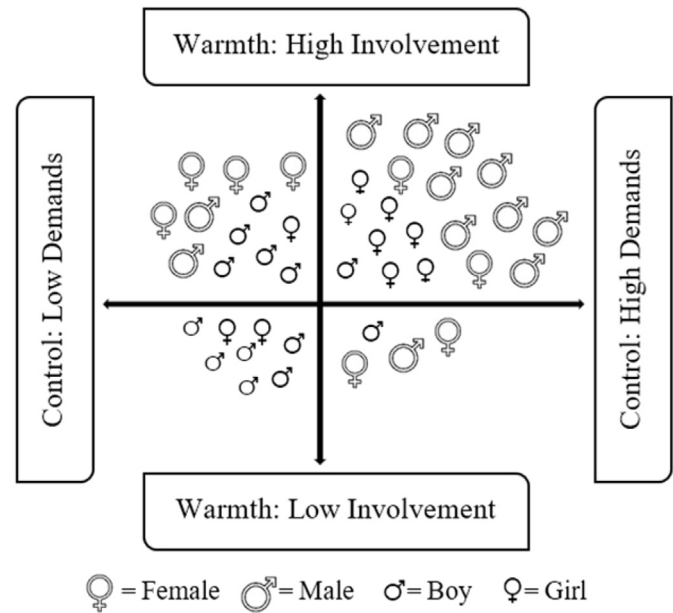


Fig. 3. Comparison between Internet parenting style and child's opinion on parent's Internet parenting style.

as follows: “If my child exceeds the time limit I set for Internet usage and if there are guests at home or I have a job to do, something that I have to complete, I let him use the Internet for as long as he wants”. A father with an authoritarian style expressed his style as follows: “I sometimes get angry at him and sometimes shout at him. Even though I don't approve of this, I have also slapped him”. Another surprising finding revealed by the research is that none of the parents considered themselves to adopt a laissez-faire style (see Fig. 3).

5. Discussion

The parents interviewed listed the positive aspects of Internet usage as follows: Fast and easy access to information, the facilitation of communication and daily work, and the acceleration and efficient use of time. However, in addition to these facilities and benefits, when used unconsciously and without supervision, the Internet may cause users, particularly children and adolescents, to experience various troubles. The parents listed these negative aspects of Internet usage as possible safety problems, information pollution, management problems when misused, troubles with socialization, loneliness, addiction, exposure to content inappropriate for the age, and psychological and physiological problems. The relevant literature review also supports the opinions that parents provided (Jackson et al., 2007; Kabakci, Odabasi, & Coklar, 2008; Livingstone & Bober, 2006; Livingstone & Haddon, 2008; Pakhare, 2013).

The parents expressed that they primarily used their own knowledge and experience, and if they did not have sufficient

knowledge, they consulted a domain expert, directed children to web sources, and shared printed resources with their children to read them. The children stated that they consulted their families and friends about online technical problems they faced or that they called customer service, accompanied by their parents. Similarly, the related literature review noted that parents should support their child's Internet usage, enable them to discover new things, and seek to provide the required information and guidance (Livingstone, Bober, & Helsper, 2005; Livingstone & Bovill, 2001).

In the study, the parents stated that they took several actions to track the online actions of their children, such as running a history check, being side-by-side with the child, remotely watching them or talking about what the child has done on the Internet. These parental actions are in parallel with the actions put forward in the literature reviews (Lou et al., 2010; Valcke et al., 2010).

The parents expressed that they employed tools such as quota/data limitation or log-tracking to track their child's Internet usage. More than half of the parents stated that they did not know which tool to use for this purpose because they did not have the technical knowledge required for tracking Internet usage, and therefore, they could do nothing but trust their child. This finding, which indicates that most parents are not conscious Internet users, is similar to the research result that showed that Turkish parents use the Internet less and have less knowledge about the Internet than their European counterparts (Haddon & Livingstone, 2012).

In the research, parents said that they employed family filters or told their child about the damage of inappropriate content to prevent them from viewing content that was inappropriate for their psycho-social development. In addition, they mentioned that they checked the web history and focused on the changes in their child's communication process with the aim to detect possible inappropriate behavior of their child in the context of Internet ethics. The literature review on child online protection emphasizes the necessity to take measures similar to what the parents outlined (Odaş, Kabakçı, & Çoklar, 2007, p. 98; Livingstone & Bober, 2006).

The research shows that the families' Internet parenting styles are primarily *laissez-faire*, followed by permissive, authoritative, and authoritarian. This finding is similar to the related literature review (Ayas & Horzum, 2013; Rosen et al., 2008; Valcke et al., 2010), and it partially matches with the findings from another study by Rosen (2007). In their studies, Aunola et al. (2000) state that permissive parenting has the highest ratio. Studies by Eastin et al. (2006), Lou et al. (2010) and Horzum and Bektas (2014) reveal that the majority of parents show an authoritative Internet parenting style, and the least commonly observed style is the *laissez-faire* style. The contradictory results of the literature review are thought to be caused by the difference in the ages of the participating children and in the cultural dynamics of the parents. Indeed, Kagitcibasi (1996, p. 97) states that parent and child relationships in nuclear families in Turkish societies, where traditional values are heavy, occur in a circle of extreme love and control, in contrast to the balanced love and tolerance in Western societies. In this context, with regard to this finding in the research, this extreme love in the parent–child relationship might cause the parent to be more tolerant of the child and hence to be considered permissive or even *laissez-faire* by the child.

The semi-structured interviews with the parents and the data obtained via the measurement scale from their children yielded even more interesting results. Most parents who participated in the interview defined their Internet parenting style as authoritative, followed by permissive and authoritarian. None of the parents interviewed expressed their Internet parenting style as *laissez-faire*. However, the children of the same parents considered their families' Internet parenting styles as mostly *laissez-faire* and

authoritative, followed by permissive and authoritarian. These findings might be caused by parents' failure to transmit certain actions and behaviors that are thought to be possibly viewed inappropriate. The questions that were asked to reveal the Internet parenting style also revealed parents' personality and the relationship and interaction between the family members.

Another finding obtained in the study is the significant relationship between gender and Internet parenting style. This finding is similar to the results found in the literature review (Álvarez, Torres, Rodríguez, Padilla, & Rodrigo, 2013; Ayas & Horzum, 2013; Berson & Berson, 2003; Horzum & Bektas, 2014; Valcke et al., 2007). In the research, female students considered the Internet parenting style of their families as primarily authoritative, followed by permissive, *laissez-faire* and authoritarian, whereas male students listed the Internet parenting style of their parents to be predominantly *laissez-faire*, followed by permissive, authoritative and authoritarian. Aunola et al. (2000) noted that parents treat their daughters in an authoritarian manner and set more rules for them, and they are more permissive toward their sons. Eastin et al. (2006) note that the Internet activities of male children are controlled more than those of female children. Today's Turkey, which is socially and culturally a combination of the Ottoman inheritance and Western civilization (Kongar, 2004, p. 15), is characterized by gender mainstreaming such that properties such as being emotional, passive, weak and dependent are associated with females (Suğur, 2006, p. 3). In this context, due to the gender role, it is thought that this finding was influenced by setting a larger number of rules for women and heavier supervision and direction of women to protect them. However, it is thought that this finding is also influenced by the lower restrictions on men, who are characterized by properties such as being strong, brave and independent (Suğur, 2006, p. 3). Children's age and parents' personal characteristics might have an effect on the contradiction between literature reviews. To better understand where these differences originate, there is a need for qualitative and quantitative studies that cover the parameters that are thought to influence Internet parenting style.

Another finding of the research is that the Internet parenting style, which the students had previously evaluated as authoritative, started to be evaluated as permissive and then *laissez-faire* with the increase in their age, grade, school, and years of Internet usage. The results of the study by Rosen et al. (2008), which examines the relationship between Internet parenting style and children's age, are similar to the findings of this study. Similarly, studies note that regardless of the child's personality, parents show more warmth and care toward younger children than older children and control their actions and activities more (Álvarez et al., 2013; European Commission, 2008; Livingstone et al., 2014; Lwin et al., 2008; Mitchell et al., 2005; Padilla-Walker, Coyne, Fraser, Dyer, & Yorgason, 2012; Valcke et al., 2010; Walrave et al., 2008). The findings obtained from the semi-structured interview forms, which were created to determine Internet parenting style, and the findings obtained from the answers of the children of the same families on the relevant measurement tool were compared. The findings showed that the opinions of children aged 12 years or older conflicted with the opinions of their parents regarding the Internet parenting styles adopted in their family. Regarding younger children, the opinions of both sides were aligned. The reason for this finding could be that children's communication with the family decreases as age increases. Parents think that their children know more about Internet than they do, and hence, they believe that their children can protect themselves against online damage (Wang et al., 2005), causing the control and interest of parents on the child's online activities to decrease (Álvarez et al., 2013). Consequently, the children consider their parents' Internet parenting

style laissez-faire.

Another finding from the study is that the relationship between a mother's education level and her Internet parenting style is significant, whereas the relationship between a father's educational level and his Internet parenting style is not significant. Similar results are found in the related literature review (Álvarez et al., 2013; Fleming et al., 2006; Lee & Chae, 2007; Valcke et al., 2010; Wang et al., 2005). The results of the research by Mızrakçı (1994) and Özyürek (2004) on childrearing show that the increase in a parent's education level triggers a more authoritative attitude toward children and decreases overprotective and strict disciplining attitudes; their findings support the ones in this study. Similarly, Wong, Ho, and Chen (2015) note that the increase in a parent's Internet knowledge has a significant effect on the parent's learning authoritative Internet style. Regarding this finding, it is thought that a mother with high-level communication and a rule-maker/restrictive character will become a more conscious Internet user with an increase in education level (TurkStat, 2015; Valcke et al., 2010; Wang et al., 2005). This will influence the children to consider their mother as a parent with an authoritative style. To understand where these differences originate, there is a need for qualitative and quantitative studies that cover the parameters that are thought to affect Internet parenting style.

The literature reviews stated that mothers supervise more than fathers the use of the Internet and similar technologies and that fathers are more important in technological support (Hart, Bober, & Pine, 2008). During Internet usage, mothers communicate with their children better than fathers (Rosen et al., 2008). Livingstone (2007) expresses that because mothers spend more time at home than fathers and children generally connect to Internet at home, they consider mothers the rule-maker and the restrictive parent. Indeed, students who participated in this study stated that they were warned more by their mothers when they used the Internet for too long. The semi-structured interview forms revealed that because mothers stay at home longer than fathers, their knowledge and attitude are more predominant than fathers' in terms of setting up rules. The fact that mother is responsible for the care, attention and control of children in the Turkish family structure, due to the traditional judgment regarding gender roles in the Turkish community, is considered to influence this finding.

Another finding from the study is that children who considered the Internet parenting style of their families to be laissez-faire and permissive spent more time on the Internet daily than children of the families with other Internet parenting styles. The results of the study by Hsu (2005), which state that children of the parents with a laissez-faire Internet parenting style have a high ratio of Internet addiction, support this finding from the study. In addition, another finding obtained by the semi-structured interview form is that the daily time spent on the Internet by parents who show an authoritative parenting style is almost the same as that of their children and that the children with the shortest Internet-usage duration are from these families. This finding is similar to those of Valcke et al. (2010), who find a significant positive relationship between the daily Internet usage time of parents and children and the parent's Internet style. The finding partially matches the findings from another study by Ihmeideh and Shawareb (2014), which states that the relationship between an authoritative Internet parenting style and Internet usage is significant, and the Internet is most used by the children of parents with this style. This finding can be interpreted as authoritative parents preventing children from spending too much time online through setting up rules, checking the Internet-usage process and displaying warmth and guidance.

5.1. Conclusions

This research observed that families fall into primarily laissez-faire parenting styles followed by permissive, authoritative and authoritarian Internet parenting styles and that there is a significant relationship between gender and Internet parenting styles. Moreover, it was revealed that the increase in students' age and hence in their grade level causes the Internet style of families once considered authoritative to be considered laissez-faire. As grade level increases, Internet parenting styles change into the laissez-faire style. It was found that with an increase in mothers' education level, parental control and interaction with regards to children's Internet-usage process increases, and the relationship between children's Internet-usage time and Internet parenting style is also significant.

6. Limitations and directions for future research

The research performed has several constraints. The research was performed primarily by adopting the perspective of children. The possibility that parents did not reflect the actual domestic dynamics in the interviews is another constraint of the research. All analyses were obtained from a single group of data. Therefore, the findings obtained in this study should be verified by correlatively considering the findings of the studies performed with the participation of a greater number of children and parents living in different regions of the country. Furthermore, there is a need for research that compares different countries to identify cultural differences.

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To cite this article: Martin Pinquart (2017) Associations of Parenting Dimensions and Styles with Internalizing Symptoms in Children and Adolescents: A Meta-Analysis, Marriage & Family Review, 53:7, 613-640, DOI: [10.1080/01494929.2016.1247761](https://doi.org/10.1080/01494929.2016.1247761)

To link to this article: <https://doi.org/10.1080/01494929.2016.1247761>



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Accepted author version posted online: 14 Oct 2016.
Published online: 15 Nov 2016.



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Associations of Parenting Dimensions and Styles with Internalizing Symptoms in Children and Adolescents: A Meta-Analysis

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ABSTRACT

The present meta-analysis integrates research from 1,015 studies on associations of parenting dimensions and styles with internalizing symptoms in children and adolescents. Parental warmth, behavioral control, autonomy granting, and authoritative parenting showed very small to small negative concurrent and longitudinal associations with internalizing symptoms. In contrast, harsh control, psychological control, authoritarian, and, in part, neglectful parenting were associated with higher levels of internalizing symptoms. Parental warmth, behavioral control, harsh control, psychological control, autonomy granting, and authoritative parenting predicted change in internalizing symptoms over time, with associations of internalizing symptoms with parental warmth, psychological control, and authoritative parenting being bidirectional. Moderating effects of study characteristics are identified. Implications for future research and practice are discussed.

KEYWORDS

anxiety; depression;
internalizing symptoms;
meta-analysis; parenting

Introduction

Hundreds of studies have analyzed which aspects of parental behavior promote the mental health of children and adolescents and their positive development in general (e.g., Larzelere, Morris, & Harrist, 2013; Maccoby & Martin, 1983). Available studies focused on different aspects of parenting and different outcome variables, and their results are, in part, contradictory. The main goals of the present meta-analysis were to integrate the results of the available studies on associations of parenting dimensions and styles with internalizing symptoms of children and adolescents, to analyze which dimensions and styles show the strongest associations with internalizing symptoms, and to test whether the associations between parenting and internalizing symptoms vary by study characteristics, such as whether the studies analyzed bivariate associations or tested the statistical effect of parenting on *change* in internalizing symptoms. Knowledge on these topics is relevant for planning measures aimed at preventing and reducing internalizing symptoms.

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 Supplementary materials for this article can be accessed on the [publisher's website](#).

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Two perspectives have been adopted in the parenting literature: a **dimensional approach** focusing on individual dimensions of parental behaviors, such as responsiveness and demandingness, and a **categorical approach** that categorizes parents according to a combination of parenting dimensions into parenting styles (Maccoby & Martin, 1983). With regard to central parenting **dimensions**, parental *responsiveness* can be defined as being accepting, nurturing, supportive, sensitive, and warm (e.g., Maccoby & Martin, 1983). Different forms of parental control (demandingness) have been distinguished in the literature that may have differing effects on child outcomes. *Behavioral control* has been conceptualized as a set of active parental strategies involving the communication of clear and consistent expectations for appropriate behavior and efforts to monitor the child's behavior related to these expectations (e.g., Akcinar & Baydar, 2014). Although setting rules and parental monitoring have often been linked to positive outcomes for the child, *harsh control*, such as physical or verbal punishment and intrusiveness, has often been related to negative developmental outcomes (e.g., Janssens et al., 2015). Behavioral and harsh control should also be distinguished from *psychological control*. This kind of control is defined as attempts by parents to manipulate children's psychological and emotional experiences, such as the use of guilt induction, shaming, and conditional loving to pressure their children (Barber, 1996). Furthermore, research has been conducted on parental overcontrol versus autonomy granting. *Autonomy granting* is defined as parental encouragement of the child's individual expression and decision making, such as allowing children to make choices about activities and behavior and encouraging the development of independence, whereas parental overcontrol refers to highly controlling behavior that discourages independent behavior of the child (Silk, Morris, Kayana, & Steinberg, 2003).

In contrast to dimensional approaches to the study of parenting, **parenting styles** are defined by combinations of parenting dimensions. Based on the work of Baumrind (1966), Maccoby and Martin (1983) defined four **parenting styles** according to the two-dimensional framework of responsiveness/warmth and demandingness/control: **an authoritative style** (high warmth and high behavioral control), **an authoritarian style** (low warmth and high control), **a permissive style** (high warmth and low control), and **a neglectful style** (low warmth and low control). More recently, Baumrind highlighted that authoritative and authoritarian parenting differ in the kind of control used and distinguished *confrontive control* (reasoned, negotiable, and outcome-oriented control, directed at specific behaviors of the child that the parent wants the child to alter) of authoritative parents from *coercive control* (arbitrary, intrusive, and domineering parental behavior) of authoritarian parents. In contrast of coercive control that relies on threats and commands unqualified by the use of reasoning, confrontive power is open to reasoning and negotiation (e.g., Baumrind, 2013). Although coercive

control conceptually overlaps with harsh control, confrontive control is not well measured with the available parenting scales.

Associations of parenting dimensions and styles with internalizing symptoms

It has been suggested that parenting styles and dimensions play a major role in the development and maintenance of child psychological problems (Maccoby, 2002; McLeod, Weisz, & Wood, 2007a). Multivariate approaches to child psychopathology often distinguish between internalizing and externalizing problems and disorders (Achenbach, 1991). Internalizing problems refer to anxiety, depressive symptoms, somatic complaints, and social withdrawal, whereas externalizing problems include delinquent and aggressive behaviors. As associations of parenting with delinquency (including violent behaviors) have already been systematically analyzed in a large meta-analysis (Hoeve et al., 2009), the present meta-analysis focuses on associations of parenting with internalizing symptoms.

With regard to parental responsiveness, parents showing warmth toward their child indicate that the offspring is loved and appreciated, which could, again, promote positive feelings and reduce negative feelings of the child (e.g., Alegre, Benson, & Perez-Escoda, 2014). In addition, parental support could help the child to overcome problems, which could, again, reduce or prevent negative feelings (Yap, Fowler, Reavley, & Jorm, 2015). Parental monitoring may relate indirectly to lower levels of internalizing symptoms as parents who know the problems of their children could offer support and help with reducing co-occurring externalizing symptoms.

In contrast, the frequent use of harsh discipline is expected to evoke heightened negative emotional arousal and impair emotion regulation (Repetti, Taylor, & Seeman, 2002). Similarly, psychologically controlling techniques like guilt induction and shaming are expected to increase negative feelings of the child if he or she does not behave according to parental expectations (e.g., Barber & Harmon, 2002). In addition, parental overcontrol is expected to reduce perceived mastery and internal locus of control that may, again, lead to perceived helplessness, and associated internalizing symptoms (Garber & Flynn, 2001).

Given the suggested negative associations of parental responsiveness and demandingness (behavioral control) with internalizing symptoms, it could be expected that authoritative parenting (parental warmth plus behavioral control) would be associated with the lowest levels of internalizing symptoms, whereas neglectful parenting (low warmth plus low behavioral control) would be associated with the highest levels of these symptoms. As authoritarian parents typically use harsh criticism and physical punishment and show low warmth toward their offspring, authoritarian parenting would also be

expected to be associated with elevated levels of internalizing symptoms. Children of permissive parents (high warmth plus low control) could be expected to show average levels of internalizing symptoms.

Six meta-analyses have addressed associations of parenting with anxiety and depression in children and adolescents (McLeod et al., 2007a; 2007b; Möller, Nikolić, Majdandžić, & Bögels, 2016; van der Bruggen, Stams, & Bögels, 2008; Yap & Jorm, 2015; Yap, Pilkington, Ryan, & Jorm, 2014). Based on 17 studies on associations of parental control (including harsh control) with anxiety symptoms in children, van der Bruggen et al. (2008) found a weighted mean association of $r = .28$. Unfortunately, the authors did not provide separate results for the different forms of parental control. In another meta-analysis, McLeod et al. (2007a) observed statistically significant associations of parental warmth ($r = -.06$, based on $k = 16$ effect sizes), control ($r = .25$, $k = 26$), overinvolvement ($r = .23$, $k = 11$), and autonomy granting ($r = -.42$, $k = 7$) with anxiety of children and adolescents. Möller et al. (2016) found no significant association between maternal autonomy granting ($r = .08$, $k = 5$) and overcontrol ($r = .08$, $k = 15$) with child anxiety. Similarly, paternal overcontrol was not related to child anxiety ($r = -.07$, $k = 5$). In a meta-analysis on depressive symptoms of young people, McLeod et al. (2007b) found small associations with parental warmth ($r = -.28$, $k = 23$), control ($r = .23$, $k = 16$), and overinvolvement ($r = .24$, $k = 14$). In a meta-analysis on adolescents (12–18 years), Yap et al. (2014) reported that parental warmth showed negative associations with anxiety ($r = -.15$, $k = 15$) and depression ($r = -.29$, $k = 77$) in cross-sectional studies. Although initial levels of warmth were also associated with fewer depressive symptoms at follow-up ($r = -.20$, $k = 18$), no longitudinal associations could be analyzed with regard to child anxiety. Regarding aspects of behavioral control, consistent discipline ($r = -.25$, $k = 4$) and monitoring ($r = -.27$, $k = 9$) were concurrently associated with fewer depressive symptoms, but not enough data were available to analyze associations of behavioral control with anxiety. Parental autonomy granting was associated with fewer depressive symptoms both in concurrent and prospective analyses ($r = -.22$, $k = 8$ and $r = -.40$, $k = 2$; no effect sizes were reported for anxiety). This meta-analysis only provided results for two of four parenting styles and one outcome variable, with permissive parenting being associated with more depressive symptoms both concurrently ($r = .09$, $k = 7$) and prospectively ($r = .10$, $k = 3$), whereas associations between authoritarian parenting and depression did not reach statistical significance ($r = .09$, $k = 5$ and $r = .17$, $k = 2$). Finally in a meta-analysis on children aged 5 to 11.9 years, Yap and Jorm (2015) found negative association of parental warmth with depressive ($r = -.17$, $k = 6$) and internalizing symptoms (longitudinal studies: $r = -.17$, $k = 2$) and of autonomy granting with anxiety ($r = -.29$, $k = 3$), whereas authoritarian ($r = .21$, $k = 2$) and permissive parenting

($r = .11$, $k = 2$) as well as parental monitoring (cross-sectional: $r = .08$, $k = 2$; longitudinal $r = -.08$, $k = 2$) were not significantly related to sum measures of internalizing symptoms. Unfortunately, no data were provided for authoritative and neglectful parenting.

These available meta-analyses have several limitations. First, small numbers of studies were included in most analyses, thus limiting the test power. Second, most meta-analyses reported only global associations of parental control with child outcomes, although it could be expected that different forms of control have different associations with child outcomes (Janssens et al., 2015). Third, only Yap and associates reported separate results for concurrent and longitudinal associations (Yap & Jorm, 2015; Yap et al., 2014), but the longitudinal studies did not control for levels of internalizing symptoms at pretest. Correlative data do not allow for testing of whether parenting may have an effect on child symptoms or vice versa, and ignoring child effects will inflate estimates of the parents' contribution to children's socialization. For example, Bell's model of bidirectionality in parent-child relations proposes that family members increase control to maintain each other's behavior within a tolerable range (Bell, 1977). Albrecht, Galambos, and Jansson (2007) observed that higher levels of internalizing symptoms at first measurement predicted increases in perceived parental psychological control over time. Fourth, no meta-analytic results have been reported thus far for two of four parenting styles that could be expected to show the strongest association with child outcomes (authoritative and neglectful parenting). Finally, McLeod et al. (2007a, 2007b) computed fixed effects meta-analyses despite considerable heterogeneity of the observed effect sizes, which leads to elevated Type I error rates (Lipsey & Wilson, 2001). Thus, the present meta-analysis analyzed associations of parenting styles and dimensions with internalizing symptoms across a larger number of studies, and differentiated results for several aspects of parental control as well as research designs (cross-sectional, longitudinal, effects of parenting on change in internalizing symptoms vs. effects of internalizing symptoms on change in parenting). In addition, we were interested in study characteristics that may moderate the size of association between parenting and internalizing symptoms of the child. The following moderator variables were considered.

Impact of moderator variables

Sample

The meta-analyses tested whether associations of parenting with internalizing symptoms would be weaker in nonclinical than in clinical samples due low levels of internalizing symptoms in nonclinical studies. McLeod et al. (2007a) found some support for this assumption.

Child age

We were interested in whether parenting would have stronger associations with internalizing symptoms in younger children because there would be fewer competing socialization influences, such as teachers and peers. McLeod et al. (2007b) did not find a moderating effect of child age, and van der Bruggen et al. (2008) even observed that associations between parental control and child anxiety were larger in early adolescence than in childhood.

Child gender

Starting from the late preschool period, internalizing symptoms tend to be more prevalent in girls than in boys (e.g., Silverman & Carter, 2006). We tested whether restricted variance of these symptoms would lead to lower associations with parenting in male as compared with female participants. Möller et al. (2016) and van der Bruggen et al. (2008) found some evidence for stronger associations of parenting with internalizing symptoms if the sample included more female participants. However, no moderating effect of child gender was observed in the meta-analysis on depression (McLeod et al., 2007b).

Child ethnicity

The meaning and effects of parenting may vary according to whether individual parenting behaviors or styles are culturally accepted. For example, Varela, Sanchez-Sosa, Biggs, and Luis (2009) observed that parental hostile control was associated with higher levels of anxiety in European-American adolescents, whereas no such effect was found in Latin-American adolescents. The present meta-analysis tested whether the size of the association of parenting and internalizing symptoms would vary according to the percentage of members of ethnic minorities.

Parental gender

We were interested in whether stronger effect sizes would be found when children evaluated the behaviors of both parents in general than when referring only to mothers or fathers because effects of problematic parenting of one parent might be compensated for by the behavior of the other parent. Indeed, van der Bruggen et al. (2008) found weaker associations in studies that focused only on maternal parenting than in studies that focused mainly on both parents. Although mothers are often the primary caregiver and might therefore be more influential, most associations of parenting with internalizing symptoms did not vary by parental gender (McLeod et al., 2007b; Möller et al., 2016).

Dependent variable

Comparisons of the results of the meta-analyses by McLeod et al. (2007a, 2007b) indicate that parenting behaviors show stronger associations with

depressive symptoms than with anxiety symptoms. We tested whether this would also be the case in the present meta-analysis.

Rater

As mothers' and fathers' reports on parenting may be affected by a tendency to give socially desirable answers and to avoid reporting problematic behaviors to a third party (Morsbach & Prinz, 2006), other sources of information could be more valid and lead to stronger associations with child outcomes. Thus, we tested whether associations between parenting and child outcomes would be weaker if the information about parenting came from the fathers and/or mothers rather than other reporters. In addition, we tested whether stronger associations would be found if information on parenting and internalizing problems came from the same source due to shared methods variance. McLeod et al. (2007b) found support for this suggestion in their meta-analysis on depression.

Quality of the measures

Studies of high quality should use measures that are valid and reliable. They may produce stronger effect sizes than studies with measures of lower quality.

Publication status

As nonsignificant results may be less likely to be published (Lipsey & Wilson, 2001), we tested whether the effect sizes would be smaller in unpublished than in published studies.

Research questions

The first research question examined whether parental warmth, behavioral control, autonomy granting, and authoritative parenting would be associated with lower levels of internalizing symptoms and whether the reverse would be true for harsh control, psychological control, neglectful, and authoritarian parenting. The second research question examined whether stronger associations would be found in cross-sectional studies than in longitudinal studies relating parenting at first assessment to internalizing symptoms at follow-up. Effect sizes are often smaller in longitudinal than in cross-sectional studies as changes in the predictor variable over time lead to a reduction of predictive power of the initial level of this variable and as concurrent correlations are often based on bidirectional effects of the two assessed variables (Adachi & Willoughby, 2015). Yap et al. (2014) observed that the association between parental warmth and depression was stronger in cross-sectional than in longitudinal studies. Given the fact that associations between parenting and internalizing symptoms may be based on parent and child effects (e.g., Albrecht et al., 2007), the third research question examined whether parenting

dimensions and styles would predict change in internalizing symptoms of children and adolescents and whether initial levels of internalizing symptoms would predict changes in the parenting variables. The final research question examined whether the size of associations between parenting and internalizing symptoms varies by sampling, child age, gender of the child and parent, ethnicity, aspect of internalizing symptoms assessed, reporter, quality of the measure, and publication status.

Methods

Sample

Studies were identified through electronic databases (PSYCINFO, MEDLINE, Google Scholar, PSYINDEX [an electronic database of psychological literature from German-speaking countries] for search terms [parenting or child rearing] and [internalizing or anxiety or depress*]) and cross-referencing. Criteria for inclusion of studies in the present meta-analysis were as follows:

1. The studies assessed parental warmth, behavioral control, harsh control, psychological control, autonomy granting (vs. overprotection), and/or parenting styles defined by Maccoby and Martin (1983).
2. They assessed internalizing symptoms of the children (e.g., anxiety, depression, sum measures of internalizing symptoms).
3. Statistical associations between parenting and internalizing symptoms were reported or could be computed.
4. Mean age of the sample was <20 years.
5. The studies were completed before September 2016.

To include studies from different regions of the world, we did not limit the included studies to those written in English. Studies that have not been published in scientific journals or books (e.g., dissertations) were also included. We identified 4,637 studies. After screening and assessing for eligibility, we were able to include 1,015 studies in the meta-analysis. A flow chart of the search for studies is provided in Supplementary Appendix A1, and the studies included are listed in Supplementary Appendices A2 and A3.

We entered the number of children or adolescents, mean age, percentage of girls, percentage of members of ethnic minorities, publication status (1 = published in journals or books, 2 = dissertations/Master theses/Bachelor theses/presentations at conferences), sample (1 = clinical [part/all children scored above the cutoff for internalizing symptoms or were diagnosed with anxiety disorders and/or depression], 0 = nonclinical), rater of parenting (1 = child, 2 = parent, 3 = observer, 4 = multi-informant), rater of internalizing symptoms (1 = child, 2 = parent, 3 = teacher, 4 = peers, 5 = observer/clinician, 6 = multi-informant), kind of internalizing symptoms assessed (1 = anxiety, 2 = depression, 3 = sum measures), quality of the measures of parenting and

internalizing symptoms (2 = studies provided support for validity and reliability, 1 = no support provided for validity and/or reliability), and the size of association between parenting and child outcome. If associations were provided for several subgroups within the same publication (e.g., for female and male participants), we entered them separately in our analysis instead of entering the global association. If data from more than one rater or outcome were reported, we entered the effect sizes separately. The weights of these effect sizes were adjusted to avoid a disproportional impact of this study on the overall effect size. All studies were coded by the author and approximately 20% also by a graduate student. A mean inter-rater reliability of 95% (range, 90%–100%) was established. Differences were resolved by discussion.

Measures

Parental responsiveness (warmth) was most often assessed with the Children's Report of Parent Behavior Inventory (CRPBI; Schaefer, 1965; 104 studies), behavioral observations (72 studies), the Parental Bonding Instrument (Parker, Tupling, & Brown, 1979; 69 studies), the Egna Minnen Beträffande Uppfostran (Perris, Jacobsson, Lindstrom, von Knorring, & Perris, 1980; 38 studies), and related measures (282 studies). Behavior control was most often assessed with the CRPBI (79 studies), the Authoritative Parenting Measure (Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; 21 studies), the Alabama Parenting Questionnaire (Frick, 1991; 21 studies), observations (14 studies), and related measures (206 studies). Harsh control was most often assessed with the CRPBI (25 studies), the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993; 16 studies), observations (17 studies), the Alabama Parenting Questionnaire (16 studies), and related measures (163 studies). Psychological control was most often measured with the CRPBI (64 studies), Barber's Psychological Control Scale (Barber, 1996; 40 studies), and related scales (61 studies). Parental autonomy granting versus overcontrol was most often assessed with scales from the Parental Bonding Instrument (71 studies), the Egna Minnen Beträffande Uppfostran (36 studies), observations (15 studies), and other measures (103 studies). Parenting styles were most often assessed with the Parental Authority Questionnaire (Buri, 1991; 45 studies), the Parenting Styles and Dimensions Questionnaire (Robinson, Mandleco, Frost Olsen, & Hart, 1995; 34 studies), the Alabama Parenting Questionnaire (17 studies), and related instruments (89 studies). Finally, internalizing symptoms were most often measured with the Child Behavior Checklist (Achenbach, 1991; 220 studies), the Children's Depression Inventory (Kovacs, 1982; 121 studies), the Youth Self-Report (Achenbach, 1991; 102 studies), the Center for Epidemiological Studies Depression Scale (Radloff, 1977; 85 studies), clinical interviews (63 studies), the Strengths and Difficulties Questionnaire (Goodman, 1997; 38 studies), and related instruments (427 studies).

Statistical integration of the findings

Calculations for the meta-analysis were performed in five steps, using standardized procedures outlined by Lipsey and Wilson (2001). Random-effects models and the method of moments were computed that are most adequate if not all sources of heterogeneity of the results of individual studies might be identified (Lipsey & Wilson, 2001).

1. The correlations were transformed using Fisher's r -to- z transformation. Outliers that were more than two SD from the mean of the effect sizes were recoded to the value at two SD , based on Lipsey and Wilson (2001).
2. Weighted mean z -scores and 95% confidence intervals (CIs) were computed. The significance of the mean was tested by dividing the weighted mean effect size by the standard error of the mean. To compare the mean effect sizes with the effect sizes reported in the single studies, the mean effect sizes were later converted to the original metric of product-moment correlations.
3. Homogeneity of effect sizes was tested by use of the Q statistic.
4. To test the influence of moderator variables, we used an analogue of an analysis of variance and weighted ordinary least-squares regression analyses. In univariate analyses, a significant Q_b score indicates heterogeneity of the effect sizes between the compared conditions. Which conditions differ is tested by comparing the 95% CIs. Differences between two conditions are significant if CI of two effect sizes do not overlap (Lipsey & Wilson, 2001).
5. The trim-and-fill algorithm by Duval and Tweedie (2000) was used to check whether the results may be influenced by a publication bias.

Results

The 1,015 included studies provided data on 716,097 children and adolescents with a mean age of 11.61 years ($SD = 4.66$; range, .17–19.97; median age, 13.0; mode, 15.0). About 51.5% of the participants were female ($SD = 24.6$) and 40.3% ($SD = 30.9$) belonged to an ethnic minority. In total, 570 studies assessed parental warmth, 344 measured behavioral control, 236 studies assessed harsh control, 227 studies measured autonomy granting, 184 studies assessed parenting styles, and 163 studies measured psychological control.

With regard to the first research question, studies on concurrent associations found that higher levels of parental warmth ($r = -.20$), behavioral control ($r = -.09$), autonomy granting ($r = -.16$), and authoritative parenting ($r = -.14$) were associated with lower levels of internalizing symptoms (Table 1). In contrast, harsh control ($r = .16$), psychological control ($r = .24$),

Table 1. Associations of parenting with internalizing symptoms.

	Parental warmth				Parental behavioral control				Parental harsh control								
	k	r	95% CI	t	Q	k	r	95% CI	t	Q	k	r	95% CI	t	Q		
Parent1 - Intern1	1201	-.20	-.21	-.19	-46.89 ^c	682	-.09	-.10	-.08	-15.64 ^c	686.88	418	.16	.15	.17	25.53 ^c	388.62
Parent1 - Intern2	285	-.12	-.14	-.10	-13.61 ^c	168	-.06	-.09	-.04	-5.56 ^c	83.84	116	.12	.09	.15	8.94 ^c	63.58
Parent1 - Intern12	196	-.06	-.09	-.04	-5.00 ^c	106	-.03	-.05	-.00	-2.01 ^a	205.01 ^c	75	.09	.07	.11	7.26 ^c	198.45 ^c
Intern1 - Parent12	103	-.06	-.08	-.05	-7.15 ^c	62	.01	-.01	.03	1.17	51.23	27	.04	-.03	.11	1.21	135.29 ^c
					120.26												
	Parental psychological control				Parental autonomy granting				Authoritative parenting style								
	k	r	95% CI	t	Q	k	r	95% CI	t	Q	k	r	95% CI	t	Q		
Parent1 - Intern1	422	.24	.22	.25	24.69 ^c	462	-.16	-.18	-.14	-19.04 ^c	451.37	282	-.14	-.16	-.13	-15.12 ^c	289.70
Parent1 - Intern2	90	.19	.15	.24	7.26 ^c	78	-.07	-.11	-.04	-3.49 ^c	39.13	26	-.11	-.17	-.05	-3.45 ^c	8.29
Parent1 - Intern12	62	.08	.05	.10	5.47 ^c	41	-.10	-.14	-.06	-4.57 ^c	80.54 ^c	13	-.04	-.08	-.01	-2.79 ^b	4.96
Intern1 - Parent12	44	.11	.07	.15	5.95 ^c	24	-.05	-.10	.00	-1.80	36.32 ^c	5	-.20	-.24	-.03	-2.37 ^a	6.18
					60.82 ^a												
	Authoritarian parenting style				Permissive parenting style				Neglectful parenting style								
	k	r	95% CI	t	Q	k	r	95% CI	t	Q	k	r	95% CI	t	Q		
Parent1 - Intern1	277	.14	.12	.16	14.13 ^c	193	.01	-.02	.03	.74	175.87	95	.14	.11	.17	10.12 ^c	112.01
Parent1 - Intern2	23	.15	.08	.21	4.19 ^c	13	.06	-.04	.15	1.18	9.77	8	.06	-.03	.15	1.30	.72
Parent1 - Intern12	8	.03	-.06	.12	.74	6	.04	-.06	.15	.83	43.72 ^c	2	-.01	-.04	.03	-.29	.01
Intern1 - Parent12	5	.07	-.01	.15	1.68	1	.11	.01	.22	2.12 ^a		1	.09	-.02	.20	1.54	
					.62												

Note. Parent₁ = parenting at time 1, Intern₁/Intern₂ = internalizing symptoms at time 1/time 2, Intern_{1,2}/Parent_{1,2} = change in internalizing symptoms/parenting between time 1 and time 2. k = number of effect sizes included; r = effect size (weighted mean correlation coefficient); Z = test for significance of r, 95% CI = lower and upper limits of 95% confidence interval; Q = test for homogeneity of effect sizes.

^ap < .05, ^bp < .01, ^cp < .001.

and an authoritarian ($r = .14$) and neglectful parenting style ($r = .14$) related to more internalizing symptoms. According to Cohen (1992), these effect sizes are small or very small. Only permissive parenting showed no significant concurrent association with internalizing symptoms ($r = .01$).

The second research question addressed longitudinal associations between parenting at first assessment and internalizing symptoms at second assessment. The mean time interval between two assessments was 2.77 years ($SD = 2.04$). With the exception of neglectful and permissive parenting, the observed concurrent associations were replicated in longitudinal studies relating initial levels of parenting dimensions/styles to internalizing symptoms at follow-up. As indicated by the nonoverlap of the 95% CI, associations of warmth, harsh control, and autonomy granting with internalizing symptoms were weaker in longitudinal studies than in concurrent studies.

To answer the third research question, we analyzed cross-lagged associations between parenting at first assessment with change in internalizing symptoms. In these analyses only small numbers of studies were available for parenting styles (from $k = 2$ on neglectful parenting to $k = 13$ on authoritative parenting), thus reducing the statistical power for obtaining significant associations. Partial correlation coefficients controlling for initial levels of internalizing symptoms showed that initial levels of parental warmth ($r = -.06$), behavioral control ($r = -.03$), autonomy granting ($r = -.10$), and authoritative parenting ($r = -.04$) predicted a decline in internalizing symptoms over time, whereas initial harsh control ($r = .09$) and psychological control ($r = .08$) predicted an increase in internalizing symptoms. In addition, initial levels of internalizing symptoms predicted declines in warmth ($r = -.06$) and authoritative parenting ($r = -.20$) as well as increases in psychological control ($r = .11$) and permissive parenting ($r = .11$). Thus, associations of internalizing symptoms with parental warmth, psychological control, and authoritative parenting were bidirectional. Nonetheless, most cross-lagged associations were very small.

The final research question addressed the influence of moderating variables on the size of bivariate association between parenting and internalizing symptoms. We start with the analysis of the bivariate associations that do not control for pretest levels of internalizing symptoms.

Results of weighted regression analyses on continuous moderator variables are reported in Table 2. Associations of parental warmth, autonomy granting, and authoritative parenting with internalizing symptoms were more positive in older samples. In addition, associations of harsh control and psychological control with internalizing symptoms were more negative in older participants. The strongest moderating effect of age is depicted in Figure 1. Associations between warmth and internalizing problems are found for children of all ages, but the magnitude is stronger for older children. An inspection of the moderator effect of age on the association of permissive parenting with

Table 2. Influences of child age, gender, and ethnicity on associations between parenting and internalizing symptoms.

Independent variable	Warmth				Behavioral control				Harsh control			
	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>
Age	1431	-.010	-.30	-11.07***	802	.001	.06	1.64	518	.007	.25	5.36***
% female children	1357	-.001	-.09	-3.31***	774	.000	.02	.47	475	.000	.01	.26
% ethnic minority ¹	818	-.000	-.01	-.28	511	-.000	-.03	-.70	355	-.000	-.08	-1.36

Independent variable	Psychological control				Autonomy granting				Authoritative parenting style			
	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>
Age	485	.013	.22	4.44***	531	-.007	-.21	-4.73***	271	-.006	-.19	-3.05***
% female children	491	.001	.98	1.69	497	-.000	-.05	-1.16	275	-.001	-.08	-1.29
% ethnic minority ¹	294	-.000	-.02	-.35	288	-.000	-.01	-.18	157	.001	.22	2.70**

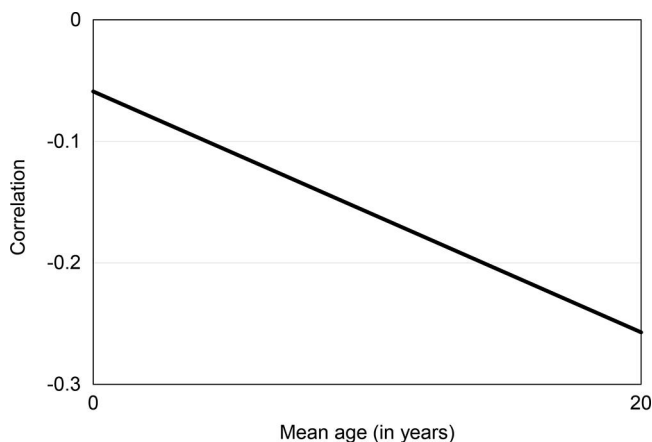
Independent variable	Authoritarian parenting style				Permissive parenting style				Neglectful parenting style			
	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>
Age	269	-.001	-.04	-.68	179	-.010	-.28	-3.70***	80	.007	.14	1.35
% female children	265	.000	.06	.99	176	-.001	-.10	-1.30	83	.001	.09	.86
% ethnic minority ¹	143	-.000	-.04	-.44	104	-.000	-.10	-.96	51	-.000	-.06	-.49

Note. *k* = number of studies; *B*/ β non-/standardized regression coefficient, *t* = test for significance. ¹Only studies from western countries were included in that analysis.

* $p < .05$, ** $p < .01$, *** $p < .001$.

internalizing symptoms showed that permissive parenting was associated with more internalizing symptoms in children ≤ 10 years ($r = .10$, $p < .001$), whereas there was no association in older participants ($r = -.00$, $p < .80$).

Parental warmth was associated with more internalizing symptoms if the samples included more girls. One moderating effect of ethnicity was detected: Associations of authoritative parenting with internalizing symptoms became less positive in samples with higher percentages of members from ethnic minorities.

**Figure 1.** Moderating effect of child age on the association between parental warmth and internalizing symptoms.

Regarding categorical moderator variables, we found that the association of behavior control and authoritative parenting with internalizing symptoms was more negative in nonclinical samples than in clinical samples. In addition, the association of authoritarian parenting with internalizing symptoms was more positive in nonclinical than in clinical samples (Table 3). Furthermore, stronger associations with parental warmth, behavioral control, psychological control, autonomy granting, and authoritative parenting were observed if studies assessed depressive symptoms rather than anxiety symptoms. Results were similar for maternal and paternal parenting. However, the association of parental warmth with internalizing symptoms was more negative if the study focused on parents in general rather than focusing exclusively on maternal warmth.

In five of nine comparisons, we found stronger associations of parenting with internalizing symptoms if information on parenting came from children rather than parents or teachers. In addition, studies on parental warmth found stronger negative associations with internalizing symptoms if the children rather than clinicians or researchers had assessed these symptoms. However, permissive parenting was related to more internalizing symptoms only if parental reports on their behavior were used. In addition, studies that combined data on parenting from multiple informants found stronger negative associations of warmth, behavioral control, and authoritative parenting with internalizing symptoms than studies that used only child and/or parental reports. Furthermore, associations of neglectful parenting with internalizing symptoms were more negative if multiple informants about parenting were used rather than relying exclusively on child or parent reports.

Child reports on internalizing symptoms showed stronger positive associations with parental warmth, autonomy granting, and authoritative parenting than parental reports and, in part, teacher or researcher/clinician reports. In addition, associations of harsh control and psychological control with internalizing symptoms were more negative if children assessed these parental behaviors rather than teachers or researchers/clinicians. However, permissive parenting was only related to more internalizing symptoms if parental symptom reports were used. Furthermore, the most negative association of behavioral control with internalizing symptoms was found if clinicians or researchers assessed these symptoms.

Associations of parental warmth, autonomy granting, and authoritative parenting with internalizing symptoms were more positive if information on both variables came from the same informant rather than from different sources. In addition, associations of harsh control and psychological control with internalizing symptoms were more negative if both variables were assessed by the same informant.

With regard to other criteria of study quality, studies that assessed parental warmth with validated and reliable measures showed a stronger negative

Table 3. Influences of categorical moderators on the association between parenting and internalizing symptoms.

	Warmth					Behavioral control					Harsh control				
	k	r	95% CI	t	Q	k	r	95% CI	t	Q	k	r	95% CI	t	Q
Sample	1396	-.19	-.19	-.18	-44.27 ^c	1217.51	.63			7.14 ^b	519	.15	.14	.17	2.13
Nonclinical										730.23					446.02
Clinical	90	-.20	-.24	-.16	-10.44 ^c	114.59 ^d				63.27	15	.21	.14	.27	14.87
Dependent variable						213.55 ^c				10.55 ^b					25.78 ^c
Anxiety	302	-.13	-.15	-.12	-14.84	249.07	114	-.05	-.08	-02	51	.19	.16	.23	10.36 ^c
Depression	561	-.24	-.26	-.24	-42.10 ^c	618.62 ^d	297	-.10	-.12	-.09	100	.21	.18	.23	15.45 ^c
Sum internalizing	602	-.14	-.15	-.13	-23.62 ^c	426.29	434	-.08	-.09	-06	373	.14	.12	.15	19.99 ^c
Target parent						11.21 ^b				1.44					.41
Mothers	663	-.17	-.18	-.16	-27.35 ^c	579.80	351	-.08	-.10	-.07	226	.16	.14	.18	17.45 ^c
Fathers	332	-.19	-.20	-.17	-20.97 ^c	243.38	142	-.07	-.10	-04	81	.15	.12	.18	9.62 ^c
Mix	491	-.20	-.22	-.19	-30.23 ^c	511.55	357	-.09	-.11	-.08	227	.15	.14	.17	17.59 ^c
Reporter: parenting						139.20 ^c				9.45 ^d					29.59 ^c
Child	990	-.22	-.22	-.21	-45.71 ^c	993.25	564	-.08	-.09	-.07	215	.19	.18	.21	20.87 ^c
Parent	259	-.11	-.13	-.10	-12.25 ^c	171.34	219	-.09	-.11	-.07	264	.13	.11	.14	16.21 ^c
Observer	186	-.11	-.13	-.09	-9.00 ^c	107.99	36	-.09	-.16	-03	36	.14	.10	.19	6.55 ^c
Multi-informant	48	-.21	-.25	-.17	-9.62 ^c	39.38	31	-.16	-.22	-10	19	.16	.10	.22	5.33 ^c
Reporter: internalizing symptoms						114.74 ^c				15.11 ^b					55.70 ^c
Child	995	-.22	-.22	-.21	-44.99 ^c	985.12	562	-.08	-.10	-.07	204	.20	.19	.22	21.66 ^c
Parent	283	-.13	-.15	-.11	-13.95 ^c	179.65	177	-.08	-.11	-.06	237	.14	.12	.15	17.15 ^c
Teacher	111	-.11	-.14	-.08	-7.99 ^c	74.40	66	-.04	-.08	-01	51	.07	.04	.11	4.03 ^c
Peer	11	-.14	-.23	-.06	-3.34 ^c	5.54	4	-.11	-.24	.01	7	.17	.05	.28	2.85 ^b
Clinician/researcher	42	-.14	-.18	-.10	-6.57 ^c	46.05	17	-.17	-.24	-10	15	.11	.05	.16	3.59 ^c
Multi-informant	44	-.15	-.20	-.11	-6.22 ^c	41.21	24	-.16	-.23	-10	18	.14	.08	.19	4.54 ^c
Mono-informant bias						147.03 ^c				10.05 ^b					19.52 ^c
No	424	-.11	-.12	-.09	-14.26 ^c	255.08	239	-.06	-.08	-.04	170	.12	.10	.14	10.97 ^c
In part	85	-.17	-.21	-.14	-10.26 ^c	77.55	39	-.13	-.18	-.08	34	.14	.09	.18	6.23 ^c
Yes	977	-.22	-.23	-.21	-46.02 ^c	977.78	572	-.09	-.10	-.08	328	.17	.16	.19	24.10 ^c
Quality of parenting measure						17.26 ^c				7.26 ^b					310.99
Low	454	-.16	-.18	-.15	-22.84 ^c	393.10	247	-.10	-.12	-.09	184	.12	.10	.14	14.01 ^c
High	1015	-.20	-.21	-.19	-39.44 ^c	921.41	595	-.07	-.09	-06	346	.18	.17	.20	23.88 ^c
Quality of measure of internalizing symptoms						8.34 ^b				.24					1.92

(Continued)

Table 3. Continued.

	Warmth					Behavioral control					Harsh control				
	k	r	95% CI	t	Q	k	r	95% CI	t	Q	k	r	95% CI	t	Q
Low	126	-.15	-.18	-.13	-11.91 ^c	94.22	-0.09	-.12	-.06	-6.47 ^c	105.52	.36	.13	.10	.17
High	1352	-.19	-.20	-.18	-43.92 ^c	1230.27	-0.08	-.09	-.07	-14.27 ^c	688.55	494	.16	.15	.17
Publication status															
Unpublished	165	-.17	-.20	-.15	-13.95 ^c	124.40	-0.11	-.14	-.09	-8.02 ^c	104.15	47	.14	.10	.18
Published	1321	-.19	-.20	-.18	-43.31 ^c	1207.07	-0.08	-.09	-.07	-13.86 ^c	692.69	487	.16	.15	.17
	Psychological control					Autonomy granting					Authoritative parenting style				
	k	r	95% CI	t	Q	k	r	95% CI	t	Q	k	r	95% CI	t	Q
Sample	494	.24	.22	.24	25.73 ^c	2.02				2.50	287	-.15	-.17	-.14	23.41 ^c
Nonclinical	18	.16	.07	.25	3.31 ^c	423.51	-0.14	-.16	-.13	-17.40 ^c	450.81	287	-.15	-.17	-.14
Clinical						9.83	-0.19	-.24	-.14	-7.24 ^c	44.88	21	.01	-.05	.44
Dependent variable						24.17 ^c				7.28 ^a					55.25
Anxiety	80	.17	.12	.21	7.36 ^c	38.54	-0.13	-.16	-.11	-10.08 ^c	211.14	61	-.09	-.13	-.05
Depression	196	.27	.25	.30	20.26 ^c	264.86 ^c	-0.18	-.20	-.15	-13.00 ^c	162.79	107	-.17	-.20	-.14
Sum internalizing	127	.21	.18	.24	15.75 ^c	116.78	-0.13	-.16	-.10	-9.58 ^c	116.40	127	-.14	-.17	-.11
Target parent						5.84				1.95					132
Mothers	233	.21	.18	.23	15.11 ^c	123.91	-0.16	-.19	-.14	-12.63 ^c	184.13	96	-.12	-.16	-.09
Fathers	103	.24	.21	.28	12.54 ^c	212.72 ^c	-0.15	-.18	-.11	-8.95 ^c	110.58	68	-.15	-.19	-.10
Mix	175	.24	.22	.27	17.09 ^c	94.92	-0.14	-.16	-.11	-10.68 ^c	200.14	143	-.15	-.17	-.12
Reporter: parenting						28.90 ^c				29.71 ^c					15.97 ^b
Child	376	.25	.24	.27	25.45 ^c	340.01	-0.17	-.19	-.16	-19.03 ^c	340.11	194	-.15	-.17	-.13
Parent	100	.14	.10	.18	6.89 ^c	59.29	-0.07	-.11	-.04	-4.32 ^c	125.24	89	-.09	-.12	-.05
Observer	10	.17	.03	.29	2.46 ^a	5.64	-0.11	-.17	-.05	-3.48 ^c	18.97	9	-.20	-.30	-.10
Multi-informant	25	.22	.14	.29	5.23 ^c	21.69	-0.15	-.25	-.04	-2.83 ^b	10.01	10	-.27	-.36	-.16
Reporter: internalizing symptoms						16.57 ^b				40.94 ^c					18.40 ^a
Child	358	.24	.23	.26	23.83 ^c	353.35	-0.18	-.20	-.16	-19.61 ^c	344.60	180	-.16	-.18	-.15
Parent	106	.18	.14	.22	9.05 ^c	49.84	-0.07	-.10	-.04	-4.05 ^c	92.15	50	-.11	-.15	-.07
Teacher	30	.14	.06	.21	3.64 ^c	17.58	-0.06	-.13	-.00	-1.99 ^a	21.73	24	-.06	-.11	-.01
Peer	3	.25	.05	.44	2.41 ^a	.70	-0.20	-.46	.10	-1.31	1.91	4	-.07	-.22	.09
Clinician/researcher	6	.27	.14	.40	3.94 ^c	2.94	-0.11	-.18	-.03	-2.84 ^b	22.95	4	-.09	-.20	.02

Multi-informant	6	.24	.09	.38	3.17 ^c	3.41	16	-.12	-.23	-.01	-2.14 ^a	7.89	8	-.15	-.24	-.03	-2.51 ^a	7.31
Mono-informant bias						40.52 ^c						21.45 ^c						9.37 ^b
No	144	.14	.11	.17	8.08 ^c	66.51	107	-.08	-.11	-.04	-4.27 ^c	63.81	62	-.08	-.12	-.04	-4.03 ^c	36.69
In part	25	.24	.16	.31	5.69 ^c	13.55	24	-.16	-.24	-.07	-3.59 ^c	12.03	13	-.17	-.24	-.08	-3.81 ^c	6.58
Yes	340	.26	.24	.28	25.46 ^c	341.66	409	-.17	-.19	-.15	-18.85 ^c	417.04	233	-.15	-.17	-.13	-15.03 ^c	255.94
Quality of parenting measure						1.42						.14						.15
Low	69	.21	.16	.24	8.39 ^c	38.29	104	-.14	-.18	-.11	8.57 ^c	61.24	75	-.13	-.17	-.10	-7.38 ^c	52.44
High	436	.24	.22	.25	24.12 ^c	389.76	435	-.15	-.17	-.13	16.61 ^c	433.35	226	-.14	-.16	-.12	-13.03 ^c	237.51
Quality of measure of internalizing symptoms						.35						.87						.01
Low	55	.25	.19	.29	9.23 ^c	34.82	30	-.12	-.18	-.07	-4.22 ^c	28.81	53	-.14	-.18	-.10	-6.65 ^c	54.12
High	441	.23	.21	.24	23.40 ^c	387.91	504	-.15	-.17	-.14	-18.66 ^c	460.80	248	-.14	-.16	-.12	-13.49 ^c	235.95
Publication status						.44						77.68 ^c						4.83 ^a
Unpublished	70	.22	.17	.25	8.68 ^c	43.33	80	-.07	-.09	-.06	-11.19 ^c	196.09 ^c	39	-.09	-.13	-.04	-3.34 ^c	66.92 ^b
Published	442	.24	.22	.24	24.36 ^c	390.11	460	-.14	-.14	-.13	-41.23 ^c	874.54 ^c	269	-.15	-.17	-.13	-15.29 ^c	228.77

	Authoritarian						Permissive						Neglectful					
	k	r	95% CI	t	Q		k	r	95% CI	t	Q		k	r	95% CI	t	Q	
Sample					8.97 ^b													
Nonclinical	279	.15	.13	.17	15.24 ^c	246.90	187	.01	-.02	.03	.76	177.25	50	.13	.11	.16	9.67 ^c	.10
Clinical	21	.04	-.03	.11	1.10	47.13 ^c	19	.04	-.04	.12	.97	9.20	96	.12	.02	.22	2.29 ^a	97.32
Dependent variable					1.07						2.76		7	.12	.02	.22	2.29 ^a	15.07 ^a
Anxiety	51	.16	.11	.21	6.97 ^c	43.34	40	.04	-.01	.10	1.48	32.31	12	.14	.06	.23	3.22 ^b	.26
Depression	99	.14	.10	.17	8.59 ^c	129.56	66	-.01	-.05	.02	-.72	79.97	45	.14	.10	.18	7.37 ^c	17.49
Sum internalizing	135	.14	.11	.17	9.23 ^c	104.72	87	.01	-.02	.05	.72	64.01	44	.12	.09	.17	5.98 ^c	53.48
Target parent					1.72						8.76 ^a		44	.12	.09	.17	5.98 ^c	39.73
Mothers	91	.16	.12	.19	8.81 ^c	58.32	62	.06	.01	.10	2.56 ^a	39.94	27	.15	.10	.20	5.67 ^c	.56
Fathers	64	.14	.09	.18	6.14 ^c	46.89	38	.04	-.02	.10	1.44	20.99	20	.13	.07	.19	4.13 ^c	25.85
Mix	144	.13	.11	.16	10.14 ^c	146.16 ^a	105	-.02	-.05	.01	-1.12	121.11	56	.13	.09	.16	7.11 ^c	20.49
Reporter: parenting					2.86						29.82 ^c		56	.13	.09	.16	7.11 ^c	66.12
Child	182	.14	.11	.16	11.49 ^c	207.67	138	-.01	-.03	.02	-.60	134.92	87	.12	.09	.15	8.72 ^c	14.36 ^b
Parent	93	.13	.10	.17	7.34 ^c	70.60	50	.13	.08	.17	4.87 ^c	32.18	3	.10	-.02	.23	1.63	105.68
Observer	10	.20	.10	.31	3.82 ^c	3.17	8	-.10	-.22	.01	-1.82	4.66	7	.18	.09	.25	3.94 ^c	.05
Multi-informant	9	.21	.09	.33	3.33 ^c	5.10	7	-.12	-.25	.02	-1.64	7.97	4	.34	.23	.44	5.66 ^c	3.38
Reporter: internalizing symptoms					4.86						16.25 ^c		4	.34	.23	.44	5.66 ^c	3.60
Child	192	.14	.12	.16	12.20 ^c	226.52 ^a	145	-.01	-.04	.01	-.98	153.41	81	.14	.11	.17	9.23 ^c	3.92
																		104.39 ^a

(Continued)

Table 3. Continued.

	Authoritarian					Permissive					Neglectful				
	k	r	95% CI	t	Q	k	r	95% CI	t	Q	k	r	95% CI	t	Q
Parent	58	.16	.11	.20	6.91 ^c	37	.11	.05	.17	3.80 ^c	7	.11	.01	.21	2.20 ^a
Teacher	29	.10	.04	.16	3.16 ^b	15	.06	-.04	.15	1.21	4	.09	-.04	.22	1.37
Peer	5	.24	.09	.38	3.13 ^b	0					4	.08	-.08	.24	1.00
Clinician/ researcher	7	.16	.05	.26	2.91 ^b	4	.05	-.10	.20	.62	4	.13	.01	.24	2.06 ^a
Multi-informant	9	.09	-.04	.21	1.36	5	-.01	-.19	.17	-.13	2	.29	.10	.475	2.99 ^b
Mono-informant bias					2.86					8.79 ^a					1.48
No	52	.12	.07	.16	5.05 ^c	35	.04	-.02	.10	1.45	14	.09	.02	.17	2.53 ^a
In part	13	.20	.11	.28	4.53 ^c	4	-.21	-.35	-.05	-2.62 ^b	8	.16	.06	.25	3.15 ^b
Yes	235	.14	.12	.16	13.26 ^c	167	.01	-.01	.04	.92	81	.14	.11	.17	9.23 ^c
Quality of parenting measure					1.12					9.46 ^b					.81
Low	71	.12	.09	.16	6.65 ^c	52	-.05	-.09	-.00	-2.00 ^a	58	.12	.09	.16	6.67 ^c
High	224	.15	.12	.17	13.10 ^c	149	.04	.01	.06	2.59 ^b	42	.15	.11	.19	6.88 ^c
Quality of measure of internalizing symptoms					10.57 ^c					8.70 ^b					1.12
Low	51	.08	.04	.12	4.06 ^c	44	-.05	-.10	-.00	-2.01 ^a	37	.11	.07	.16	5.28 ^c
High	245	.16	.14	.18	15.12 ^c	157	.03	.01	.06	2.42 ^a	62	.14	.11	.18	8.13 ^c
Publication status					.73					1.81					10.76 ^c
Unpublished	26	.11	.05	.18	3.43 ^c	17	.07	-.02	.16	1.57	2	.40	.24	.54	4.70 ^c
Published	274	.14	.12	.16	14.36 ^c	189	.01	-.02	.03	.62	101	.13	.10	.15	9.89 ^c

Note: k = number of effect sizes included; r = effect size (weighted mean correlation coefficient); Z = test for significance of r. 95% CI = lower and upper limits of 95% confidence interval; Q = test for homogeneity of effect sizes.

^a $p < .05$, ^b $p < .01$, ^c $p < .001$.

association of warmth with internalizing symptoms than other studies. Similarly, studies with validated measures of harsh control and authoritarian parenting found stronger positive associations of these aspects of parenting with internalizing symptoms than other studies. In contrast, associations of behavioral control with internalizing symptoms were more negative in studies that did not use validated measures of this kind of parental behavior. Permissive parenting was related to more internalizing symptoms if there was support for the validity of the assessment of parenting and of internalizing symptoms while the reverse was true if support of the validity of the assessments was lacking. In addition, studies that provided support for the validity of their assessments of internalizing symptoms found stronger positive associations with parental warmth and stronger negative associations with authoritarian parenting than studies with other assessments.

The analyses of concurrent associations between parenting and internalizing symptoms did not provide systematic evidence for a possible publication bias. The association of behavior control with internalizing symptoms was more negative in unpublished than in published studies. Associations of neglectful parenting with internalizing symptoms became more positive in unpublished studies. However, associations of autonomy granting and authoritative parenting with internalizing symptoms were more negative in published than in unpublished studies. The trim-and-fill procedure also did not provide support for a possible publication bias.

We finally searched for moderators of the size of association between parenting and *change* in internalizing symptoms. Data on parenting styles had to be excluded from these analyses due to the limited number of available effect sizes ($k = 2-13$). The number of identified moderating effects was limited, probably due to lower statistical power (see supplementary Table S1 and S2). We found that parental warmth was associated with a stronger decrease of internalizing symptoms in published than in unpublished studies. Behavioral control predicted stronger decreases in internalizing problems in samples with more boys, in clinical as compared to nonclinical samples, and if multiple informants provided information on internalizing symptoms rather than exclusively the children. In addition, harsh control predicted weaker increases in internalizing problems if the samples included more members of ethnic minorities and in published as compared with unpublished studies. Psychological control was only associated with increases in internalizing symptoms if child reports rather than parent reports on this kind of parental behavior was used. In contrast to published studies, unpublished studies did not find an effect of psychological control on change in internalizing symptoms. Finally, autonomy granting was associated with a stronger decrease in internalizing symptoms in older samples and in studies that did not provide support for the validity of their symptom measure as compared to studies with better measures.

Discussion

Compared with previous meta-analyses in the field, the present meta-analysis has three important strengths. First, the present meta-analysis is the first to address cross-lagged associations between parenting and internalizing symptoms. Second, it is the first meta-analysis that included the four parenting styles defined by Baumrind (1966) and successors. Third, much larger numbers of studies were included than in related previous meta-analyses, thus ensuring the statistical power for identifying small and, in part, very small effects. We observed small concurrent and longitudinal bivariate associations of the assessed parenting dimensions and most parenting styles with internalizing symptoms. Parental warmth, behavior control, autonomy granting, and authoritative parenting predicted decreases in internalizing symptoms over time, whereas harsh control and psychological control predicted increases of internalizing symptoms over time. However, all cross-lagged associations were very small to small in a statistical sense. In addition, associations of internalizing symptoms with parental warmth, psychological control, and authoritative parenting were found to be bidirectional. Furthermore, moderator effects of sampling, child age and gender, dependent variable, parental gender, rater of parenting and internalizing symptoms, quality of measures, and publication status were observed.

The strongest concurrent associations were observed for parental warmth and psychological control. Although the size of the observed associations of parental warmth with anxiety and depression is similar to the results of previous meta-analyses (McLeod et al., 2007a, 2007b; Yap & Jorm, 2015; Yap et al., 2014), we found smaller associations of autonomy granting and behavioral control with child outcomes than Yap et al. (2014). The discrepancy is based on the fact that Yap et al. (2014) did not include some studies with very small effect sizes.

Although three previous meta-analyses did not differentiate between forms of parental control (McLeod et al., 2007a, 2007b; van der Bruggen et al., 2008), the present meta-analysis indicates that psychological control is most strongly associated with elevated levels of internalizing symptoms followed by harsh control. Because psychologically controlling parents induce negative feelings if their child does not behave in their preferred way (Barber, 1996), internalizing symptoms of the child are the psychological cost of this parental behavior. In contrast to harsh and psychological control, behavior control predicted internalizing symptoms in the opposite direction with higher behavioral control being associated with lower levels of symptoms.

We had expected that authoritative parenting would be associated with the lowest level of internalizing symptoms, whereas the reverse would be true for neglectful parenting. Although the first part of the assumption received empirical support, neglectful and authoritarian parenting were similarly

associated with elevated levels of internalizing symptoms. Because both parenting styles are characterized by low parental warmth (Maccoby & Martin, 1983), this shared aspect may explain the elevated symptoms. The observed lack of associations of permissive parenting with internalizing symptoms may indicate that negative effects of lack of parental behavioral control may be compensated by positive effects of parental warmth.

Most bivariate associations between internalizing symptoms and parenting were significant in concurrent and longitudinal analyses. However, associations with warmth, behavioral control, harsh control, psychological control, and autonomy granting were weaker in longitudinal studies. The latter result can, in part, be explained by the fact that some relationships of parenting with internalizing symptoms are bidirectional and concurrent associations are based on effects of parenting *and* effects of internalizing symptoms on the other variable. In addition, changes in parenting behaviors and styles over time lead to a reduction of predictive power of the initial level of these variables.

When initial symptom levels were controlled for, only six of nine aspects of parenting predicted change in internalizing symptoms over time, and only one of these effect sizes (autonomy granting) reached at least the criterion of small effect sizes (Cohen, 1992). Thus, the present meta-analysis indicates that effects of the assessed parenting dimensions/styles on change in internalizing symptoms tend to be very small. Nonetheless, as internalizing symptoms at pretest and third variables, such as child temperament, already explain a large amount of variance of post-test scores, less variance remains to be explained by parenting than when predicting absolute levels of initial symptoms. In addition, longitudinal studies can only assess the effect of the present level of a variable on change in another variable, thus ignoring effects that the former variable may have had in the past. Longitudinal studies with more time points could identify accumulating effects of parenting. The combination of parenting behaviors and styles of mothers and fathers could also be expected to explain more variance than the present focus on single aspects of behavior of the individual parent (Berkien, Louwerse, Verhulst, & van der Ende, 2012). Furthermore, we focused on general parenting behaviors/styles rather than on behaviors specifically targeted at overcoming anxiety or depressive symptoms of their child.

Concurrent bivariate associations do not provide information on which of the assessed variables affect the other. The present analysis of cross-lagged effects indicates that three of nine associations of parenting (warmth, psychological control, authoritative parenting style) with internalizing symptoms were bidirectional, whereas three analyses found only evidence for “parent effects” (behavioral control, harsh control, autonomy granting) on internalizing symptoms and one analysis only for “child effects” on parenting (permissive parenting). Note that the terms “child effect” and “parent effect”

are used in a statistical rather than causal sense (Albrecht et al., 2007) because causal relations could only be tested in experiments. More bidirectional effects might be identified if more studies on cross-lagged associations of parenting styles with internalizing symptoms became available.

The present meta-analysis found support for stronger effect sizes in clinical samples than in nonclinical samples only in longitudinal data, whereas two concurrent associations of parenting with internalizing symptoms were even weaker in clinical samples. The observed weaker concurrent associations of behavioral control and authoritative parenting with internalizing symptoms in clinical samples may be due to restricted variance in the high range of problems.

Similar to the study by van der Bruggen et al. (2008), moderator analyses indicate that associations between parenting and internalizing symptoms increase across childhood and adolescence. This may, at least in part, be based on the fact that internalizing symptoms and disorders become more common in adolescence, which provides more opportunities for affecting these symptoms (Kessler et al., 2005). The stronger associations of parental warmth with internalizing symptoms observed in studies with higher percentages of girls can be explained by the fact that internalizing symptoms are more prevalent in girls than boys (Silverman & Carter, 2006) and that girls tend to be more sensitive to the quality of their daily interpersonal relationships (Flook, 2012). The stronger cross-lagged associations of behavioral control with decline in internalizing symptoms in studies with higher percentages of boys might indicate that parental monitoring (as an central aspect of behavioral control) is more important for detecting and counteracting internalizing symptoms of boys: Boys are less likely to freely disclose their feelings than girls (Stattin & Kerr, 2000).

Associations of authoritative parenting with present levels of internalizing symptoms were less positive and associations of harsh control with an increase in these symptoms were less negative if more children from ethnic minorities participated. According to the cultural consistency hypothesis (Dwairy, Achoui, Abouserie, & Farah, 2006), parental behaviors or styles have more positive and/or less negative effects if they are accepted in a particular culture. Authoritative parenting has been considered to be more normative in Western families with European backgrounds than in ethnic minorities with stronger collectivist values (Rudy & Grusec, 2001). In contrast, compliance without discussion is, on average, more accepted in ethnic minorities (Rudy & Grusec, 2001), which could reduce negative effects of (mild forms of) harsh parenting. Future studies should test whether these results can be generalized across different ethnic minorities.

The observed stronger associations of parenting with depressive as compared with anxiety symptoms may, among others, indicate that parenting is more likely to affect children's mood than their fears or that depressed

children and adolescents are in particular likely to evaluate the behavior of their parents negatively. Although fathers tend to have more distant relationships with their children and adolescents compared with mothers (Lewis & Lamb, 2003), maternal and paternal parenting showed similar associations with child outcomes. This similarity may be based on the fact that mothers and fathers tend to show similar parenting behaviors both according to their own reports and child reports (Bögels & van Melick, 2004). The observed stronger association of warmth with internalizing symptoms in studies with sum measures across both parents may indicate that effects of parenting become stronger if both parents behave in a similar way.

Associations with internalizing symptoms were, in part, stronger when information on parenting came from more than one informant rather than relying exclusively on reports of one family member and when child reports were used rather than parental reports. Using multiple sources of information is less error-prone and more likely to produce robust results. The observed lower effect sizes in studies with mothers' and fathers' reports on their parenting may indicate that parents tend to provide socially desirable and less valid reports on their behavior (Morsbach & Prinz, 2006). In addition, positive parenting behaviors may not affect the child as long as they are not perceived by him or her (Bögels & van Melick, 2004). The observed stronger associations of child reports on internalizing symptoms as compared with parent reports indicate that parents have difficulty detecting internalizing symptoms of their child (Meesman & Koot, 2000), which could lead to an underestimation of associations with parenting.

Different criteria of study quality had different effects on the size of the observed associations: Although mono-informant bias inflated the magnitude of some bivariate correlations, lower quality of the measures of parenting and internalizing symptoms was associated with reduced effect sizes. Thus, biases could lead to under- as well as overestimations of true effect sizes and should therefore be analyzed separately rather than combining them to a sum-measure. In all cases of mono-informant bias, the associations remained significant if different raters provided information on parenting and internalizing symptoms.

There was no consistent empirical support for a possible file-drawer problem in cross-sectional studies, while associations of parenting with change in internalizing symptoms were, in part, stronger in published than in unpublished studies. As two of these comparisons were based on three and five unpublished studies, respectively, more unpublished studies would have to be identified before drawing final conclusions about file-drawer problems.

Limitations and conclusions

Several limitations of the present meta-analysis have to be mentioned. First, despite the large number of included studies, only limited numbers of studies

were available on cross-lagged associations and on cross-lagged effects of parenting styles in particular. Lower numbers of studies on parenting styles than on parenting dimensions are one reason for the lower number of significant effects in analyses on parenting styles. Although longitudinal and cross-lagged analyses in particular offer some insight into the direction of effects, they do not allow for analyzing causal relations. Second, the selection of the assessed parenting dimensions and styles was mainly based on the work of Baumrind (1966) and successors (e.g., Larzelere et al., 2013; Maccoby & Martin, 1983). Some parenting scales assess additional dimensions such as verbosity (Arnold et al., 1993) that were not included in the present meta-analysis. In addition, the operationalization of the parenting constructs varied across studies. For example, some measures of harsh control focused on observed intrusive behavior, whereas others addressed reports on verbal and/or physical punishment. Nonetheless, most effect sizes were homogeneous, thus indicating that heterogeneous measures tend to produce similar effect sizes. Some included parenting dimensions could be further divided into subdimensions (e.g., behavioral control in different forms of monitoring, consistency of rules, etc.). Third, although data were excluded if the measure of parenting could not be categorized into one of the selected dimensions or styles, minor overlap of item contents of the measures of different forms of control could not be avoided. Fourth, we had to restrict the number of moderator variables and did not, for example, compare different ethnic minorities. Fifth, as many moderator variables consisted of several categories and information on individual moderators was lacking in part of the studies, we did not compute multivariate analyses of moderator variables. Sixth, the present meta-analysis tested for linear associations between parenting and internalizing symptoms, as available studies usually reported only correlations between levels of parenting and child outcomes. However, there may also be nonlinear associations. For example, Barber and Xia (2013) suggested that intermediate levels of behavioral control may work best. Finally, the present study did not analyze the interplay of maternal and paternal parenting.

Despite these limitations, several conclusions can be drawn. First, the present meta-analysis indicates that researchers and practitioners should not expect strong effects of the assessed parenting dimensions/styles on change in internalizing symptoms. Effects of single parenting dimensions and styles are small and in most cases even very small. Second, analyses of cross-lagged associations indicate that correlations of parenting with internalizing symptoms cannot be interpreted as pure effects of parenting on the child outcome. Associations are often bidirectional. Third, researchers and practitioners should clearly differentiate between different forms of parental control as harsh and psychological control rather than behavior control predict an increase in internalizing symptoms. Fourth, multiple informants on parenting should be used as combining their reports may lead to more robust

results. Fifth, the present results do not allow a clear selection of a particular parenting dimension or style that might produce the strongest effect on internalizing symptoms. Although parental warmth and psychological control showed the strongest concurrent associations with internalizing symptoms, this advance was not maintained in cross-lagged analyses. Thus, parenting interventions may rather focus on changing a broader range of parental behaviors. For example, parenting trainings have been found to reduce dysfunctional parenting, such as inconsistent discipline and harshness (e.g., de Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008). Finally, regarding future research needs, **more experimental studies are recommended** to test causal effects of parenting on change in internalizing symptoms. For example, de Wilde and Rapee (2008) observed that an experimental induction of excessive maternal control increased child anxiety. For ethical reasons, these experiments should induce parental behaviors that could be expected to reduce rather than increase internalizing symptoms. More research is also recommended on variables that mediate the effect of parenting styles and dimensions on internalizing symptoms. These studies could shed light on the differential associations of parenting with depressive and anxiety symptoms. Furthermore, we recommend more research on nonlinear associations of parenting with internalizing symptoms and other child outcomes.

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Associations of Parenting Styles and Dimensions with Academic Achievement in Children and Adolescents: A Meta-analysis

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Published online: 7 September 2015

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Abstract Parents and researchers alike are interested in how to promote children's academic competence. The present meta-analysis integrates the results of 308 empirical studies on associations of general parenting dimensions and styles with academic achievement of children and adolescents assessed via grade point average or academic achievement tests. Parental responsiveness (warmth), behavioral control, autonomy granting, and an authoritative parenting style were associated with better academic performance both concurrently and in longitudinal studies, although these associations were small in a statistical sense. Parental harsh control, and psychological control, as well as neglectful, authoritarian, and permissive parenting styles were related to lower achievement with small to very small effect sizes. With three exceptions, parenting dimensions and styles also predicted change in academic achievement over time. Moderating effects of child age, ethnicity, reporter on parenting and academic achievement, quality of the parenting and achievement measure, and publication status were identified. It is concluded that associations of academic achievement with general parenting dimensions/styles tend to be smaller than associations of school-specific parental involvement which have been addressed in previous meta-analyses.

Keywords Academic achievement · Grade point average · Meta-analysis · Parenting

Psychological and educational researchers have long been interested in the effects of parenting on students' academic achievement (e.g., Fan and Chen 2001). Many studies have focused on parental school-related involvement in a narrow sense, such as helping children with homework, attending parent–teacher conferences, and attending children's extracurricular activities. Related meta-analyses have shown positive small to moderate associations between parental

Electronic supplementary material The online version of this article (doi:10.1007/s10648-015-9338-y) contains supplementary material, which is available to authorized users.

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involvement and academic achievement ($r=0.12$, Castro et al. 2015; $r=0.18$, Hill and Tyson 2009; $r=0.25$, Fan and Chen 2001; $r=0.25$, Jeynes 2007; $r=0.34$, Jeynes 2005). In contrast, comprehensive meta-analyses are lacking that relate general parental behaviors and styles to academic achievement. Therefore, the present study integrates available research on associations of general dimensions and parenting styles with academic achievement of children and adolescents.

Dimensional approaches to parenting originally identified two central aspects of (general) parental behaviors, namely responsiveness (being accepting, nurturing, sensitive, supportive, and warm) and demandingness/control (Baumrind 1966; Maccoby and Martin 1983). Later, researchers further distinguished four kinds of demandingness/control (e.g., Janssens et al. 2015). First, *proactive behavioral control* consists of active parental strategies involving the communication of clear and consistent expectations of appropriate behavior and efforts to monitor the child's behavior related to these expectations. Second, *reactive behavioral control* refers to punishment if the child's behavior does not meet parental expectations. It often takes the form of harsh parenting encompassing coercive parenting tactics from frequent use of corporal punishment to escalated physical abuse (e.g., Stutz and Schwarz 2014). A third form of control, *psychological control*, refers to parents controlling the child's behavior by manipulating his or her psychological experiences, such as the use of guilt induction, shaming, and conditional loving to pressure their children (Barber 1996). Whether the amount of parental control is adequate or hinders the development of autonomy is addressed in a fourth form of parental control, parental *overcontrol* versus *autonomy granting*. Overcontrol refers to an excessive amount of involvement in the daily routines and activities of a child, encouraging dependence on the parents (Barber 1996). In contrast, autonomy granting is defined as parental encouragement of the child's individual expression and decision making, such as allowing children to make choices about activities and behavior, and encouraging the development of independence (Silk et al. 2003). While parental responsiveness/warmth and the four forms of control represent dimensions that vary from low to high, the parenting styles approach categorizes parents based on combinations of low versus high scores on parenting dimensions. Maccoby and Martin (1983) defined four parenting styles according to the levels of responsiveness/warmth and (proactive) behavioral control: an authoritative style (high warmth and high control), an authoritarian style (low warmth and high control), a permissive style (high warmth and low control), and a neglectful style (low warmth and low control). As the five parenting dimensions and the four parenting styles have received considerably empirical attention in the research on academic outcomes, the present meta-analysis integrated the available results.

Associations of Parenting Dimensions and Styles with Academic Performance

It has been hypothesized that the relation between general parenting dimensions/styles and academic achievement is mediated by students' achievement motivation (e.g., Marchant et al. 2001; Turner et al. 2009), self-efficacy beliefs (e.g., Turner et al. 2009), and self-regulation (e.g., Lee et al. 2012). Higher *responsiveness* is associated with higher interest in school and learning goal orientation which help students succeed in school (Spera 2006). When focusing on *proactive behavioral control*, parents with high maturity demands expect their children to perform up to their intellectual capacity. In addition, proactive behavioral

control promotes goal-directed behavior (Lee et al. 2012) and reduces externalizing problem behavior, such as truancy, which interferes with academic performance (Li et al. 2000). In contrast, *harsh parental control* may promote the rejection of parental standards of academic performance and reduce academic achievement (Shumov et al. 1998). Similarly, Aunola and Nurmi (2004) suggested that psychological control may be associated with low performance as guilt-inducing parents are emotional and impulsive and may not be capable of providing the cognitively oriented school-related advice and support necessary for high academic performance. In addition, in line with self-determination theory, *autonomy support* as opposed to parental overcontrol promotes self-regulation in academic work which is, again, related to better performance at school (e.g., Wong 2008).

Given the suggested associations of parenting dimensions with academic achievement, the *authoritative parenting style* (high responsiveness plus high demandingness) has been linked with adaptive achievement strategies characterized by low levels of failure expectations, task-irrelevant behavior and passivity (Aunola et al. 2000) coupled with high levels of independent problem solving and critical thinking (Gray and Steinberg 1999; Grolnick and Ryan 1989), which could promote academic achievement. In contrast, adolescents of *neglectful parents* have been found to apply most strongly maladaptive achievement strategies characterized by high levels of task-irrelevant behavior and passivity which, again, inhibits academic achievement (Aunola et al. 2000). Although *authoritarian* and *permissive parents* each show one kind of parental behavior suggested to promote academic achievement (demandingness and responsiveness, respectively), the other component of the parenting model by Maccoby and Martin (1983) is lacking (responsiveness and demandingness, respectively). Children of these parents could, therefore, be expected to perform less well academically than children of authoritative parents although they may show better academic performance than children of neglectful parents.

Research on associations between parenting dimensions/styles with academic achievement has been summarized in narrative reviews. Recently, Masud et al. (2015) reviewed 39 studies on associations of parenting styles with academic outcomes including achievement, motivation, and school behaviors. They concluded that parenting styles were one of the most important factors affecting academic achievement. However, theoretical flaws such as suggesting that authoritative parents use psychological control and the lack of inclusion of a large number of relevant, available studies limit the conclusions that can be drawn from that review. A narrative review by Brown and Iyengar (2008) reported that parental behavioral and psychological control had a direct influence on student achievement. However, they cited only two studies as support for their conclusion. Reviewing studies on general and school-specific parenting, Spera (2005) concluded that parental monitoring (as aspect of proactive behavioral control) was associated with better academic performance.

A meta-analysis by Rosenzweig (2001) found significant correlations of student achievement with authoritative ($r=0.20$, based on 22 findings), permissive ($r=-0.08$, based on 16 findings), and uninvolved/neglectful parenting ($r=-0.23$, based on 10 findings). In addition, parental warmth ($r=0.275$, based on 6 findings) and autonomy support ($r=0.23$, based on 12 findings) were related to better academic achievement. Unfortunately, this meta-analysis did not provide separate results for the fourth parenting style (authoritarian parenting). Relevant information remained unreported, such as tests for statistical significance of the weighted mean effect size and for homogeneity of the effect sizes. Another unpublished meta-analysis on correlates of parental autonomy support found a very small association with academic achievement ($r=0.08$, based on 11 studies; Crowther 2014).

As available narrative reviews and unpublished meta-analyses included only small numbers of studies and provided sparse support for some of their claims, the first goal of the present meta-analysis was to integrate the results from a much larger number of studies in order to get more robust results. Concurrent correlations do not allow for testing whether parenting may have an effect on academic achievement or vice versa, and ignoring child effects will inflate estimates of the parents' contribution to children's socialization. Thus, the second goal of the meta-analysis was to compare associations of parenting with academic outcomes across different research designs: cross-sectional data, longitudinal data relating parenting at first assessment to academic achievement at second assessment, and cross-lagged designs analyzing statistical effects of parenting on change in academic outcomes and of academic performance on change in parenting. As the results of available studies are, in part, inconsistent, the third goal of the meta-analysis was the identification of study characteristics that moderate the size of associations between parenting dimensions/styles and academic performance.

Moderating Effects of Study Characteristics

Age We tested whether associations of parenting dimensions/styles with academic achievement decline in older samples when adolescents strive for autonomy from their parents and peers become more important. Meta-analyses on school-related parenting found stronger associations with academic outcomes in elementary school students (Jeynes 2005) than in students from secondary schools (Jeynes 2007).

Child Gender Results of individual studies are contradictory on whether associations of parenting with academic achievement do (Dumka et al. 2009; Must 2007) or do not vary by child gender (Paulson 1994). The present meta-analysis tested whether there were systematic gender differences across the available studies.

Ethnicity The meaning and effects of parenting may vary according to whether individual parenting behaviors or styles are culturally accepted. For example, there is some evidence that white adolescents are more likely to benefit academically from authoritative parenting than African-American and Asian-American adolescents (Steinberg et al. 1992). Thus, the present meta-analysis tested whether associations of parenting with academic performance varied by the percentage of students from ethnic minorities.

Parental Gender The meta-analysis also tested for moderating effects of parental gender. As mothers are often the primary caregiver, they might be more influential than fathers. However, results of individual studies are inconsistent regarding whether maternal (Dumka et al. 2009) or paternal parenting dimensions/styles (Tam 2009) show stronger associations with academic achievement. We were also interested in whether the size of associations differed between same-sex dyads (e.g., mother–daughter) and cross-sex dyads.

Dependent Variable While some studies assessed students' grade point average (GPA), others used standardized academic achievement tests. Thus, we tested whether the results varied between these two outcomes. No directional hypothesis could be stated.

Reporter of Parenting and Academic Achievement Mothers' and fathers' reports on parenting may be affected by a tendency to give socially desirable answers and to avoid reporting problematic behaviors to a third party (Morsbach and Prinz 2006). Similarly, students may give socially desirable answers when asked about their academic performance (Teye and Peaslee 2015). Thus, the present meta-analysis tested whether associations between parenting and child outcomes were weaker if the information about parenting comes from the fathers and/or mothers and when information about academic performance comes from the students rather than other reporters. In addition, the meta-analysis tested whether stronger associations were found if information on parenting and academic performance comes from the same source due to shared methods variance.

Quality of the Measures Studies of high quality provide support for the validity and reliability of their measures. However, it is less clear whether the quality of the measures would have a systematic effect on the size of associations between parenting and academic achievement. The meta-analyses by Jeynes (2005, 2007) on school-related parental involvement found no moderator effect of study quality. Thus, no directional expectation could be stated.

Publication Status Because non-significant results may be less likely to be published (Lipsey and Wilson 2001), the meta-analysis tested whether the effect sizes were smaller in unpublished than in published studies.

Methods

Sample

Studies were identified through electronic databases [PSYCINFO, ERIC, Google Scholar, and PSYNDEX (an electronic database of psychological literature from German-speaking countries)—search terms: (parenting OR child rearing) and (academic achievement OR academic success OR student performance OR grade point average OR GPA OR achievement test)] and cross-referencing. Criteria for inclusion of studies in the present meta-analysis were as follows:

- (a) The studies assessed parental warmth/responsiveness, (prospective) behavioral control, harsh control, psychological control, autonomy granting (versus overprotection), and/or parenting styles defined by Maccoby and Martin (1983),
- (b) they assessed academic achievement of the children either via academic achievement tests or grade point average (GPA),
- (c) statistical associations between parenting and achievement were reported or could be computed,
- (d) mean age of the sample <20 years,
- (e) the studies were completed before June, 2015.

In order to include studies from different regions of the world, we did not limit the included studies to those written in English. Unpublished studies identified by the literature search (e.g., dissertations) were also included. We identified 1173 studies. After screening and assessing for eligibility, we were able to include 308 studies in the meta-analysis. A flow chart of the search

for studies is provided in Appendix 1, and the studies included are listed in Appendices 2 and 3 (see [supplementary online material](#)).

We entered the number of students, mean age, percentage of girls and percentage of members of ethnic minorities, publication status (1=published, 2=unpublished), rater of parenting (1=child, 2=parent, 3=observer, 4=multi-informant), rater of academic performance (1=child, 2=parent, 3=teacher, 4=researcher, 5=multi-informant), assessment of academic performance (1=GPA, 2=achievement test), quality of the measures of parenting and academic performance (2=support for validity and reliability provided, 1=no such support provided), and the size of association between parenting and academic performance. If associations were provided for several subgroups within the same publication (e.g., for female and male participants), we entered them separately in our analysis instead of entering the global association. If data from more than one rater or outcome were reported, we entered the effect sizes separately. The weights of these effect sizes were adjusted in order to avoid a disproportional impact of this study on the overall effect size (Lipsey and Wilson 2001). Approximately 20 % of the studies were coded by the author and a graduate student. A mean inter-rater reliability of 94 % (range 89–100 %) was established. Differences were resolved by discussion.

Measures

Parental responsiveness (warmth) was most often assessed with the Children's Report of Parent Behavior Inventory (CRPBI; Schaefer 1965; 24 studies), the Parenting Style Questionnaire (Lamborn et al. 1991; 12 studies), and related measures (103 studies). Proactive behavioral control was most often assessed with the Parenting Style Questionnaire (Lamborn et al. 1991; 15 studies), the CRPBI (10 studies), and related instruments (106 studies). Of the 32 studies assessing harsh parental control, most researchers used measures developed specifically for their study (13 studies). Psychological control was assessed with the CRPBI (9 studies), the Psychological Control Scale-Youth Self-Report (Barber 1996; 9 studies), and related instruments (11 studies). Autonomy granting was assessed with the Parenting Style Questionnaire (Lamborn et al. 1991, 5 studies), the Parental Bonding Instrument (Parker et al. 1979; 4 studies), and other measures (33 studies). Parenting styles were most often assessed with the Parental Authority Questionnaire (Buri 1991; 29 studies), the Parenting Style Questionnaire (Lamborn et al. 1991; 22 studies), and related instruments (58 studies). Finally, academic performance was assessed via GPA (241 studies) and academic achievement tests such as the Woodcock-Johnson III Tests of Achievement (Woodcock et al. 2001; 73 studies).

Statistical Integration of the Findings

Calculations for the meta-analysis were performed in four steps, using random-effects models and the method of moments (Lipsey and Wilson 2001).

1. The correlations were transformed using Fisher's r -to- z transformation. Outliers that were more than two SD from the mean of the effect sizes were recoded to the value at two SD, based on Lipsey and Wilson (2001).
2. Weighted mean z -scores and 95 % confidence intervals were computed. The significance of the mean was tested by dividing the weighted mean effect size by the standard error of

- the mean. To compare the mean effect sizes with the effect sizes reported in the single studies, the mean effect sizes were later converted to the original metric of product-moment correlations.
3. Homogeneity of effect sizes was tested by use of the Q statistic.
 4. In order to test the influence of moderator variables, we used an analogue of an analysis of variance and weighted ordinary least squares regression analyses. A significant Q score indicates heterogeneity of the effect sizes between the compared conditions. Which conditions differ is tested by comparing the 95 % confidence intervals (CI). Differences between two conditions are significant if CI of two effect sizes do not overlap (Lipsey and Wilson 2001). As information on moderator variables (e.g., age, gender) was lacking in part of the studies, moderator effects were analyzed individually rather than including all moderators simultaneously in a common multivariate analysis.

Results

The 308 included studies have been published between 1974 and 2015. They provided data on 362,155 young people with a mean age of 13.19 years ($SD=3.51$). About 50.6 % of the participants were female ($SD=17.9$) and 42.6 % ($SD=30.9$) belonged to an ethnic minority.

As shown in Table 1, studies on concurrent relationships found that better academic achievement was associated with higher levels of parental responsiveness (warmth; $r=0.14$), behavioral control ($r=0.11$), autonomy granting ($r=0.11$), and an authoritative parenting style ($r=0.17$). According to Cohen's criteria for interpreting effect sizes, all associations must be interpreted as small (Cohen 1992). Parental harsh control ($r=-0.16$) and psychological control ($r=-0.11$) as well as authoritarian ($r=-0.09$), permissive ($r=-0.05$), and neglectful parenting styles ($r=-0.15$) were associated with lower academic performance. The size of these relationships was small to very small. The non-overlap of the 95 % CI indicates that the association of neglectful parenting with academic achievement was more negative than the associations of authoritarian and permissive parenting. Longitudinal studies relating parenting at first assessment with achievement at follow-up (mean interval 3.6 years) replicated the concurrent associations of warmth ($r=0.17$), behavioral control ($r=0.11$), harsh control ($r=-0.13$), psychological control ($r=-0.23$), autonomy granting ($r=0.15$), and authoritative parenting ($r=0.15$; Table 1). However, associations of initial authoritarian, permissive, and neglectful parenting with academic achievement at follow-up were not significant in longitudinal studies, possibly due to low statistical test power (only three to seven effect sizes were available for these analyses).

Analyses of cross-lagged effects showed that parental warmth ($r=0.10$), behavioral control ($r=0.04$), autonomy granting ($r=0.06$), and authoritative parenting ($r=0.10$) predicted increases in academic achievement over time while harsh control ($r=-0.11$), psychological control ($r=-0.14$), and a neglectful parenting style ($r=-0.09$) predicted decreases in achievement. Associations of initial achievement with changes in parenting could only be analyzed for three out of nine aspects of parenting dimensions/styles. Better initial achievement was associated with increases in parental warmth ($r=0.11$) and behavioral control ($r=0.08$), thus indicating bidirectional associations (Table 1).

Weighted linear regression analyses were used in order to analyze statistical effects of continuous moderator variables (mean age, percentage of female participants and of

Table 1 Associations of parenting with academic performance

	Parental warmth				Parental behavioral control				Parental harsh control									
	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>			
Parent ₁ –Achiev ₁	217	0.14	0.12	0.15	16.61***	179.39	0.11	0.09	0.12	12.18***	195.55	43	–0.16	–0.20	–0.12	–8.10***	40.02	
Parent ₁ –Achiev ₂	61	0.17	0.13	0.20	9.71***	55.84	0.11	0.07	0.15	5.69***	39.68	12	–0.13	–0.19	–0.06	–3.86***	13.64	
Parent ₁ –Achiev ₁₂	28	0.10	0.07	0.13	6.68***	21.75	0.04	0.00	0.07	2.13*	50.01*	6	–0.11	–0.18	–0.05	–3.34***	4.98	
Achiev ₁ –Parent ₁₂	10	0.11	0.20	0.05	2.36*	3.03	0.08	0.03	0.12	3.50***	15.90	0						
Parental psychological control																		
Parental autonomy granting																		
Parent ₁ –Achiev ₁	76	–0.11	–0.13	–0.10	–16.87***	71.28	0.11	0.08	0.14	7.36***	50.00	162	0.17	0.15	0.20	13.35***	162.27	
Parent ₁ –Achiev ₂	14	–0.23	–0.27	–0.19	–9.18***	3.49	0.15	0.09	0.22	4.77***	24.28	9	0.15	0.04	0.25	2.61**	1.35	
Parent ₁ –Achiev ₁₂	10	–0.14	–0.23	–0.05	–2.93**	9.20	0.06	0.02	0.11	3.05**	7.05	8	0.10	0.08	0.12	10.57***	5.93	
Achiev ₁ –Parent ₁₂	0						5	0.02	–0.10	0.13	0.27	0						
Authoritarian parenting style																		
Permissive parenting style																		
Parent ₁ –Achiev ₁	145	–0.09	–0.12	–0.07	–6.68***	148.06	0.128	–0.05	–0.07	–0.02	–3.72***	125.72	62	–0.15	–0.19	–0.12	–9.92***	64.58
Parent ₁ –Achiev ₂	7	–0.10	–0.23	0.03	–1.48	1.83	6	0.03	–0.10	0.16	0.45	4.33	3	–0.12	–0.26	0.02	–1.63	1.51
Parent ₁ –Achiev ₁₂	4	–0.03	–0.07	0.01	–1.30	2.05	4	0.01	–0.03	0.05	0.37	6.00	1	–0.09	–0.13	–0.05	–4.36***	
Achiev ₁ –Parent ₁₂	0						0					0						
Neglectful parenting style																		

Parent₁, parenting at time 1; Achiev₁/Achiev₂, academic achievement at time 1/time 2; Achiev₁₂/Parent₁₂, change in achievement/parenting between time 1 and time 2; *k*, number of effect sizes included; *r*, effect size (weighted mean correlation coefficient), *Z* test for significance of *r*; 95 % CI lower and upper limits of 95 % confidence interval; *Q*, test for homogeneity of effect sizes

p* < 0.05, *p* < 0.01, ****p* < 0.001

participants from ethnic minorities). Associations of autonomy granting and authoritarian parenting with academic achievement were weaker in older samples (Table 2).

Adolescent gender did not moderate the association of parenting styles/dimensions with academic achievement. Based on the work by Steinberg et al. (1992), tests for moderating effects of ethnicity were restricted to studies from Western countries where most ethnic minorities endorse collectivistic values to a larger extent than members of the majority. Two moderating effects of ethnicity were found, with associations of autonomy granting and authoritative parenting with academic achievement being weaker (less positive) in samples with more participants from ethnic minorities (Table 2).

Regarding categorical moderator variables, we found stronger associations of psychological control with academic achievement if achievement test scores ($r=-0.17$) rather than GPA ($r=-0.11$) was used as academic outcome variable (Table 3). Only one out of nine analyses identified a moderating effect of parental gender: Associations of maternal warmth with academic achievement were stronger ($r=0.16$) than associations of paternal warmth ($r=0.10$). In order to test interaction effects between parental gender and child gender, the analysis of parental warmth was repeated in subsamples of girls and boys. There was a significant moderating effect of parental gender on associations of warmth with achievement of girls ($Q=5.82$, $p<0.02$), with maternal warmth showing a stronger association ($r=0.17$, $t=4.66$, $p<0.001$) than paternal warmth ($r=0.05$, $t=1.47$, n.s.). In contrast, associations of boys'

Table 2 Influences of child age, gender, and ethnicity on associations between parenting and academic achievement

Independent variable	Warmth				Behavioral control				Harsh control			
	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>
Age	221	-0.004	-0.11	-1.49	211	0.003	0.06	0.80	43	-0.003	-0.09	-0.60
% Female children	250	0.000	0.04	0.50	237	-0.000	-0.06	-0.91	44	0.000	0.01	0.08
% Ethnic minority ^a	119	-0.001	-0.18	-1.95	139	-0.000	-0.08	-0.94	37	0.001	0.17	1.02
Independent variable	Psychological control				Autonomy granting				Authoritative parenting style			
	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>
Age	70	0.006	0.18	1.34	59	-0.011	-0.28	-2.17*	106	-0.000	-0.00	-0.02
% Female children	84	0.000	0.03	0.24	62	-0.001	-0.14	-1.04	138	-0.001	-0.05	-0.62
% Ethnic minority ^a	33	0.000	0.16	0.83	41	-0.002	-0.52	-3.57***	92	-0.001	-0.26	-2.57**
Independent variable	Authoritarian parenting style				Permissive parenting style				Neglectful parenting style			
	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>	<i>k</i>	<i>B</i>	β	<i>t</i>
Age	97	0.017	0.30	3.09**	82	0.003	0.07	0.54	28	-0.001	-0.10	-0.49
% Female children	119	0.001	0.05	0.56	102	0.001	0.08	0.74	40	-0.001	-0.05	-0.30
% Ethnic minority ^a	80	0.001	0.19	1.76	70	0.000	0.13	1.05	37	0.001	0.26	1.61

k number of studies, *B*/ β non-/standardized regression coefficient, *t* test for significance

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

^a Only studies from western countries were included in that analysis

Table 3 Influences of categorical moderators on the association between parenting and academic achievement

	Warmth				Behavioral control				Harsh control									
	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>			
Dependent variable					0.94					3.69					0.00			
Achievement test	53	0.16	0.12	0.19	8.92***	56.20	45	0.07	0.02	0.11	3.09**	40.36	12	-0.15	-0.22	-0.08	-4.28***	12.28
GPA	222	0.14	0.12	0.15	16.86***	173.51	217	0.11	0.10	0.13	13.40***	191.11	43	-0.15	-0.19	-0.11	-7.88***	42.24
Target parent					10.39**						0.30					0.04		
Mothers	122	0.16	0.14	0.18	13.91***	112.91	89	0.11	0.08	0.14	7.13***	83.99	20	-0.15	-0.20	-0.10	-5.71***	20.79
Fathers	70	0.10	0.07	0.13	6.70***	32.68	44	0.10	0.05	0.14	4.34**	16.43	8	-0.14	-0.23	-0.05	-3.09**	3.59
Mix	86	0.15	0.12	0.17	12.41***	87.48	133	0.11	0.09	0.13	10.54***	134.40	27	-0.15	-0.20	-0.10	-6.21***	30.24
Reporter: parenting					20.04***						29.64***					7.16		
Child	204	0.14	0.12	0.16	17.07***	179.81	190	0.12	0.10	0.14	14.09***	171.26	21	-0.09	-0.14	-0.04	-3.56***	15.88
Parent	54	0.11	0.07	0.14	5.98***	31.90	61	0.03	0.00	0.07	1.98*	40.95	27	-0.18	-0.22	-0.14	-8.44***	38.47
Observer	16	0.24	0.19	0.30	9.05***	20.34	8	0.26	0.12	0.39	3.76***	2.39	5	-0.17	-0.25	-0.08	-3.54***	1.45
Multi-informant	4	0.22	0.08	0.36	3.12**	0.89	7	0.23	0.12	0.35	4.08***	0.84	2	-0.16	-0.30	-0.01	-2.12*	0.00
Reporter: academic achievement					4.34						13.30**					3.40		
Child	141	0.13	0.11	0.15	13.23***	108.49	136	0.13	0.11	0.15	12.55***	118.31	8	-0.14	-0.22	-0.06	-3.32***	11.82
Parent	10	0.16	0.09	0.22	4.64***	5.47	14	0.02	-0.04	0.09	0.68	12.30	3	-0.24	-0.33	-0.13	-4.41***	2.41
Teacher	65	0.14	0.11	0.17	8.25***	53.55	65	0.09	0.06	0.12	5.63***	55.16	30	-0.13	-0.17	-0.09	-5.98***	27.86
Researcher	51	0.16	0.12	0.19	8.78***	55.43	37	0.08	0.03	0.12	3.41***	36.39	11	-0.15	-0.23	-0.08	-4.25***	12.08
Multi-informant	6	0.21	0.12	0.29	4.51***	6.25	12	0.09	0.00	0.17	2.00*	13.75	2	-0.16	-0.31	-0.01	-2.04*	0.00
Mono-informant bias					1.54						5.14					0.10		
No	126	0.14	0.11	0.16	11.34***	114.45	113	0.08	0.06	0.11	6.32***	90.01	43	-0.15	-0.18	-0.11	-7.60***	41.87
In part	4	0.21	0.10	0.31	3.65***	0.19	5	0.13	0.01	0.25	2.20*	6.38	2	-0.16	-0.31	0.00	-1.96*	0.00
Yes	145	0.14	0.12	0.16	14.81***	117.77	146	0.12	0.10	0.14	11.92***	136.35	9	-0.16	-0.23	-0.08	-4.09***	12.03
Quality of parenting measure					10.84***						1.16					0.22		
Support for validity/ reliability	189	0.12	0.11	0.14	13.66***	141.85	130	0.12	0.09	0.14	10.54***	117.92	32	-0.14	-0.19	-0.10	-6.36***	31.87
No support	87	0.17	0.15	0.20	14.49***	89.82	134	0.10	0.00	0.12	8.37***	116.36	23	-0.16	-0.21	-0.11	-6.39***	22.73
Quality of achievement measure					0.00						3.60					0.12		
Support for validity/ reliability	138	0.14	0.12	0.16	12.82***	143.80	124	0.09	0.06	0.11	7.21***	100.45	44	-0.15	-0.19	-0.11	-8.07***	43.91

Table 3 (continued)

No support	137	0.14	0.12	0.16	13.90***	89.05	140	0.12	0.10	0.14	11.54***	132.30	10	-0.14	-0.21	-0.06	-3.63***	9.96
Publication status						0.94						6.55*						1.36
Unpublished	52	0.13	0.09	0.16	7.91***	34.47	48	0.06	0.03	0.10	3.10**	33.43	10	-0.11	-0.18	-0.04	-3.09**	8.43
Published	226	0.15	0.13	0.16	17.95***	201.49	218	0.12	0.10	0.13	13.51***	200.92	45	-0.16	-0.19	-0.12	-8.68***	46.61
Psychological control	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>		<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>		<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>	
Dependent variable					6.14*						0.01						1.25	
Achievement test	21	-0.17	-0.22	-0.13	-7.42***	7.70	17	0.12	0.05	0.19	3.53***	20.87	29	0.14	0.08	0.20	4.76***	28.99
GPA	69	-0.11	-0.13	-0.09	-12.57***	58.71	61	0.12	0.10	0.15	8.22***	52.07	142	0.18	0.15	0.20	12.77***	133.85
Target parent					0.31							1.46					0.80	
Mothers	40	-0.10	-0.13	-0.08	-7.26***	33.22	25	0.15	0.10	0.20	5.75***	27.78	23	0.15	0.08	0.22	4.34***	9.99
Fathers	28	-0.12	-0.15	-0.09	-7.95***	13.83	15	0.11	0.04	0.18	3.17**	6.23	23	0.15	0.07	0.22	3.87***	16.88
Mix	22	-0.14	-0.16	-0.11	-9.61***	22.90	38	0.11	0.07	0.15	5.93***	40.47	123	0.18	0.15	0.21	12.01***	133.25
Reporter: parenting					0.71							19.75***					1.04	
Child	72	-0.12	-0.14	-0.10	-13.01***	63.07	62	0.11	0.09	0.14	8.01***	55.53	131	0.17	0.14	0.19	11.78***	126.09
Parent	18	-0.14	-0.19	-0.09	-5.30***	6.36	12	0.10	0.03	0.17	2.82**	15.17	29	0.19	0.13	0.25	6.10***	31.55
Observer	0						4	0.39	0.27	0.51	6.33c	0.47	0					
Multi-informant	0						0						9	0.12	-0.02	0.24	1.72	2.01
Reporter: academic achievement					9.94**							6.56					3.79	
Child	57	-0.11	-0.12	-0.09	-12.08***	47.49	37	0.13	0.09	0.16	6.95***	31.72	111	0.17	0.14	0.20	11.02***	107.01
Parent	4	-0.14	-0.24	-0.03	-2.43*	0.06	3	0.14	0.02	0.26	2.28*	2.76	7	0.24	0.10	0.39	3.27**	7.62
Teacher	8	-0.15	-0.20	-0.11	-6.73***	14.81*	20	0.09	0.04	0.14	3.26**	18.99	27	0.22	0.14	0.28	5.61***	20.15
Researcher	21	-0.17	-0.22	-0.13	-7.82***	8.122	14	0.16	0.09	0.24	4.11***	18.08	23	0.13	0.07	0.20	3.97***	23.30
Multi-informant	0						1	-0.11	-0.33	0.12	-0.94		3	0.18	0.01	0.33	1.91	0.46
Mono-informant bias					9.45**							0.90					0.64	
No	34	-0.16	-0.19	-0.13	-10.79***	26.77	39	0.10	0.06	0.15	4.65***	41.99	52	0.18	0.14	0.23	7.78***	57.89
In part	0						0						1	0.10	-0.21	0.39	0.63	

Table 3 (continued)

Yes	56	-0.11	-0.12	-0.09	-12.44***	47.95	36	0.13	0.09	0.17	6.84***	28.21	113	0.17	0.14	0.20	10.67***	100.16
Quality of parenting measure	4.05*						0.73						2.29					
Support for validity/reliability	79	-0.11	-0.13	-0.10	-13.12***	59.82	44	0.11	0.08	0.15	5.58***	34.91	103	0.16	0.12	0.19	9.60***	101.92
No support	11	-0.16	-0.19	-0.13	-7.51***	12.75	35	0.13	0.10	0.17	6.68***	39.21	67	0.19	0.15	0.23	9.59***	59.07
Quality of achievement measure						9.39**						0.46					1.55	
Support for validity/reliability	32	-0.16	-0.19	-0.13	-10.47***	20.93	46	0.11	0.07	0.15	5.45***	46.78	56	0.15	0.10	0.19	6.56***	56.12
No support	58	-0.11	-0.12	-0.09	-12.23***	51.69	31	0.13	0.09	0.17	6.36***	25.87	113	0.18	0.15	0.21	11.90***	105.78
Publication status						0.00						3.04					2.04	
Unpublished	17	-0.12	-0.16	-0.08	-5.61***	20.97	16	0.08	0.03	0.13	3.07**	19.84	36	0.13	0.08	0.19	4.75***	50.43
Published	73	-0.12	-0.14	-0.10	-12.81***	48.76	63	0.14	0.10	0.17	8.38***	53.35	135	0.18	0.15	0.21	12.79***	111.28
Authoritarian	<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>		<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>		<i>k</i>	<i>r</i>	95 % CI	<i>t</i>	<i>Q</i>	
Dependent variable																		
Achievement test	23	-0.11	-0.18	-0.04	-3.18**	23.24	21	-0.03	-0.09	0.03	-0.92	21.39	12	-0.16	-0.22	-0.09	-4.71***	15.60
GPA	129	-0.09	-0.12	-0.06	-6.09***	126.52	113	-0.05	-0.08	-0.02	-3.72***	109.18	53	-0.15	-0.19	-0.12	-8.88***	50.75
Target parent					5.15							0.12					1.86	
Mothers	18	-0.07	-0.14	0.01	-1.63	22.13	17	-0.03	-0.10	0.04	-0.96	10.32	3	-0.07	-0.20	0.06	-1.03	6.30*
Fathers	19	-0.18	-0.25	-0.10	-4.31***	19.66	17	-0.04	-0.12	0.03	-1.13	8.34	1	-0.20	-0.42	0.05	-1.57	
Mix	113	-0.09	-0.12	-0.06	-5.55***	105.47	98	-0.05	-0.07	-0.02	-3.36***	109.51	60	-0.16	-0.19	-0.13	-10.05***	58.87
Reporter: parenting					3.80							4.37					6.38*	
Child	118	-0.08	-0.11	-0.06	-5.64***	110.00	105	-0.03	-0.06	-0.01	-2.63**	106.94	61	-0.15	-0.18	-0.12	-9.68***	60.94
Parent	22	-0.16	-0.24	-0.09	-4.22***	30.33	17	-0.12	-0.19	-0.04	-3.04**	14.62	2	-0.33	-0.45	-0.17	-4.11***	3.49
Observer					0							0					0	
Multi-informant	10	-0.06	-0.18	0.07	-0.86	7.25	10	-0.08	-0.19	0.03	-1.38	5.67	1	-0.31	-0.52	-0.05	-2.30*	
Reporter: academic achievement					4.46							4.64					7.43	

Table 3 (continued)

Child	99	-0.08	-0.11	-0.05	-4.99***	90.39	88	-0.04	-0.07	-0.01	-2.73**	82.65	46	-0.16	-0.19	-0.12	-8.81***	40.93
Parent	7	-0.22	-0.35	-0.07	-2.82**	6.34	7	-0.09	-0.22	0.04	-1.41	1.07	2	-0.33	-0.45	-0.17	-4.16***	3.58*
Teacher	20	-0.11	-0.19	-0.04	-2.85**	29.61	18	-0.11	-0.18	-0.03	-2.87**	23.41	5	-0.11	-0.21	-0.01	-2.20*	6.67
Researcher	19	-0.12	-0.20	-0.05	-3.28**	14.48	17	-0.01	-0.08	0.05	-0.32	19.56	10	-0.13	-0.20	-0.07	-3.89***	13.94
Multi-informant	3	-0.15	-0.33	0.04	-1.57	5.30	1	0.01	-0.27	0.28	0.04		1	-0.31	-0.52	-0.05	-2.32*	
Mono-informant bias						1.10						2.00						1.37
No	44	-0.11	-0.16	-0.06	-4.35***	57.08	38	-0.07	-0.12	-0.02	-2.83**	55.40	15	-0.13	-0.18	-0.07	-4.27***	19.13
In part	2	-0.16	-0.35	0.05	-1.50	0.85	2	-0.11	-0.27	0.07	-1.21	0.73	0					
Yes	102	-0.09	-0.12	-0.05	-5.33***	87.97	91	-0.03	-0.06	-0.01	-2.31*	69.33	49	-0.17	-0.20	-0.13	-9.31***	47.05
Quality of parenting measure						0.07						3.59						0.22
Support for validity/ reliability	67	-0.09	-0.13	-0.05	-4.37***	55.54	57	-0.02	-0.05	0.02	-1.04	55.21	40	-0.15	-0.19	-0.11	-7.63***	41.09
No support	84	-0.10	-0.13	-0.06	-5.25***	93.44	76	-0.06	-0.10	-0.03	-4.04***	74.70	24	-0.16	-0.21	-0.11	-6.50***	24.41
Quality of achievement measure						2.87						0.17						1.39
Support for validity/ reliability	102	-0.08	-0.11	-0.05	-4.82***	98.34	89	-0.04	-0.07	-0.01	-2.88**	80.43	48	-0.16	-0.20	-0.13	-9.37***	47.43
No support	49	-0.13	-0.18	-0.08	-5.14***	50.10	44	-0.05	-0.10	-0.01	-2.32*	48.01	17	-0.12	-0.18	-0.07	-4.29***	19.62
Publication status						4.63*						3.88*						5.94*
Unpublished	32	-0.03	-0.09	0.03	-1.08	35.77	31	-0.09	-0.14	-0.04	-3.49***	26.56	12	-0.08	-0.14	-0.01	-2.16*	20.67*
Published	120	-0.11	-0.14	-0.08	-7.16***	112.75	103	-0.03	-0.06	-0.01	-2.52*	104.94	53	-0.17	-0.20	-0.14	-10.66***	46.01

k number of effect sizes included; *r* effect size (weighted mean correlation coefficient), *Z* test for significance of *r*; 95 % *CI* lower and upper limits of 95 % confidence interval; *Q* test for homogeneity of effect sizes

p*<0.05, *p*<0.01, ****p*<0.001

academic achievement with maternal warmth ($r=0.09$, $t=2.69$, $p<0.01$) and paternal warmth ($r=0.06$, $t=1.53$, n.s.) did not differ significantly ($Q=0.42$, n.s.).

Academic achievement showed stronger associations with behavioral control ($r=0.12$ vs. $r=0.03$) if child reports rather than parental reports on parenting were used. In addition, associations of warmth and autonomy support with achievement were stronger if observer ratings ($r=0.24$ and $r=0.39$) rather than child or parent ratings on parenting ($r=0.11/0.14$ and $r=0.10/0.11$) were used. As indicated by the Q statistics, there was also a significant moderator effect of the reporter on the association between neglectful parenting and achievement. However, the 95 % CIs of the subgroups overlapped, which precluded a clear interpretation of between-group differences. Two significant moderator effects were observed for sources of information about academic achievement: Associations with behavioral control were stronger if children ($r=0.13$) rather than parents ($r=0.02$) provided information on GPA. In addition, associations with psychological control were stronger if information from researchers (on results of achievement tests, $r=-0.17$) were used rather than child reports on their grades ($r=-0.11$). There was no empirical support for the suggestion that shared methods variance leads to stronger effect sizes if information on parenting and achievement come from the same rater. Associations of psychological control and academic achievement were even weaker if the information was collected from the same respondent ($r=-0.11$ vs. $r=-0.16$).

Two associations varied by the quality of the assessment of parenting dimensions/styles. Studies that provided support for the validity and reliability of the parenting measures found weaker associations of parental warmth ($r=0.12$ vs. $r=0.17$) with academic achievement. In contrast, associations of psychological control with academic achievement were stronger if the study provided support for the validity of the measure of academic achievement, such as using validated achievement tests ($r=-0.16$ vs. $r=-0.11$).

Finally, there were moderating effects of publication status. Associations of behavioral control ($r=0.12$ vs. $r=0.06$) and neglectful parenting ($r=-0.17$ vs. $r=-0.08$) were stronger in published than in unpublished studies.

Discussion

The present meta-analysis found significant concurrent, longitudinal, and cross-lagged associations of parental warmth, behavioral control, harsh control, psychological control, autonomy support, and authoritative parenting with academic achievement, although the associations were weak or very weak in a statistical sense. Statistically significant associations of authoritarian, permissive, and neglectful parenting with academic achievement were only identified in cross-sectional studies. In addition, some moderating effects of child age, ethnicity, kind of academic outcome, reporter on parenting and academic achievement, quality of the parenting and achievement measure, and publication status were detected.

While meta-analyses on associations of school-specific parental involvement and academic achievement found associations of about $r=0.2$ (Castro et al. 2015; Hill and Tyson 2009; Fan and Chen 2001; Jeynes 2005, 2007) with correlations up to $r=0.40$ for selected aspects (parental aspiration/expectations of children's education achievement, Fan and Chen 2001), the present meta-analysis indicates that associations of general parenting dimensions and styles with academic achievement tend to be smaller. Thus, specific parental behaviors aimed at directly promoting academic achievement (such as communication with the child about school issues) can be expected to produce larger effects than general parental behaviors or parenting

styles that will have rather indirect effects on academic achievement mediated by achievement motivation (Marchant et al. 2001), self-regulation (Lee et al. 2012), or other variables.

Although few correlates of academic achievement exceed $r=0.20$ (e.g., academic self-efficacy, $r=0.31$; effort regulation, $r=0.32$; test anxiety, $r=-0.24$; Richardson et al. 2012), the present results do not support the claim by Masud et al. (2015) that parenting styles are one of *the most important* factors affecting academic achievement. In addition, analyses of cross-lagged effects indicated that correlations between parenting dimensions and achievement are not only based on the effects of parental behaviors on achievement but also reflect, in part, effects of achievement on parenting dimensions. For example, success in school may promote positive emotions of the parents toward their child. Unfortunately, studies are lacking that relate initial academic achievement with changes in parenting styles. Some cross-lagged effects were very small in a statistical sense (Cohen 1992). Because academic achievement at pretest already explains a large amount of variance in achievement at posttest (e.g., Aunola and Nurmi 2004), less variance remains to be explained by parenting than when predicting absolute levels of initial achievement. In addition, the combination of parenting behaviors and styles of mothers and fathers could be expected to explain more variance than the present focus on single aspects of behavior of the individual parent.

When comparing correlates of academic achievement across different parenting dimensions/styles, we found the strongest association with psychological control (in longitudinal studies) and the weakest association with the permissive parenting style. Because psychologically controlling parents increase a child's focus on internal distress and adult approval rather than on the learning process itself, psychological control may undermine learning and academic success (Aunola and Nurmi 2004). As permissive parents have a warm relationship with their children despite low levels of parental control (Maccoby and Martin 1983), their warmth may partially compensate for negative effects of lack of control.

Moderator analyses found some evidence of weaker associations of parenting dimensions/styles with academic achievement in older samples. This result indicates that parental influences decline when older adolescents spend less time with their parents, for example when leaving their parental home in order to study at university. Nonetheless, associations of most assessed parenting styles/dimensions with academic achievement did not vary by the age of the offspring.

We observed weaker associations of autonomy granting and authoritative parenting with academic achievement in samples with more participants from ethnic minorities. In Western countries, there is some evidence that adolescents from ethnic minorities expect to achieve autonomy later than their peers from the ethnic majority (e.g., Fuligni 1998), which could, again, reduce the importance of parental autonomy granting for adolescent development. Steinberg et al. (1992) found that African American and Hispanic students were less likely than White students to believe that not doing well in school would have negative consequences for their future. The authors speculated that this belief might have reduced the effect of authoritative parenting on their academic achievement. Unfortunately, we did not have enough data for separate analyses in different ethnic minorities.

The observed stronger associations of psychological control with achievement test scores rather than GPA may indicate that achievement test scores are more valid than students' reports on their grades, which could lead to more meaningful associations with parenting.

There was only weak support for the suggestion that maternal parenting dimensions/styles show stronger associations with student achievement than paternal dimensions/styles. Separate data on fathers were only available in a smaller subsample of studies, which reduced the

chance of finding significant moderating effects of parental gender. Regarding interaction effects of child and parental gender, we found that maternal warmth showed stronger associations with girls' achievement than paternal warmth while no such effect was observed for boys. Mothers tend to be the primary caregivers in most families, but parents spend relatively more time with a same-sex child and are more involved in a same-sex child's life (Maccoby 2003). These factors may lead to stronger associations of maternal warmth than paternal behavior with daughters' outcomes in particular. As too few studies were available to analyze interaction effects of parental and child gender on other parenting dimensions/styles, it could not be tested whether similar results would be found for parental control and other parenting variables.

The present meta-analysis identified some rater effects. Stronger effect sizes of child reports on behavioral control rather than parental reports may indicate that parental behaviors have to be perceived by the child in order to affect child outcomes. In addition, some mothers and fathers give socially desirable answers on their parenting (Morsbach and Prinz 2006), which masks the real effects of parental behaviors on child outcomes. The observed stronger associations of psychological control with researcher reports on academic achievement rather than child reports probably indicate that child reports on their grades tended to be less valid than achievement tests applied by researchers. Nonetheless, such a difference appeared in only one analysis, thus indicating a rather low effect of biased self-reports on GPA.

There was no evidence of bias due to shared methods variance that may emerge when information on parenting dimensions/styles and academic grades come from the same source. Such a bias may be more likely to appear when analyzing associations between different subjective evaluations rather than when relating evaluations of parenting to GPA.

Results on moderating effects of the methodological quality of the measures were inconsistent, thus indicating that studies with parenting measures of lower quality may underestimate as well as overestimate associations with academic achievement. For example, results may differ when researchers combine items from related well-established measures rather than constructing new items that do not fit well to the assessed construct.

Finally, there was some evidence of a publication bias as two associations were stronger in published than in unpublished studies. Nonetheless, the associations of parenting behaviors/styles were still statistically significant in the unpublished studies.

Limitations and Conclusions

Some limitations of the present meta-analysis have to be mentioned. First, despite the large number of included studies, only limited numbers of studies were available on cross-lagged associations, and on cross-lagged effects of parenting styles in particular. Second, although longitudinal and cross-lagged analyses offer some insight into the direction of effects, they do not allow for analysis of causal relations. Third, the selection of the assessed parenting dimensions and styles was mainly based on the work of Baumrind (1966) and successors (Maccoby and Martin 1983). Some parenting scales assess additional dimensions such as verbosity (Arnold et al. 1993) that were not included in the present meta-analysis. In addition, some included parenting dimensions could be further divided into subdimensions (e.g., behavioral control in different forms of monitoring, consistency of rules, etc.). Fourth, although we addressed general rather than school-specific parenting styles/dimensions, these measures sometimes include an item that refers to school. As many studies did not provide the

complete list of items used, we were not able to test whether pure non-academic and other general measures of parenting dimensions/styles produce different results. Fifth, we could only use a dummy measure of the methodological quality of the measures because many studies provided insufficient information for a more detailed coding of the validity and reliability of their measures. Sixth, as many moderator variables consisted of several categories and information on individual moderators was lacking in some studies, we did not compute multivariate analyses of moderator variables. Finally, we did not analyze the interplay of maternal and paternal parenting.

Despite these limitations, several conclusions can be drawn. First, our meta-analysis indicates that researchers and practitioners should not place unduly high expectations on the effects of *general* parenting dimensions or styles on change in academic achievement. Effects of single parenting styles and dimensions are small or even very small in a statistical sense. Second, analyses of cross-lagged associations indicate that correlations of parenting with academic achievement cannot be interpreted as pure effects of parenting on the child outcome. There are at least some bidirectional associations and there is still not enough research available to evaluate whether child achievement may predict changes in parenting styles over time. Third, the analysis of cross-lagged effects indicates that, in order to promote academic achievement of their children, parents may in particular increase warmth and authoritative parenting and avoid harsh control as well as psychological control. Given the fact that the observed associations of general parenting dimensions/styles with change in academic achievement are, on average, small, effective ways of promoting academic performance should also include other measures, such as promoting school-specific parental involvement (Fan and Chen 2001; Hill and Tyson 2009). With regard to future research needs, more cross-lagged studies are needed on the interplay of academic achievement with parenting, and with parenting styles in particular. In addition, experimental studies are recommended in order to test causal effects of parenting on change in children's academic achievement. In addition, more research is recommended on variables that mediate the association between general parenting dimensions/styles and academic achievement.

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Associations of Parenting Dimensions and Styles With Externalizing Problems of Children and Adolescents: An Updated Meta-Analysis

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The present meta-analysis integrates research from 1,435 studies on associations of parenting dimensions and styles with externalizing symptoms in children and adolescents. Parental warmth, behavioral control, autonomy granting, and an authoritative parenting style showed very small to small negative concurrent and longitudinal associations with externalizing problems. In contrast, harsh control, psychological control, authoritarian, permissive, and neglectful parenting were associated with higher levels of externalizing problems. The strongest associations were observed for harsh control and psychological control. Parental warmth, behavioral control, harsh control, psychological control, autonomy granting, authoritative, and permissive parenting predicted change in externalizing problems over time, with associations of externalizing problems with warmth, behavioral control, harsh control, psychological control, and authoritative parenting being bidirectional. Moderating effects of sampling, child's age, form of externalizing problems, rater of parenting and externalizing problems, quality of measures, and publication status were identified. Implications for future research and practice are discussed.

Keywords: parenting, aggression, antisocial behavior, delinquency, externalizing behavior problems

Supplemental materials: <http://dx.doi.org/10.1037/dev0000295.supp>

Externalizing problem behaviors are defined as undercontrolled behaviors that manifest as aggression, disruptiveness, defiance, hyperactivity, and impulsivity (Achenbach & Edelbrock, 1978). Different forms of externalizing behavior problems are interrelated. For example, a meta-analysis by Card, Stucky, Sawalani, and Little (2008) found a large mean correlation between direct (physical) and indirect (relational) aggression ($r = .76$), and a medium to large correlation of both forms of aggression with delinquency ($r = .58$ and $r = .45$, respectively). Externalizing problems are the most common and persistent form of childhood maladjustment with long-term negative psychosocial outcomes, such as an increased risk for psychiatric disorders (Campbell, Shaw, & Gilliom, 2000).

Several theoretical models suggest that parents' behaviors contribute to the development of externalizing behavior in their offspring (e.g., Bandura, 1977; Gottfredson & Hirschi, 1990; Reid, Patterson, & Snyder, 2002). However, many models and empirical studies addressed few aspects, or even only one aspect, of parenting, and the results of the individual studies are, in part, inconsistent. Therefore, the main goals of the present meta-analysis were to integrate the results of available studies and (a) to analyze which parenting dimensions and styles show the strongest associations with externalizing problems, and (b) to test whether these associations vary by study characteristics, such as whether the studies analyzed bivariate concurrent associations or tested the statistical effect of parenting at pretest on externalizing problems at follow-up after adjusting for initial levels of externalizing behavior.

Knowledge on these topics is relevant for planning measures aimed to prevent and reduce externalizing problems.

Two perspectives have been adopted in parenting literature: a dimensional approach focusing on individual dimensions of parental behaviors, such as responsiveness (warmth) and demandingness (control), and a categorial approach that categorizes parents, according to a combination of parenting dimensions, into parenting styles (Baumrind, 1966; Maccoby & Martin, 1983). With regard to central parenting dimensions, high levels of parental *responsiveness* (warmth) can be defined as being accepting, nurturing, supportive, sensitive, and warm while low levels indicate insensitive, unresponsive, and rejecting parental behavior (e.g., Maccoby & Martin, 1983). Different forms of parental *demandingness* may have differing effects on child development: *Behavioral control* has been conceptualized as a set of active parental strategies involving the communication of clear and consistent expectations for appropriate behavior and efforts to monitor the child's behavior related to these expectations (e.g., Akcinar & Baydar, 2014). While behavioral control has often been linked to positive outcomes for the child, *harsh control* (physical or verbal punishment and intrusiveness) has often been related to negative developmental outcomes (e.g., Janssens, Goossens, Van Den Noortgate, Colpin, Verschueren, & Van Leeuwen, 2015). Behavioral and harsh control should be distinguished from *psychological control*. This kind of control is defined as parental attempts to manipulate their children's psychological experiences, for example by using guilt induction, shaming, and conditional loving to pressure their children (Barber, 1996).

Furthermore, research has been conducted on parental *autonomy granting*. This concept emerged as the opposite of psychological control (Schaefer, 1965) and as an aspect of authoritative parenting in families with adolescents (Steinberg, 2001; Steinberg, Lamborn,

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Darling, Mounts, & Dornbusch, 1994). Autonomy granting is defined as parental encouragement of the child's individual expression and decision making, such as allowing the child to make choices about activities and behavior, and encouraging the development of independence (Silk, Kanaya, Morris, & Steinberg, 2003; Steinberg et al., 1994). Silk et al. (2003) showed that psychological control and autonomy granting are distinct constructs rather than opposite poles of a common parenting dimension, and that these constructs are only weakly interrelated. For example, whether the child has some say in family decisions and whether he or she is pushed to think independently are indicators of autonomy granting, while making the child feel guilty in the case of poor grades would be a sign of psychological control (Silk et al., 2003).

In contrast to dimensional approaches to the study of parenting, parenting styles are defined by combinations of parenting dimensions. Based on the work of Baumrind (1966); Maccoby and Martin (1983) distinguished four parenting styles according to the two-dimensional framework of responsiveness/warmth and behavioral control: an authoritative style (high warmth and high behavioral control), an authoritarian style (low warmth and high/harsh control), a permissive style (high warmth and low control), and a neglectful style (low warmth and low control).

Associations of Parenting Dimensions and Styles With Externalizing Problems

Several theoretical models suggest that ineffective parenting contributes to the development of externalizing problem behavior, while other parental behaviors or styles may prevent or reduce externalizing problems. For example, Gottfredson and Hirschi's (1990) theory of crime suggests that parental behavioral control (rule setting, monitoring, and effective discipline) promotes the development of self-control in the child which, again, inhibits externalizing problems. With regard to harsh control, social learning theory (e.g., Bandura, 1977) and coercion theory (Reid et al., 2002) suggest that parents model aggressive behavior of their children when punishing their children in a coercive manner. Coercion theory also emphasizes that parents reinforce externalizing problem behavior when they give the child what he or she wants because the child antagonistically demands it instead of using effective discipline and reinforcing positive behavior. In addition, based on attachment theory, researchers have suggested that insensitive, unresponsive, and rejecting parental behaviors promote an insecure parent-child attachment, which may lead to the perception of other individuals as unreliable and hostile (Michiels, Grietens, Onghena, & Kuppens, 2008). These perceptions may provoke aggressive and norm-breaking behavior within social relationships (Michiels et al., 2008). Similarly, psychological control has been suggested to undermine attachment security, which may promote the development of aggressive and norm-breaking behavior (Soenens, Vansteenkiste, Goossens, Duriez, & Niemiec, 2008). According to the self-determination theory, oppositional defiance may occur when the child's needs for autonomy are not met by overcontrolling or psychologically controlling parents (Soenens, Vansteenkiste, & van Petegem, 2015). Given the suggested negative associations of parental responsiveness and demandingness (behavioral control) with externalizing problems, it could be expected that an authoritative parenting style (parental

warmth plus behavioral control) would be associated with low levels of externalizing problems, while a neglectful parenting style (low warmth plus low behavioral control) should be associated with high levels of aggression and delinquency.

Seven meta-analyses have addressed associations of parenting with externalizing problems in general or with an aspect of these problems in particular. Rothbaum and Weisz (1994) conducted a meta-analysis of 47 studies dealing with the relation between parental behaviors and externalizing behavior in nonclinical samples. They concluded that parental guidance (clarity of rules, $r = -.23$) and approval ($r = -.11$) are associated with low levels of externalizing behavior, while the reverse is true in regards to coercive behaviors, such as physical punishment ($r = .21$). Two meta-analyses by Gershoff (2002) and Gershoff and Grogan-Kaylor (2016) concluded that harsh parenting (corporal punishment) is associated with higher levels of aggression ($r = .18$) and delinquent/antisocial behavior ($r = .21$ and $.20$).

Based on 161 studies on association of parenting with delinquency (including aggressive behavior), Hoeve et al. (2009) reported that an authoritative parenting style ($r = -.19$), parental support ($r = -.19$), behavioral control in general ($r = -.19$), and monitoring in particular ($r = -.26$) show inverse associations with delinquency. In contrast, higher levels of psychological control ($r = .23$), harsh control ("authoritarian control"; $r = .12$), and overprotection ($r = .21$) were associated with higher levels of delinquency. Some analyses were based on small numbers of effect sizes (such as three effect sizes on overprotection and eight effect sizes on authoritative parenting).

Two meta-analyses addressed relational aggression, a subspect of externalizing behavior. Kawabata, Alink, Tseng, van IJzendoorn, and Crick (2011) found small to very small associations of harsh control ($r = .11$ to $.12$) and psychological control ($r = .04$ to $.05$) with relational aggression. Somewhat larger associations of psychological control with relational aggression were identified in the meta-analysis by Kuppens, Laurent, Heyvaert, and Onghena (2013; $r = .17$).

Finally, a meta-analysis of results from longitudinal studies by Ferguson (2013) found a positive association of initial levels of harsh parenting (corporal punishment) with externalizing problems at follow-up ($r = .18$). The strength of the association was reduced when relating initial levels of harsh parenting with change in externalizing problems ($r = .07$).

Although these meta-analyses provided valuable insights, they were limited in addressing some important points: First, with the exception of Ferguson (2013), no analyses were reported on cross-lagged associations between parenting and externalizing problems. Analysis of cross-lagged effects is important as correlative data do not allow for testing whether parenting may have an effect on children's behaviors or vice versa, and ignoring child effects will inflate estimates of the parents' contribution to children's development. From a socialization perspective, parental behaviors (e.g., nurturance, discipline practices) and parenting styles have been considered to shape children's social, emotional, and behavioral competencies and to affect trajectories of behavior problems (e.g., Baumrind, 1966; Steinberg, 2001). However, other theoretical approaches highlighted that problem behaviors and other characteristics of the child also have an effect on the subsequent parental behaviors. For example, Bell's model of bidirectionality in parent-child relations proposes that family members increase control to

maintain each other's behavior within a tolerable range (Bell, 1977). Similarly, coercion theory suggests that dysfunctional parenting and children's problem behaviors reinforce each other (Reid et al., 2002).

Second, the numbers of studies included in the individual analyses were limited, as was the statistical test power of the analysis of main effects and moderating effects. Third, three out of four parenting styles defined by Baumrind (1966) and successors have not been addressed in the previous meta-analyses. Thus, comparisons of the size of associations of externalizing problems with the four parenting styles could not be made. These points are addressed in the present meta-analysis.

Impact of Moderator Variables

We were interested in study characteristics that may moderate the size of association between parenting and externalizing problems of the child. The following moderator variables were considered.

Sample. Externalizing problems and inadequate parental behaviors are less prevalent in community-based (school-based) samples than in clinical and forensic studies (e.g., those comparing children with and without conduct disorders; Berg-Nielsen, Vikan, & Dahl, 2003). Thus, associations of parenting and externalizing problems may be weaker in community-based samples because of restricted variance. Therefore, we tested whether associations of parenting with externalizing problems are weaker in community-based samples than in clinical/forensic samples.

Age of child. On the one hand, associations between parenting and externalizing problems may be strongest in younger children when there are fewer competing socialization agents, such as teachers and peers. On the other hand, the size of correlations between parenting and externalizing problems may become stronger in late childhood and adolescence as a result of cumulative, reciprocal influences of each member of the dyad on the other over time (Reid et al., 2002; Rothbaum & Weisz, 1994). Results of previous meta-analyses are contradictory. While Hoeve et al. (2009) found a weaker association of general parenting with delinquency in older samples, Rothbaum and Weisz (1994) observed that the association of parenting with externalizing problems is stronger in older children and adolescents than in toddlers and preschoolers. The present meta-analysis tested whether some of these results can be replicated in the present meta-analysis.

Child gender. Boys show higher levels of externalizing behaviors than girls. Thus, parenting may have weaker effects on externalizing behavior in girls than in boys because of restricted variance of the outcome variable. While the meta-analysis by Rothbaum and Weisz (1994) found support for this suggestion, two recent meta-analyses could not replicate this finding (Kawabata et al., 2011; Kuppens et al., 2013). We tested whether the moderator effect of child gender that was found by Rothbaum and Weisz (1994) could be replicated.

Parental gender. In most families mothers are the primary caregiver, and children may be more influenced by the caregiver who is most involved in their lives (Rothbaum & Weisz, 1994). Thus, we were interested in whether maternal parenting shows stronger associations with externalizing problems of their offspring than paternal parenting. While Rothbaum and Weisz (1994) found some support for this suggestion, Kuppens et al. (2013) did

not find a moderating effect of gender. Hoeve et al. (2009) observed even stronger negative associations of delinquency with paternal support than with maternal support.

Form of externalizing problems. Broader measures of behavior problems were expected to show stronger associations with parenting dimensions and styles than narrower measures that focus only on aggression or delinquency or even on a subsample of these two kinds of problem behavior (e.g., relational aggression). As parents may find it easier to detect and counteract some problem behaviors compared to others (e.g., overt as compared with covert problem behaviors; Hoeve et al., 2009), broader measures of externalizing problems are more likely to detect effects of parenting dimensions or styles.

Rater. Parental reports on their parenting and the problem behavior of their children are often biased as parents tend to give socially desirable answers and avoid reporting problematic behaviors to a third party (Morsbach & Prinz, 2006). This source of bias could reduce the size of association between parenting and externalizing problems. In fact, Hoeve et al. (2009) found, in part, weaker associations if parental reports on parenting, rather than child reports, are used. The present meta-analysis tested whether this moderator effect can be replicated. The meta-analysis by Kuppens et al. (2013) found stronger effect sizes when information on parenting and externalizing symptoms came from the same source. Thus, we tested whether stronger associations could be found if information on parenting and internalizing problems came from the same source because of shared methods variance.

Quality of the measures. As differences in study findings are often related to methodological differences of the studies included, meta-analysis should empirically examine the relationships between method characteristics and study findings (Lipsey & Wilson, 2001). While measures with low reliability underestimate the size of the associations between variables, restrictions of validity could lead to overestimations as well as underestimations of effect sizes (Hunter & Schmidt, 1994). In our meta-analyses on associations of parenting with academic achievement and internalizing symptoms, we found, in part, stronger associations in studies that provided support for the reliability and validity of their measures (Piquart, 2016). We tested whether the same would be found in the present meta-analysis.

Publication status. Nonsignificant results may be less likely to be published—the so-called “file-drawer problem” (e.g., Lipsey & Wilson, 2001). Thus, the present meta-analysis tested whether unpublished studies report lower effect sizes than published studies. Kawabata et al. (2011) found some evidence for a possible file-drawer problem with regard to one out of five assessed aspects of parenting.

Research Questions

In the present meta-analysis, the selection of parenting dimensions (responsiveness/warmth; demandingness/control) and styles is based on the influential work by Baumrind (1966) and Maccoby and Martin (1983), the recent distinctions of three forms of control (behavioral control, harsh control, and psychological control; Janssens et al., 2015), and the distinction between psychological control and autonomy granting (Silk et al., 2003). The first research question asked whether parental warmth, behavioral control, autonomy granting, and authoritative parenting are associated with

lower levels of externalizing problems and whether the reverse is true for harsh control, psychological control, neglectful, permissive, and authoritarian parenting. The second research question asked whether stronger associations are found in cross-sectional studies than in longitudinal studies relating parenting at first assessment to externalizing problems at follow-up. Effect sizes tend to be smaller in longitudinal studies than in cross-sectional studies because changes in the predictor variable over time lead to a reduction of predictive power of the initial level of this variable, and because concurrent correlations are often based on bidirectional effects of the two assessed variables (Adachi & Willoughby, 2015).

Given the fact that associations between parenting and externalizing problems may be based on parent effects as well as child effects (e.g., Bell, 1977; Reid et al., 2002), the third research question asked whether parenting dimensions and styles predict change in externalizing problems and whether initial levels of externalizing problems predict changes in parenting. The final research question asked whether associations between parenting and externalizing problems vary by sample, child's age, parental gender, aspects of externalizing problems assessed, reporter, quality of the measure, and publication status.

Method

Sample

Studies were identified through electronic databases (Google Scholar, MEDLINE, PSYCINFO, PSYINDEX [an electronic database of psychological literature from German-speaking countries] – search terms: [parenting or child rearing] and [externalizing or delinquen* or aggress* or antisocial]) and cross-referencing. Criteria for inclusion of studies in the present meta-analysis were:

1. The studies assessed parental warmth, behavioral control, harsh control, psychological control, autonomy granting (vs. overprotection), and/or parenting styles defined by Maccoby and Martin (1983).
2. They assessed externalizing problems of the children (e.g., aggressive behavior, delinquency, and sum measures of externalizing problems).
3. Statistical associations between parenting and externalizing problems were reported or could be computed.
4. The mean age of the sample was <20 years, thus including children and teenagers.
5. The studies were completed before August, 2016.

To include studies from different regions of the world, we did not limit the included studies to those written in English. Unpublished studies identified by the literature search (e.g., dissertations) were also included. We identified 3,543 studies. After screening and assessing for eligibility, we were able to include 1,435 studies in the meta-analysis. A flowchart of the search for studies and selected characteristics of the included studies are available online as supplementary material files 1 and 2.

All studies were coded by the author, and approximately 20% were also coded by a graduate student. Differences were resolved by discussion. We entered the number of children or adolescents (intraclass agreement: intraclass coefficient $ICC = .98$), mean age ($ICC = 1.0$), percentage of girls ($ICC = 1.0$), publication status (1 = published, 2 = unpublished; $ICC = 1.0$), sample (1 = clinical/forensic [part/all children scored above the cutoff for externalizing problems or were diagnosed with conduct disorders/oppositional defiant disorders or were convicted of a crime], 0 = nonclinical/nonforensic; $ICC = .98$), rater of parenting (1 = child, 2 = parent, 3 = others/multiinformant; interrater agreement 96%), rater of externalizing problems (1 = child, 2 = parent, 3 = others/multiinformant; interrater agreement 97%), kind of externalizing problems assessed (1 = aggression, 2 = nonaggressive delinquency, 3 = sum of aggressive and delinquent behaviors; interrater agreement 94%), quality of the measures of parenting and externalizing problems (2 = support for validity and reliability provided, 1 = no such support provided; $ICC = .93$), and the size of association between parenting and child outcome; $ICC = .94$).

Bivariate correlations were usually reported in the included articles. In contrast, cross-lagged associations (e.g., partial correlations between parenting at Time 1 and externalizing behavior at Time 2, adjusting for initial levels of externalizing problems at Time 1) usually had to be computed manually based on correlational tables of the individual study.

If associations were provided for several subgroups within the same publication (e.g., for girls and boys), we entered them separately in our analysis. If data from more than one rater and/or for delinquency and aggression were reported, we also entered the effect sizes separately, thus leading to dependent effect sizes. The analysis of dependent effect sizes causes two sources of bias (Hedges, Tipton, & Johnson, 2010): Studies with multiple effect sizes have a larger influence than those with one effect size, and dependent effect sizes may be more similar than could lead to an underestimation of the *SEM* effect size. To avoid the first bias, we weighted the studies in proportion to the number of research results they yield (Rosenthal, 1991, p. 27) and divided the weights of the effect sizes by the number of effect sizes per study. Scamacca, Roberts, and Stuebing (2014) reported that including all dependent effect sizes in the analysis as if they were independent leads to mean effect sizes and 95% confidence intervals (CIs) that are very similar to the averaging of dependent effect sizes within studies and to randomly selecting only one effect size per study. As we did not want to lose important information (e.g., on associations of parenting with delinquency vs. aggressive behavior), we decided to ignore the dependence of some effect sizes. This procedure can lead to conservative results for tests of the difference between average effects of different types, which would be sufficient for rough inferences (Hedges et al., 2010).

Alternatively, the dependence of effect sizes could be statistically modeled using multivariate models or three-level meta-analysis (Hedges et al., 2010; Van den Noortgate, López-López, Marin-Martinez, & Sánchez-Meca, 2015). Unfortunately, we could not apply multivariate models because knowledge of the covariance structure of the effect size estimation errors was lacking in many studies. Van den Noortgate et al. (2015) reported that a three-level meta-analysis works well with two outcomes per study, but more research is needed on the situation in which most studies only report one effect size. As most of the studies of the present

meta-analysis reported only one effect size for a parenting dimension or style, multilevel meta-analysis cannot (yet) be recommended.

Measures

The parenting dimensions and styles were classified into nine categories on the basis of the literature on parenting (Barber, 1996; Hoeve et al., 2009; Janssens et al., 2015; Maccoby & Martin, 1983; Silk et al., 2003) and of the description of the scales in the individual articles (intraclass agreement: 98%). Parental responsiveness/warmth refers to measures of the amount of accepting, nurturing, supportive, sensitive, and/or warm parental behaviors, such as whether the parent shows positive feelings toward his or her child. It was most often assessed with behavioral observations (100 studies), the Children's Report of Parent Behavior Inventory (CRPBI; Schaefer, 1965; 67 studies), the Egna Minnen Beträffande Uppfostran (EMBU; Perris, Jacobsson, Lindstrom, von Knorring, & Perris, 1980; 29 studies), the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979; 25 studies), and related measures (347 studies). Behavior control was coded if the measure assesses whether the parents have clear and consistent expectations to encourage desired child behavior, monitor the child, have knowledge about his or her whereabouts, and work with consequences of undesired behavior that are not aggressive or psychologically controlling. Behavior control was most often assessed with the CRPBI (57 studies), the Alabama Parenting Questionnaire (APQ; Frick, 1991; 47 studies), the Authoritative Parenting Measure (APM; Steinberg et al., 1994; 43 studies), monitoring scales by Kerr and Stattin (2000; 30 studies), and related measures (448 studies). Harsh control was coded if the measure addressed physical punishment (e.g., spanking), harsh verbal punishment (e.g., yelling, shouting), and/or parental intrusiveness. Harsh control was most often assessed with the Parent-Child Conflict Tactics Scales (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998; 49 studies), observations (38 studies), the APQ (31 studies), the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993; 30 studies), and related instruments (345 studies). Psychological control was coded if the measure assessed parental attempts to manipulate children's psychological and emotional experiences by using guilt induction, shaming, and conditional loving. This aspect of parenting was most often measured with Barber's Psychological Control Scale (Barber, 1996; 45 studies), the CRPBI (32 studies), and related scales (68 studies). Measures of parental autonomy granting versus overcontrol assess whether parents encourage the child's individual expression and decision making, such as allowing the child to make choices about activities and behavior, and encouraging the development of independence. These measures included scales from the PBI (25 studies), the EMBU (23 studies), and other scales (77 studies). Finally, measures of parenting styles either classify parents according to their levels of responsiveness and demandingness into the styles defined by Maccoby and Martin (1983) or assess parenting styles as a continuous variable based on information about demandingness and responsiveness (e.g., Buri, 1991). Parenting styles were most often assessed with the Parenting Styles and Dimensions Questionnaire (Robinson, Mandelco, Frost Olsen, & Hart, 1995; 49 studies), the Parental Authority Questionnaire (Buri, 1991; 33 studies), the APM (15 studies), and related instruments (112 stud-

ies). Finally, externalizing problems were most often measured with the Child Behavior Problems Checklist (Achenbach, 1991; 331 studies), the Youth Self-Report (Achenbach, 1991; 131 studies), the Strengths and Difficulties Questionnaire (Goodman, 1997; 47 studies), the Teacher Rating Form (Achenbach, 1991; 43 studies), clinical interviews (39 studies), observations (21 studies), and related instruments (821 studies).

Statistical Integration of the Findings

Calculations for the meta-analysis were performed in five steps, based on standardized procedures outlined by Lipsey and Wilson (2001). Random-effects models and the method of moments were computed that are most adequate if not all sources of heterogeneity between the results of individual studies might be identified (Lipsey & Wilson, 2001).

1. The correlations were transformed using Fisher's r -to- z transformation. Outliers that were more than 2 SD from the mean of the effect sizes were recoded to the value at 2 SD .
2. Weighted mean z -scores and 95% CIs were computed. The significance of the mean was tested by dividing the weighted mean effect size by the standard error of the mean. To compare the mean effect sizes with the effect sizes reported in the single studies, the mean effect sizes were later converted to the original metric of product-moment correlations.
3. Homogeneity of effect sizes was tested by use of the Q statistic.
4. To test the influence of moderator variables, we used an analogue of an analysis of variance and a weighted ordinary least squares regression analysis. In univariate analyses, a significant Q_b score indicates heterogeneity of the effect sizes between the compared conditions. Which conditions differ is tested by comparing the 95% CIs. Differences between two conditions are significant if the CIs of two effect sizes do not overlap (Lipsey & Wilson, 2001).
5. The trim-and-fill algorithm by Duval and Tweedie (2000) was used to check whether the results could have been influenced by a publication bias.

Results

The 1,435 included studies provided data on 1,053,288 children and adolescents with a mean age of 10.70 years ($SD = 4.61$). About 49% of the participants were female ($SD = 24.0$) and 39.9% ($SD = 31.5$) belonged to an ethnic minority. In total, 169 studies were unpublished, 454 studies provided data from longitudinal studies, and 256 studies provided cross-lagged effects.

With regard to the first research question, studies on concurrent associations found that higher levels of parental warmth ($r = -.18$), behavioral control ($r = -.19$), autonomy granting ($r = -.11$), and authoritative parenting ($r = -.16$) were associated with lower levels of externalizing problems (see Table 1). In

Table 1
Associations of Parenting With Externalizing Problems

Associations	Parental warmth				Parental behavioral control				Parental harsh control						
	<i>k</i>	<i>r</i>	95% CI	<i>Z</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>Z</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>Z</i>	<i>Q</i>
Parent ₁ – Extern ₁	1,062	-.18	-.19	-.18	-45.51***	1,130	-.19	-.20	-.18	-35.86***	869	.21	.20	.22	39.45***
Parent ₁ – Extern ₂	368	-.15	-.16	-.13	-21.17***	342	-.17	-.18	-.15	-23.31***	374	.17	.16	.19	25.41***
Parent ₁ – Extern ₁₂	228	-.07	-.08	-.06	-15.68***	214	-.07	-.08	-.06	-10.90***	234	.08	.07	.09	10.44***
Extern ₁ – Parent ₁₂	110	-.06	-.08	-.05	-8.95***	78.20	-.05	-.07	-.03	-5.31***	125	.11	.10	.13	19.38***
															121.43
	Parental psychological control				Parental autonomy granting				Authoritative parenting style						
	<i>k</i>	<i>r</i>	95% CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>t</i>	<i>Q</i>
Parent ₁ – Extern ₁	376	.22	.20	.23	28.11***	329.11	-.11	-.13	-.08	-9.61***	282	-.16	-.17	-.14	-20.13***
Parent ₁ – Extern ₂	100	.19	.16	.22	13.46***	120.91	-.09	-.13	-.04	-4.05***	37	-.13	-.18	-.09	-5.57***
Parent ₁ – Extern ₁₂	57	.06	.03	.10	3.65***	33.58	-.05	-.10	-.01	-2.45*	19	-.07	-.12	-.03	-2.99**
Extern ₁ – Parent ₁₂	28	.09	.03	.14	2.97***	4.34	-.03	-.05	.00	-1.70	5	-.09	-.17	-.01	-2.26*
															.43
	Authoritarian parenting style				Permissive parenting style				Neglectful parenting style						
	<i>k</i>	<i>r</i>	95% CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>t</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>t</i>	<i>Q</i>
Parent ₁ – Extern ₁	295	.16	.14	.18	17.31***	282.83	.216	.08	.06	.10	6.97***	.19	.17	.22	14.34***
Parent ₁ – Extern ₂	57	.14	.09	.19	5.74***	31.74	58	.09	.03	.14	3.13***	.09	.01	.16	2.26*
Parent ₁ – Extern ₁₂	31	.11	.06	.16	4.33***	44.96	27	.06	.00	.12	2.08*	.05	-.14	.24	.56
Extern ₁ – Parent ₁₂	3	.08	-.14	.30	.72	.99	3	.17	-.05	.38	1.51	0			62.01***

Note. Parent₁ = parenting at time 1; Extern₁/Extern₂ = externalizing problems at time 1/time 2; Extern₁₂/Parent₁₂ = change in externalizing problems/parenting between time 1 and time 2; *k* = number of effect sizes included; *r* = effect size (weighted mean correlation coefficient); *Z* = test for significance of *r*; 95% CI = lower and upper limits of 95% confidence interval; *Q* = test for homogeneity of effect sizes.

* $p < .05$. ** $p < .01$. *** $p < .001$.

contrast, harsh control ($r = .21$), psychological control ($r = .22$), as well as an authoritarian ($r = .16$), permissive ($r = .08$), and neglectful parenting style ($r = .19$) were associated more with externalizing problems. According to Cohen (1992), these effect sizes are small or very small.

All concurrent associations were replicated in longitudinal studies that relate parenting at first assessment to externalizing problems at follow-up. Regarding the second research question, the nonoverlap of the 95% CIs indicates that associations of warmth, behavioral control, harsh control, and neglectful parenting with externalizing problems were stronger in cross-sectional studies than in longitudinal studies (see Table 1).

To answer the third research question, we analyzed cross-lagged associations between parenting and externalizing problems. Partial correlation coefficients controlling for initial levels of externalizing problems showed that initial levels of parental warmth ($r = -.07$), behavioral control ($r = -.07$), autonomy granting ($r = -.05$), and authoritative parenting ($r = -.07$) predicted declines in externalizing problems over time (mean time interval: 3.6 years) while harsh control ($r = .08$), psychological control ($r = .06$), authoritarian parenting ($r = .11$), and permissive parenting ($r = .06$) predicted an increase in these problems. In addition, initial levels of externalizing problems predicted declines in parental warmth ($r = -.06$), behavioral control ($r = -.05$), and authoritative parenting ($r = -.09$), as well as increases in harsh control ($r = .11$) and psychological control ($r = .09$). Therefore, associations of externalizing problems with warmth, behavioral control, harsh control, psychological control, and authoritative parenting were bidirectional. Nonetheless, cross-lagged associations were very small (see Table 1).

The final research question addressed the influence of moderating variables on the size of bivariate association between parenting and externalizing problems (combining cross-sectional and longitudinal studies). No moderator analyses were computed for cross-lagged effects because of the limited number of available effect sizes for parenting styles and autonomy granting ($k = 0-31$).

Associations of parental warmth ($\beta = -.16, p < .001$), behavioral control ($\beta = -.16, p < .001$), harsh control ($\beta = .07, p < .05$), psychological control ($\beta = .19, p < .001$), authoritative parenting ($\beta = -.28, p < .001$), and neglectful parenting ($\beta = -.21, p < .05$), with externalizing problems were stronger in older samples. In contrast, associations of authoritarian ($\beta = -.28, p < .001$) and permissive parenting ($\beta = -.23, p < .01$) with externalizing problems were weaker in older samples. We found no moderating effect of child gender ($\beta = -.02$ to $.09, p > .05$).

In the analysis of categorical moderator variables, we found that associations of parental warmth, behavior control, and harsh control were stronger in clinical or forensic samples than in nonclinical samples (see Table 2). Broader measures of behavior problems that include aggressive and delinquent behaviors showed stronger associations with behavior control, harsh control, psychological control, autonomy granting, authoritative as well as authoritarian parenting than narrower measures that focus only on aggressive behaviors or nonaggressive forms of delinquency.

We did not find stronger associations of problem behaviors with maternal as compared with paternal parenting. With weighted ordinary least squares regression analyses, we also checked whether there would be interaction effects of child gender and

parental gender on the size of the association of parenting with externalizing problems. No such effects were found.

Child reports on parental warmth, behavior control, psychological control, and authoritative parenting showed stronger associations with externalizing problems than parental reports. However, the reverse was true for reports on the authoritarian and permissive parenting styles.

Moderating effects of the source of information about externalizing problems were highly inconsistent. Child reports were more strongly correlated with levels of warmth and behavioral control than parental reports as were child reports with authoritative parenting scores compared with reports from persons who are no family members (e.g., peers, teachers). In addition, child and parent reports on externalizing problems showed stronger associations with psychological control than reports from other sources. Furthermore, parental reports on externalizing problems showed stronger associations with levels of harsh control, authoritarian and permissive parenting than child reports and, in part, reports from other sources. Five out of nine parenting behaviors/styles were more strongly related with externalizing problems if reports on parenting and problems came from the same source rather than from different sources.

Associations of parental warmth, harsh control, authoritarian parenting, and permissive parenting with externalizing problems were stronger if studies provided support for the reliability and validity of the parenting measures. However, the opposite was found for associations of authoritative parenting with externalizing problems. In addition, associations of warmth, harsh control, authoritarian parenting, and permissive parenting with externalizing problems were stronger if there was support for the reliability and validity of the measure of externalizing problems.

Comparisons of the results of published and unpublished studies did not provide evidence for a publication bias. Associations of authoritarian parenting with externalizing problems were even stronger in unpublished studies than in published studies (see Table 2). The potential influence of publication bias on the effect size estimates was also examined by using a trim and fill analysis. Fifteen out of 35 effect sizes slightly decreased when a trim and fill analysis was applied, while 7 effect sizes increased (supplementary material file 3). While most statistically significant effect sizes remained significant after applying this procedure, associations of permissive parenting with externalizing symptoms at Time 1 and Time 2 were no longer significant as were associations of permissive parenting with change in externalizing symptoms. In addition, while externalizing problems at first assessment did not predict change in autonomy granting in the original analysis, externalizing problems predicted a significant, very small decrease in autonomy granting after applying the trim and fill procedure.

Discussion

The present meta-analysis analyzed associations of parental behaviors and parenting styles with externalizing problems based on a very large number of empirical studies. It is the first meta-analysis that has analyzed associations of externalizing problems with the four parenting styles defined by Maccoby and Martin (1983) and cross-lagged effects across a broad range of parenting variables. We observed small concurrent and longitudinal bivariate associations of the assessed parenting dimensions and most par-

Table 2
Influences of Categorical Moderators on the Association Between Parenting and Externalizing Problems

Moderators	Warmth					Behavioral control					Harsh control				
	<i>k</i>	<i>r</i>	95% CI	<i>Z</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>Z</i>	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>Z</i>	<i>Q</i>
Sample					6.35*					6.68**					24.28***
Nonclinical	1,292	-.17	-.18	-.17	-48.02***	1081.45	1,365	-.18	-.19	-41.49***	1,185	.20	.19	.21	48.75***
Clinical/forensic	134	-.21	-.24	-.18	-15.22***	148.44	101	-.23	-.27	-12.66***	54	.30	.26	.34	15.04***
Form of behavior problems					3.71					21.33***					8.52*
Aggression	299	-.16	-.18	-.15	-22.26***	248.30	226	-.15	-.17	-13.96***	355	.19	.17	.20	25.06***
Delinquency	210	-.18	-.20	-.17	-22.25***	204.22	406	-.21	-.22	-26.32***	160	.18	.16	.21	15.37***
Sum externalizing	920	-.18	-.19	-.17	-39.39***	782.39	838	-.18	-.20	-32.61***	726	.21	.20	.22	41.50***
Target parent					.12					1.51					.61
Mothers	625	-.17	-.18	-.16	-32.40***	557.30	446	-.16	-.18	-20.86***	524	.21	.20	.22	35.91***
Fathers	302	-.18	-.19	-.16	-22.23***	242.95	176	-.15	-.17	-11.40***	197	.20	.18	.22	18.79***
Reporter: Parenting					21.59***					26.88***					.44
Child	754	-.19	-.20	-.18	-41.93***	671.22	827	-.20	-.21	-36.36***	338	.21	.19	.22	27.59***
Parent	354	-.15	-.17	-.14	-21.77***	332.74	454	-.15	-.17	-19.23***	729	.20	.19	.21	38.05***
Other/mixed	322	-.16	-.18	-.14	-19.24***	233.52	193	-.20	-.22	-15.91***	181	.21	.18	.23	19.41***
Reporter: Externalizing problems					10.76**					6.52*					28.03***
Child	668	-.19	-.20	-.18	-39.09***	561.03	834	-.19	-.20	-35.32***	301	.19	.17	.20	25.05***
Parent	443	-.17	-.18	-.15	-24.76***	380.26	387	-.16	-.18	-18.44***	615	.22	.21	.23	39.32***
Other/mixed	330	-.16	-.18	-.15	-20.84***	298.98	254	-.19	-.21	-17.99***	332	.18	.16	.19	22.89***
Mono-informant bias					44.21***					33.51***					29.09***
No	554	-.14	-.15	-.13	-23.25***	392.57	433	-.14	-.16	-16.28***	447	.17	.16	.19	24.74***
Yes	768	-.19	-.20	-.18	43.38***	743.25	921	-.20	-.21	-38.55***	693	.22	.21	.23	42.63***
Quality of parenting measure					41.75***					.62					22.73***
Low	626	-.15	-.14	-.16	-29.69***	494.72	720	-.19	-.20	-31.85***	587	.18	.17	.19	33.60***
High	798	-.20	-.21	-.19	-42.06***	727.84	738	-.18	-.19	-29.13***	642	.22	.21	.23	37.90***
Quality of measure of externalizing problems					18.19***					1.55					26.21***
Low	294	-.15	-.16	-.14	-21.96***	290.97	493	-.18	-.19	-16.10***	257	.17	.15	.18	21.06***
High	1,130	-.18	-.19	-.18	-45.74***	940.63	970	-.19	-.20	-34.66***	974	.21	.20	.22	46.54***
Publication status					1.16					.14					2.45
Unpublished	173	.17	.19	.14	15.92***	125.10	186	-.18	-.20	-14.23***	138	.18	.15	.21	13.06***
Published	1,257	.18	.18	.17	47.77***	1110.63	1,293	-.19	-.19	-40.92***	1,105	.20	.120	.21	48.77***

Table 2 (continued)

Moderators	Psychological control				Autonomy granting				Authoritative parenting						
	k	r	95% CI	Z	Q	k	r	95% CI	Z	Q	k	r	95% CI	Z	Q
Sample					1.08					.77					1.63
Nonclinical	474	.21	.20	.23	32.14***	386.97	-.10	-.13	-.07	-7.35***	205	-.10	-.13	-.07	255.64
Clinical/forensic	13	.22	.14	.30	5.25***	6.91	-.13	-.18	-.07	-4.50***	58	-.13	-.18	-.07	32.33***
Form of behavior problems						10.50**				7.26*					12.71**
Aggression	168	.18	.16	.21	15.23***	111.47***	-.10	-.15	-.05	-3.86***	60	-.10	-.15	-.05	88.11
Delinquency	55	.21	.18	.24	14.01***	74.24	-.06	-.10	-.01	-2.61**	70	-.06	-.10	-.01	8.80***
Sum externalizing	253	.23	.21	.25	25.89***	206.90	-.14	-.17	-.10	-7.88***	132	-.14	-.17	-.10	40.08
										192.10	170	-.18	-.20	-.16	160.67
Target parent					2.48					1.17					1.24
Mothers	199	.22	.20	.24	22.09***	177.91	-.11	-.16	-.07	-5.00***	96	-.11	-.16	-.11	105.73
Fathers	123	.20	.17	.22	15.37***	79.51	-.15	-.20	-.10	-5.44***	63	-.15	-.20	-.13	32.83
Reporter: Parenting						19.36***				2.93					8.75*
Child	296	.23	.21	.24	29.06***	238.39	-.11	-.14	-.09	-8.23***	202	-.11	-.14	-.15	163.03
Parent	156	.17	.14	.19	13.44***	126.69	-.06	-.12	.01	-1.76	42	-.06	-.12	-.15	109.90
Other/mixed	24	.25	.21	.30	9.60***	22.07	-.13	-.22	-.04	-2.74**	19	-.13	-.20	-.14	16.19
Reporter: Externalizing problems						16.42***				3.42					12.44***
Child	245	.23	.21	.24	26.31***	205.34	-.11	-.14	-.08	-6.76***	142	-.11	-.14	-.19	160.65
Parent	110	.23	.20	.25	16.17***	88.49	-.07	-.12	-.02	-2.61*	62	-.07	-.12	-.11	65.89
Other/mixed	121	.16	.13	.19	11.20***	84.37	-.13	-.18	-.08	-5.12***	59	-.13	-.10	-.14	57.06
Mono-informant bias						14.83***				3.11					9.95***
No	187	.18	.16	.20	15.53***	116.04	-.15	-.19	-.10	-6.56***	81	-.15	-.14	-.08	66.55
Yes	256	.23	.22	.24	27.99***	242.32	-.09	-.11	-.06	-5.73***	175	-.09	-.16	-.15	205.07
Quality of parenting measure						3.33				1.51					8.53**
Low	95	.19	.16	.22	12.53***	78.71	-.08	-.13	-.03	-3.42***	64	-.08	-.13	-.16	95.48
High	378	.22	.20	.23	30.11***	311.92	-.11	-.14	-.09	-7.99***	199	-.11	-.14	-.12	186.69
Quality of measure of externalizing problems						2.15				2.08					.11
Low	119	.20	.17	.22	15.10***	129.36	-.07	-.12	-.02	-2.91**	49	-.07	-.12	-.13	97.32
High	341	.22	.20	.23	28.64***	253.57	-.12	-.14	-.09	-8.28***	210	-.12	-.15	-.13	180.67
Publication status						.38				.69					.97
Unpublished	59	.23	.19	.26	11.36***	36.21	-.08	-.14	-.02	-2.70**	45	-.08	-.17	-.10	45.37
Published	417	.21	.20	.23	30.55***	357.85	-.11	-.14	-.08	-8.19***	218	-.11	-.16	-.14	243.49
										250.38	263				(table continues)

(table continues)

Table 2 (continued)

Moderators	Authoritarian parenting				Permissive parenting				Neglectful parenting			
	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>
Sample	333	.16	.14	.18	261	.08	.06	.11	101	.18	.15	.21
Nonclinical	19	.17	.09	.23	13	.04	-.05	.13	9	.16	.05	.27
Clinical/forensic												
Form of behavior problems												
Aggression	126	.16	.13	.19	123	.08	.04	.11	21	.15	.09	.20
Delinquency	53	.10	.06	.14	41	.05	.01	.10	35	.15	.11	.20
Sum externalizing	172	.18	.16	.21	109	.10	.07	.14	53	.23	.19	.26
Target parent												
Mothers	119	.20	.17	.23	97	.12	.08	.15	33	.16	.10	.21
Fathers	65	.21	.17	.24	41	.10	.05	.16	19	.21	.14	.28
Reporter: Parenting												
Child	177	.12	.10	.14	138	.04	.02	.07	97	.18	.16	.21
Parent	159	.23	.20	.25	126	.16	.12	.19	8	.17	.07	.27
Other/mixed	16	.16	.08	.24	10	.08	-.04	.19	5	.18	.05	.30
Reporter: Externalizing problems												
Child	170	.11	.09	.13	133	.05	.02	.08	78	.18	.15	.21
Parent	78	.25	.22	.29	70	.16	.12	.20	10	.20	.12	.28
Other/mixed	104	.19	.16	.23	71	.09	.04	.14	23	.19	.12	.25
Mono-informant bias												
No	112	.18	.15	.22	85	.07	.03	.12	21	.16	.09	.23
Yes	229	.15	.13	.17	186	.08	.06	.11	80	.18	.15	.21
Quality of parenting measure												
Low	113	.11	.09	.14	81	.01	-.02	.05	70	.17	.14	.20
High	237	.19	.17	.21	192	.13	.10	.15	39	.21	.17	.25
Quality of measure of externalizing problems												
Low	104	.09	.06	.12	79	.02	-.01	.06	58	.19	.15	.22
High	243	.20	.18	.22	190	.12	.09	.15	48	.18	.14	.22
Publication status												
Unpublished	57	.20	.16	.24	37	.13	.08	.19	8	.22	.13	.30
Published	295	.15	.13	.17	238	.07	.05	.10	102	.18	.15	.21

Note. *k* = number of effect sizes included; *r* = effect size (weighted mean correlation coefficient); *Z* = test for significance of *r*; 95% CI = lower and upper limits of 95% confidence interval; *Q* = test for homogeneity of effect sizes.

* $p < .05$. ** $p < .01$. *** $p < .001$.

enting styles with externalizing problems. The strongest bivariate associations were observed for psychological control and harsh control, thus indicating that these dimensions in particular might be relevant for preventing and reducing externalizing problems in children and adolescents. Parental warmth, behavior control, harsh control, psychological control, autonomy granting as well as authoritative, authoritarian, and permissive parenting predicted change in externalizing problems over time, although these associations proved to be very small. In addition, associations of externalizing problems with parental warmth, behavioral control, harsh control, psychological control, and authoritative parenting were found to be bidirectional. Furthermore, moderating effects of sampling, child's age, kind of dependent variable, rater of parenting and externalizing problems, quality of measures, and publication status were identified. Because some of our results are similar to those of previous meta-analyses (e.g., Hoeve et al., 2009) we put the main emphasis of our discussion on new results.

While—with the exception of Ferguson (2013)—previous meta-analyses addressed only concurrent associations of parenting with externalizing problems, we also analyzed longitudinal associations in general and cross-lagged associations in particular. As concurrent bivariate associations could be based on effects of parenting on the child as well as on effects of the child on parenting (e.g., Bell, 1977), longitudinal data provide deeper insights in the direction of the effects. When initial problem levels were controlled for, eight out of nine aspects of parenting predicted change in externalizing problems over time, and seven effect sizes can be interpreted as very small (Cohen, 1992). Thus, readers may ask whether the observed effects of parenting on change in externalizing behavior are of practical relevance. First, we have to be aware that the analyzed effects of parenting on change in externalizing problems ignore the effect that parenting may have had before the first assessment of parental behaviors. Longitudinal studies with more time points could identify accumulating effects of parenting. Second, the combination of different behaviors of one parent and of parenting behaviors and styles of mothers and fathers could be expected to explain more variance than the present focus on single aspects of behavior of the individual parent (Berkien, Louwerse, Verhulst, & van der Ende, 2012). Third, the present meta-analysis analyzed average effects of parenting styles and dimensions. Effects of parenting tend to be stronger for some children than for others as children differ in their susceptibility to parenting influences, depending on their genes, temperament, and broader environments. For example, Bakermans-Kranenburg, and van IJzendoorn (2006) found an effect of maternal sensitivity on externalizing problems of their children only if the child carried the Dopamine receptor D₄ 7-repeat allele. Furthermore, Beyers, Bates, Pettit, and Dodge (2003) found stronger associations of parental monitoring with externalizing problems if the families lived in neighborhoods with more residential instability. Thus, although average effects of individual parenting dimensions and styles on change in externalizing problems are very small in a statistical sense, effects of parenting are of practical relevance.

The present meta-analysis provides support for bidirectional models of associations between the parent–child relationship and externalizing problems of the child (Bell, 1977; Reid et al., 2002). Five out of nine associations of parenting (warmth, behavioral control, harsh control, psychological control, and authoritative

parenting style) with externalizing problems were bidirectional, while three analyses found only evidence for “parent effects” (autonomy granting, authoritarian and permissive parenting) on externalizing problems. Note that the term parent effect is used in a statistical rather than causal sense, as causal relations can only be tested in experiments. The identified child effects on change in parenting indicate that parents tend to respond to externalizing problems by increasing harsh control and psychological control (that could, again, increase future externalizing problems) and/or by raising their tolerance level for deviant behavior (decreasing behavioral control and authoritative parenting). Coercion theory indicates that the perceived lack of success of harsh and/or psychological control attempts finally leads to a decrease in parental control attempts (Reid et al., 2002). Nonetheless, as the average child effects were very small, many parents seem not to respond to externalizing problems of their children by decreasing desirable and increasing undesirable forms of parenting.

An important question of meta-analyses and systematic reviews is whether the reported results are robust and valid: The number of included studies of the present meta-analysis is about nine times larger than the previously largest meta-analysis in that field (Hoeve et al., 2009); thus, increasing the robustness of the reported effects. A common threat to the validity of meta-analytic results is the file-drawer problem: Included published research reports may overestimate the true effect sizes if journals prefer to accept articles that report strong significant associations over publications with nonsignificant or small effects (Lipsey & Wilson, 2001). Comparisons of the results of published and unpublished studies as well as the trim and fill procedure (Duval & Tweedie, 2000) indicate that the file drawer problem was not a serious problem in most of our analyses. However, results on permissive parenting were contradictory. Associations of this parenting style with externalizing problems were lost in the trim and fill procedure while the explicit comparison of published and unpublished studies showed even a slightly stronger effect size in unpublished than in published work. The trim and fill procedure is based on the addition of studies to the funnel plot so that it becomes symmetrical (Duval & Tweedie, 2000). It does not take into account reasons for funnel plot asymmetry other than publication bias. Seven effect sizes of the present meta-analysis slightly increased after applying the trim and fill procedure that could not be based on a classical file-drawer problem (Lipsey & Wilson, 2001). Thus, factors other than publication bias probably contributed to the observed funnel plot asymmetry. Given the contradictory findings, our results on associations of permissive parenting with externalizing problems have to be interpreted with caution.

Moderator effect of sampling (clinical/forensic vs. school-based), form of problem behavior (sum measures vs. aggressive or delinquent behavior), source of information about parenting, and quality of the measures were in line with our expectations and, in part, with previous meta-analyses and will, therefore, not be further discussed. Effects of the source of information about externalizing problems were unsystematic and will also not be discussed here. As previous meta-analyses reported inconsistent moderator effects of child age and parental gender, we want to discuss our results on these moderators.

Similar to the meta-analysis by Rothbaum and Weisz (1994) and in contrast to Hoeve et al. (2009), we found that many associations of the assessed parenting dimensions and styles with externalizing problems were stronger in older samples. Although it has been suggested that parental influences decline with the increasing age of the child, there is increasing evidence that parents remain important socialization agents of their adolescent children (Harter, 2008). The observed stronger associations of parenting with externalizing symptoms in older samples may, at least in part, be because of the fact that externalizing problem behaviors become more common in adolescence, which provides more opportunities and needs for counteracting these behaviors (Moffitt, Caspi, Rutter, & Silva, 2001). With increasing age, adolescents also evaluate the behaviors of their parents more critically (Levpušček, 2006) that could increase the negative effects of problematic parental behaviors, such as harsh or psychological control.

In line with Kawabata et al. (2011) and Kuppens et al. (2013), we did not find moderator effects of child gender. Thus, observed higher levels of externalizing problems in boys than girls (Moffitt et al., 2001) cannot be explained by differential effects of parenting. Other factors may explain gender differences in externalizing behavior, such as higher levels of risk factors and/or lower levels of protective factors in boys than girls (Moffitt et al., 2001).

We had expected that maternal parenting would show stronger associations with externalizing problems than paternal parenting because children may be more influenced by the caregiver who is most involved in their lives. In contrast to Rothbaum and Weisz (1994) and Hoeve et al. (2009) and in line with Kuppens et al. (2013), we observed similar associations of maternal and paternal parenting behaviors/styles with externalizing problems. Although fathers tend to have more distant relationships with their children compared with mothers (Lewis & Lamb, 2003), mothers and fathers tend to show similar parenting behaviors both according to their own reports and child reports (Bögels & van Melick, 2004). In addition, selection effects may play a role in studies on parental reports as fathers are less likely to participate in parenting research than mothers (Lewis & Lamb, 2003), and participating fathers may be more involved and influential in child rearing than nonparticipating fathers.

Limitations and Conclusions

Several limitations of the present meta-analysis have to be mentioned. First, despite the very large number of included studies, limited numbers of studies were available on cross-lagged associations of autonomy granting and parenting styles with externalizing behavior. More bidirectional effects might be identified if more studies on cross-lagged associations of autonomy granting and parenting styles with externalizing problems become available, and the statistical test power increases. Although longitudinal and cross-lagged analyses in particular offer some insight into the direction of effects, they do not allow for analyzing causal relations. Second, the selection of the assessed parenting dimensions and styles was mainly based on the work of Baumrind (1966) and successors (e.g., Janssens et al., 2015; Maccoby & Martin, 1983). Some parenting scales assess additional dimensions such as verbosity (Arnold et al.,

1993) that were not included in our meta-analysis. In addition, some included parenting dimensions could be further divided into subdimensions (e.g., behavioral control in different forms of monitoring, rule setting, consistency of discipline etc.). However, Hoeve et al. (2009) had found that most subdimensions showed similar associations with delinquent behavior. Third, although data were excluded if the measure of parenting could not be categorized into one of the selected dimensions or styles, minor overlap of item contents of the measures of different forms of control could not be avoided. Fourth, we had to restrict the number of moderator variables and did not, for example, compare different ethnic groups. Fifth, as many moderator variables consisted of several categories and information on individual moderators was lacking in a number of the studies, we did not compute multivariate analyses of moderator variables. Finally, we did not analyze the interplay of maternal and paternal parenting.

Despite these limitations, several conclusions can be drawn. First, the present meta-analysis indicates that practitioners and researchers should expect only small to very small effects of the assessed parenting dimensions/styles on change in externalizing problems. Second, analyses of cross-lagged associations indicate that correlations of parenting with externalizing problems cannot exclusively be interpreted as effects of parenting on the child outcome. Associations are in most cases bidirectional. Third, our results indicate that parenting is more important for externalizing problems in clinical and forensic samples that already show high levels of these problem behaviors. Fourth, as validated measures of parenting and externalizing problems tend to produce stronger effect sizes than other measures, we recommend the use of these validated measures. Fifth, given the fact that psychological and harsh control showed the strongest associations with externalizing problems, avoiding or reducing these forms of control could be a focus of parenting interventions aimed at reducing externalizing problems. Parenting trainings tend to produce, on average, small to moderate effects on externalizing problems of young people (McCart, Priester, Davies, & Azen, 2006). Addressing parenting behaviors that show the strongest associations with externalizing problems might further increase the effect of these interventions.

Finally regarding future research needs, experimental studies are recommended to test causal effects of parenting on change in externalizing problems. For example, increases in authoritative parenting of participants of a randomized controlled parenting training trial have been found to explain declines in adolescent delinquency (Kausar & Pinquart, under review). More research is also recommended on variables that mediate the effect of parenting styles and parental behaviors on externalizing problems.

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Received May 6, 2016

Revision received December 2, 2016

Accepted December 6, 2016 ■

Do the Associations of Parenting Styles With Behavior Problems and Academic Achievement Vary by Culture? Results From a Meta-Analysis

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Objective: The study tested whether associations of parenting styles with internalizing problems, externalizing problems, and academic achievement vary between ethnic groups in western countries, between different regions of the globe, and by level of collectivism/individualism of individual countries.

Method: A systematic search in electronic databases and cross referencing identified 428 studies that were included in the random-effects meta-analysis. **Results:** More ethnic and regional similarities than differences were identified. In western countries, associations of authoritative parenting with academic achievement were stronger in non-Hispanic, White families than in Asian minorities. In these countries, associations of authoritarian parenting with academic achievement were less negative in Hispanic families than in non-Hispanic, White families. Authoritative parenting was associated with at least 1 positive child outcome and authoritarian parenting was associated with at least 1 negative outcome in all regions of the globe, with some regional variation. Finally, associations of authoritarian parenting with child outcomes were weaker in countries with a higher individualism score, as were associations of authoritative parenting with academic performance. **Conclusions:** Parents across the globe could be recommended to behave authoritatively, although authoritarian and permissive parenting is, to some extent, tolerable in a few cultural contexts.

Keywords: parenting style, academic achievement, internalizing problems, externalizing problems

Supplemental materials: <http://dx.doi.org/10.1037/cdp0000149.supp>

Over the last decades, hundreds of studies have analyzed aspects of parental behavior that might promote the psychological health and academic achievement of children and adolescents, and their positive development in general (Hoeve et al., 2009; Pinquart, 2016, in press a, in press b). Based on the work of Baumrind (1966); Maccoby and Martin (1983) defined four parenting styles according to the two-dimensional framework of responsiveness/warmth and behavioral control: an authoritative style (high warmth and high control), an authoritarian style (low warmth and high control), a permissive style (high warmth and low control), and a neglectful style (low warmth and low control). Other researchers added that—in contrast to authoritarian parents—authoritative parents encourage and permit their children to develop their own opinions and beliefs (autonomy granting; Steinberg, 2001).

Most of the research on the parents' role for children's psychological and behavioral outcomes has been conducted among families from the United States and other western countries. These studies indicated that children from authoritative parents show fewer internalizing and externalizing symptoms, as well as better academic performance than children from other families, although the average effect sizes tend to be small (Pinquart, 2016, in press

a, in press b). In contrast, authoritarian, neglectful, and, in part, permissive parenting styles are associated with elevated levels of symptoms and poorer academic performance (Pinquart, 2016, in press a, in press b).

Associations of parenting styles with child outcomes may vary, to some extent, between cultural contexts, such as ethnic groups within countries and different regions of the globe. Cross-cultural researchers have emphasized that socialization goals and practices vary across cultures because different qualities and outcomes in children are valued and emphasized (e.g., Chao, 1994, 2000, 2001). In addition, the same parental behavior and parenting style may be interpreted differently (e.g., as more or less adequate) depending upon the cultural meaning of this behavior or style in the particular cultural group (e.g., Chao, 2000, 2001; Deater-Deckard, Dodge, & Sorbring, 2005). Cultural differences in the normativeness or prevalence of certain parenting practices or styles might moderate the socialization function of such practices/styles. For example, Lansford et al. (2005) found weaker adverse effects of corporal punishment on children's adjustment in cultures with higher prevalence of this practice. Dwairy, Achoui, Abouse-rie, and Farah (2006) suggested the inconsistency hypothesis—claiming that a parenting style will not have positive effects or even negative effects on child outcomes if it is not consistent with the expectations of the sociocultural environment.

Chao (1994) suggested that Baumrind's parenting styles may not be culturally relevant in Asian and Asian American families, as parental strictness and warmth have a different meaning in those contexts: For Asians, some aspects of parental strictness may be equated with parental concern, caring, and involvement, while

This article was published Online First April 10, 2017.

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western families tend to associate authoritarian control with hostility and rejection. In addition, responsiveness of Asian parents could be more accurately described as involvement and support rather than as praising, hugging, and kissing the child (see also Chao & Tseng, 2002). Nonetheless, comparative studies showed that Baumrind's parenting styles can be meaningfully identified in non-western countries with adequate measurement invariance, such as in China (Leung, Lau, & Lam, 1998; Wu et al., 2002).

Observed Differences Between Ethnic Groups in Western Countries

Results of individual studies are inconsistent regarding whether associations of parenting styles with child outcomes do or do not differ between ethnic groups within western countries. For example, in a study from the United States, Steinberg, Mounts, Lamborn, and Dornbusch (1991) observed that the associations of authoritative parenting with internalizing symptoms and delinquency did not vary between ethnic groups. In contrast, associations of authoritative parenting with academic achievement were more positive in non-Hispanic, White adolescents than in African American and Asian American adolescents. Similarly, Chao (2001) found that the authoritative style showed a stronger positive association with academic achievement in European American families than in first-generation Chinese immigrants living in the United States.

Regional Differences

In a cross-national study, Leung et al. (1998) found authoritative parenting to be associated with better academic performance in students from Australia and the United States, but not in students from Hong Kong. A statistically significant negative correlation of authoritarian parenting with academic achievement was only observed in the U.S. sample.

In contrast to Leung et al. (1998), Chen, Dong, and Zhou (1997) found an authoritative parenting style to be associated with better academic performance in students from Beijing, China, while authoritarian parenting was associated with worse performance in school. In contrast to research from western countries (e.g., Leung et al., 1998; Steinberg et al., 1991), some studies with Arab families did not find that authoritarian parenting is associated with elevated psychological distress (Dwairy, 2004a; Dwairy & Menshar, 2006), although another study found a negative association in a subgroup of Arab children (gifted as compared to nongifted students; Dwairy, 2004b).

While studies from the United States indicate that children of permissive parents tend to show more adjustment problems and less academic success than children of authoritative parents (e.g., Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994), some researchers from Southern Europe and Latin America reported that permissive parenting is associated with the same or even better psychological adjustment than authoritative parenting, perhaps as a consequence of the emphasis placed on affection and egalitarian relations in these countries (e.g., Gracia, Garcia, & Lila, 2008). To our knowledge, a neglectful parenting style has not been considered as culturally accepted in any region of the globe. Nonetheless, while larger numbers of studies found higher levels of behavior problems and less academic success in children of neglectful

parents (e.g., Steinberg et al., 1994), a Turkish study by Akcinar and Baydar (2014) found the lowest level of externalizing problems if the observed behavior of mothers of 3-year-old children was characterized by the combination of low warmth and low behavioral control (indicating a neglectful parenting style).

The Role of Collectivism/Individualism

The level of collectivism/individualism characterizes the degree to which members of a society are integrated into groups. The ties between individuals are loose in individualist societies and individuals are expected to look after themselves and their immediate family. In collectivist societies, individuals are integrated into strong, cohesive in-groups (e.g., extended families with uncles, aunts, and grandparents) in which members protect each other in exchange for unquestioning loyalty (Hofstede, Hofstede, & Minkow, 2010).

Applying the cultural inconsistency hypothesis to the authoritarian parenting style, Dwairy et al. (2006) stated that in collectivist cultures, authoritarian parenting would only have minor or negligible negative influences on children's development because of the style being culturally consistent, but would have negative effects in individualist western countries. Similarly, Rudy and Grusec (2001) stated that authoritarian parenting goals, such as obedience and respect for authority, are more normative in collectivist societies or groups, which also affects parenting practices and their effects. In fact, parental endorsement of collectivistic values predicted the use of authoritarian parenting in their study (Rudy & Grusec, 2001). In collectivist societies or groups, individuals must learn to inhibit the expression of their own wants and needs, and to attend to the needs of others in the in-group. Authoritarian parenting, which requires obedience from children without expression of their own point of view, is suggested to promote the development of these qualities (Grusec, Rudy, & Martini, 1997). Thus, an authoritarian parenting style may have fewer negative effects and even some positive effects in collectivist societies. In contrast, authoritarian parenting would not be motivated by the instilling of values of respect for the in-group in individualistic societies but may instead reflect negative attitudes and feelings toward the child. These negative parental attitudes or feelings contribute to the negative effects of this parenting style on children from individualist societies. Rudy and Grusec (2001) further concluded that authoritative parenting would only be the most effective parenting style in transmitting values in individualist societies because, in this context, it is important for individuals to assert themselves and actively pursue their own wishes and needs. As the promotion of autonomy is an important aspect of authoritative parenting (Steinberg, 2001), this parenting style encourages self-assertion and other characteristics that are valued in individualistic societies (Rudy & Grusec, 2001).

Up to now, only two narrative reviews have addressed cultural similarities and differences in the associations of parenting styles with child outcomes (Sangawi, Adams, & Reissland, 2015; Sorkhabi, 2005). Sorkhabi (2005) reviewed 19 studies on associations of parenting styles with heterogeneous child outcomes (e.g., academic achievement, psychological adjustment, and self-esteem). The author noted cultural variation in the link between parenting styles and child outcomes in some studies, while other studies found similar associations in collectivist and individualist cultures.

As the former rather than the latter results may have been affected by mono-informant bias, *Sorkhabi (2005)* concluded that the results on cultural similarities are more trustworthy, and parenting styles may have similar functions in both cultures. *Sangawi et al. (2015)* reviewed studies on the association of parenting styles and dimensions with behavior problems of 6- to 12-year-old children. The authors concluded that the impact of parenting styles on behavior problems may be culturally specific, particularly for African and Chinese children (p. 176). However, four of their five reviewed studies on parenting styles (from China, Iran, Spain, and the United States) found a positive association of authoritarian parenting with behavior problems and a negative association of authoritative parenting with these problems. Results on authoritative parenting had not been reported in the Spanish study, and the only study that did not find a positive association of authoritarian parenting with a sum measure of internalizing, externalizing, and learning problems had been conducted in the United States with mainly White families (*Kaufmann et al., 2000*). In addition, *Sangawi et al. (2015)* did not provide any data on cultural differences in the association of permissive and neglectful parenting with behavior problems. Thus, their conclusions about cultural differences were not well supported by the cited studies. In summary, available narrative reviews had some shortcomings as they (a) included a very limited number of studies on associations of parenting styles with child outcomes, (b) did not explicitly test for cultural differences in the association between these variables, and (c) could not prove whether the results of individual studies vary by the level of collectivism/individualism.

Research Questions

Given the heterogeneity of the results of the individual studies and shortcomings of the available narrative reviews, we conducted meta-analyses to integrate the available results. Meta-analyses compute weighted mean effects across the available studies that are more robust than the results of individual studies. In addition, they test whether the variations between the results of the individual studies are statistically significant or whether the between-study variabilities could be explained by chance (*Lipsey & Wilson, 2001*). We focused on three correlates of parenting styles that have often been assessed in the available literature—internalizing problems (such as anxiety and depression), externalizing problems (aggressive and delinquent behavior), and academic achievement (grades or scores on achievement tests).

The first research question focuses on within-country ethnic differences in the associations of parenting styles with the three child outcomes in families from western countries. On average, children of authoritative parents tend to show fewer internalizing and externalizing symptoms as well as better academic performance than other children while children of authoritarian parents tend to show more externalizing and internalizing problems and poorer academic performance (*Pinquart, 2016, in press a, in press b; Steinberg et al., 1991*). Authoritarian parenting tends to be more prevalent in African American, Asian American, and Hispanic families than in families with a European ethnic background, while the reverse is true with regard to authoritative parenting (e.g., *Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987*). According to the cultural inconsistency hypothesis (*Dwairy et al., 2006*), parenting styles should have more positive effects if they

are more common and more culturally accepted. Thus, we ask in our first research question whether negative associations of authoritative parenting with externalizing and internalizing symptoms, as well as positive associations of this parenting style with academic achievement, would be stronger in non-Hispanic, White families than in the Hispanic families, as well as families with African (e.g., African American, African Canadian), and Asian ethnic ethnicities (e.g., Chinese American). We also explore whether the associations of authoritarian parenting with higher levels of internalizing and externalizing problems and lower academic achievement would be stronger in non-Hispanic Whites than in the other three ethnic groups. In addition, we test whether associations of permissive and neglectful parenting with the three child outcomes differ between ethnic groups. No directional hypothesis could be stated for these associations.

The second research question addresses between-country (cross-national) comparisons. Authoritative parenting tends to be more prevalent in western, individualist countries than in non-western, collectivist countries, while the reverse is true with regard to authoritarian parenting (e.g., *Su & Hynie, 2011; Yang, Kim, Laroche, & Lee, 2014*). According to the cultural inconsistency hypothesis (*Dwairy et al., 2006*), these differences should be associated with weaker positive effects of authoritative parenting and weaker negative effects or even positive effects of authoritarian parenting in the more collectivist countries. *Rudy and Grusec (2001)* suggested that these different effects would be based on cultural differences in socialization goals as the respect for authority and the promotion of compliance would be more valued in collectivist rather than individualist countries, and authoritarian parenting would be an adequate strategy for promoting compliance and respect for authority. In contrast, authoritative parenting would be more normative and effective in individualist, western countries because it promotes the development of self-reliance and autonomy (*Rudy & Grusec, 2001; Steinberg, 1991*).

Chao (1994, 2001) highlighted that some effects of parenting styles may be specific for particular regions of the globe, such as Asian families. Thus, comparing western, individualist and non-western, collectivist countries would not be sufficiently differentiated. Several attempts to categorize regions according to common cultural roots have been published (*Huntington, 1996; Kolb, 1962; Spencer & Thomas, 1973*). Based on these authors' publications, the present meta-analysis compares results from 10 regions: Northern America (Canada, United States), Central/Southern America (Latin America), western Europe (all European countries that have not been part of the former communist block), Eastern Europe/Russia, Arab-Muslim countries (North Africa, the Arabian Peninsula, and Iran, Turkey), Sub Sahara Africa, Australia/New Zealand, East Asia (China, Japan, Singapore, and Taiwan), South Asia (India, Bangladesh, and Pakistan), and South East Asia (e.g., Cambodia, Indonesia, Thailand, and Vietnam). The frontiers of these regions are, in part, permeable as, for example, some former communist Eastern European countries have become members of the European Union. The second research question is whether the size of correlations of authoritarian and authoritative parenting with the three child outcomes differs between the 10 regions. Based on the work by *Chao (1994, 2001); Dwairy et al. (2006)*, and *Rudy and Grusec (2001)*, we tested whether the associations of authoritarian and authoritative parenting with the child outcomes is weaker in East Asian countries and other non-western regions than

in Northern America, Western Europe, and Australia/New Zealand.

The final research question addresses whether the level of individualism and collectivism of the individual country explains national/regional differences in the correlation between parenting styles and child outcomes (Dwairy et al., 2006; Rudy & Grusec, 2001; Sorkhabi, 2005). Hofstede et al. (2010) assess the national level of collectivism/individualism as a continuous variable. North American and European countries tend to have relatively high average individualism scores, the highest of which is in the United States. In contrast, most African, Asian, and Latin American countries score low on individualism/high on collectivism, with Japan and Arab countries having middle values on this dimension. Although some researchers have suggested assessing individualism and collectivism as separate constructs, and to distinguish different aspects of individualism and collectivism (e.g., normative vs. relational individualism/collectivism; for overview Kagitcibasi, 1997) we refer to the original concept by Hofstede et al. (2010) because only these researchers provide collectivism/individualism scores for most countries.

Based on this concept, our third research question examines whether the level of collectivism/individualism moderates the size of the correlation between parenting styles and child outcomes. More concretely, we ask whether the correlation of authoritative parenting with lower internalizing and externalizing problems, as well as better academic performance, is stronger in countries with a higher individualism score. Furthermore, we ask whether the positive correlation of authoritarian parenting with both kinds of problems and the negative correlation of authoritarian parenting with academic achievement is weaker in countries with lower individualism scores.

Method

Sample

Studies were identified through electronic databases (PSYCINFO, ERIC, Google Scholar, and PSYNDEX [an electronic database of psychological literature from German-speaking countries]—search terms: [parenting style] AND [academic achievement OR grade point average OR GPA OR achievement test OR internalizing OR anxiety OR depress* OR externalizing OR aggress* OR delinquen*]) and cross-referencing. The final search was completed at October 1, 2016. Criteria for inclusion of studies in the present meta-analysis were:

1. The studies assessed parenting styles defined by MacCoby and Martin (1983).
2. They assessed academic achievement (via grade point average or academic achievement tests), and/or internalizing problems, and/or externalizing problems.
3. The correlations between parenting styles and at least one of the child outcomes were reported or could be computed.
4. The mean age of the sample was <20 years.
5. The studies were completed before October, 2016.

To include studies from different regions of the globe, we did not limit the included studies to those written in English. Unpublished studies identified by the literature search (e.g., dissertations) were also included. We identified 1,723 records. After screening and assessing for eligibility, we were able to include 428 studies in the meta-analysis. A flowchart of the search for studies is provided online as supplementary material 1, and selected characteristics of the studies included are listed in the supplementary material 2.

We entered the number of children, mean age, percentage of girls, and percentage of members of ethnic minorities, as well as Hispanic children, children with African, Asian, and European ethnicity, country and region of data collection, publication status (1 = published, 2 = unpublished), rater of parenting (1 = child, 2 = parent, 3 = observer, 4 = multi-informant), rater of child outcome (1 = child, 2 = parent, 3 = teacher, 4 = researcher, 5 = multi-informant), quality of the measures of parenting and child outcomes (2 = support for validity and reliability provided, 1 = no such support provided), the size of association of parenting styles with academic performance, and internalizing and externalizing problems. If associations were provided for several subgroups within the same publication (e.g., for female and male participants), we entered them separately in our analysis. Approximately 20% of the studies were coded by the first author and a graduate student. A mean interrater reliability of 93% (range 89–100%) was established. Differences were resolved by discussion.

Measures

Parenting styles were most often assessed with the Parental Authority Questionnaire (Buri, 1991; 105 studies; 24.8%), the Parenting Styles and Dimensions Questionnaire (PSDQ; Robinson, Mandleco, Olsen, & Hart, 2001; 68 studies; 15.9%), the Parenting Style Questionnaire (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; 34 studies; 8.0%), the Child Rearing Practices Report (Block, 1965; 10 studies; 2.4%), and related instruments (211 studies; 49.8%). Academic performance was assessed via GPA (121 studies; 85.8%) and academic achievement tests such as the Woodcock-Johnson III Tests of Achievement (Woodcock et al., 2001; 20 studies; 14.2%). Internalizing problems were most often measured with the Child Behavior Checklist (CBCL; Achenbach, 1991; 32 studies; 15.9%), the Center for Epidemiological Studies Depression Scale (Radloff, 1977; 21 studies; 10.4%), the Children's Depression Inventory (Kovacs, 1982; 15 studies; 7.5%), the Youth Self-Report (YSR; Achenbach, 1991; 11 studies; 5.5%), and related instruments (124 studies; 60.9%). Finally, externalizing problems were most often measured with the CBCL (Achenbach, 1991; 32 studies; 13.6%), the YSR (Achenbach, 1991; 14 studies; 5.9%), and related instruments (190 studies; 80.5%).

Statistical Integration of the Findings

Calculations for the meta-analysis were performed in five steps, based on standardized procedures outlined by Lipsey and Wilson (2001). Random-effects models and the method of moments were computed as random-effects models are recommended if not all sources of heterogeneity between results of individual studies can be identified (Lipsey & Wilson, 2001). The analyses were performed with the meta-analytic software *Comprehensive Meta-Analysis* (Borenstein, Higgins, Hedges, & Rothstein, 2005).

1. The correlations were transformed using Fisher's *r*-to-*z* transformation. Outliers that were more than 2 *SDs* from the arithmetic mean of the effect sizes were recoded to the value at 2 *SDs*, based on Lipsey and Wilson (2001).
2. Effect sizes were weighted by the inverse of their squared *SE*. Then, weighted mean *z*-scores and 95% confidence intervals (CIs) were computed. The significance of the mean was tested by dividing the weighted mean effect size by the SEM. To compare the mean effect sizes with the effect sizes reported in the single studies, the mean effect sizes were later converted to the original metric of product-moment correlations.
3. Homogeneity of effect sizes was tested by use of the *Q* statistic.
4. To test the influence of categorical moderator variables (country group and ethnic group), we used an analogue of an analysis of variance or covariance. Because the latter procedure has not yet been implemented in meta-analytic software, we first computed a weighted regression analysis for predicting the effect sizes from the covariates. We saved the residuals that represent the variance that is not explained by the covariates. We then computed an analog of an analysis of variance with the residuals as the dependent variable and region as the independent variable. A significant *Q* score indicates heterogeneity of the effect sizes between the compared conditions. Differences between two conditions are significant if the 95% CIs of two effect sizes do not overlap (Lipsey & Wilson, 2001). Weighted ordinary least squares regression analyses were computed for testing the moderating effect of the continuous variable collectivism/individualism.
5. Egger's test (Egger, Davey Smith, Schneider, & Minder, 1997), a trim and fill analysis (Duval & Tweedie, 2000), and Rosenthal's fail-safe *N* (Rosenthal, 1979) were used for analysis of possible publication bias.

Results

The included studies have been conducted in the United States (*N* = 161; 37.6%), Iran (*N* = 30; 7%), China (*N* = 20; 4.7%), Spain (*N* = 20; 4.7%), India (*N* = 20; 4.7%), Hong Kong (*N* = 13; 3.0%), Pakistan (*N* = 13; 3.0%), Canada (*N* = 12; 2.8%), Nigeria (*N* = 12; 2.8%), the Netherlands (*N* = 10; 2.3%), Australia (*N* = 9; 2.1%), Taiwan (*N* = 8; 1.9%), Kenya (*N* = 6; 1.4%), Malaysia (*N* = 6; 1.4%), the United Kingdom (*N* = 6; 1.4%), Ghana (*N* = 5; 1.2%), Italy (*N* = 5; 1.2%), Russia (*N* = 5; 1.2%), Singapore (*N* = 5; 1.2%), South Africa (*N* = 5; 1.2%), Ethiopia (*N* = 4; .9%), Israel (*N* = 4; .9%), the Philippines (*N* = 4; .9%), South Korea (*N* = 4; .9%), Turkey (*N* = 4; .9%), Belgium (*N* = 3; .7%), Brazil (*N* = 3; .7%), Finland (*N* = 3; .7%), Germany (*N* = 3; .7%), Indonesia (*N* = 3; .7%), Ireland (*N* = 3; .7%), New Zealand (*N* = 3; .7%), Portugal (*N* = 3; .7%), Albania (*N* = 2; .5%), Cyprus (*N* = 2; .5%), Egypt (*N* = 2; .5%), Greece (*N* = 2; .5%), Jamaica (*N* = 2; .5%), Mexico (*N* = 2; .5%), Romania (*N* = 2; .5%), Sweden (*N* = 2; .5%), Thailand (*N* = 2; .5%), the Bahamas (*N* = 1; .2%), Cameroon (*N* = 1; .2%), France (*N* = 1; .2%), Jordan

(*N* = 1; .2%), Poland (*N* = 1; .2%), Saudi Arabia (*N* = 1; .2%), Slovenia (*N* = 1; .2%), St. Kitts and Nevis (*N* = 1; .2%), St. Vincent (*N* = 1; .2%), and Tajikistan (*N* = 1; .2%). Another three studies (.7%) combined data from more than one country. About 5% of the included studies provided longitudinal data. Two-thirds of the studies provided support for the validity and reliability of the measures of parenting, internalizing problems, and externalizing problems. In about 72% of the studies, information on parenting and child outcomes came from the same source.

The 428 included studies provided data on 347,051 children and adolescents with a mean age of 12.99 years (*SD* = 3.87). About 50.9% of the children were female and 36.2% belonged to an ethnic minority.

Differences Between Ethnic Groups in Western Countries

The first research question asked whether the associations of authoritative and authoritarian parenting with internalizing problems, externalizing problems, and academic achievement would differ between non-Hispanic White ("European") families, Hispanic families, as well as families with African and Asian ethnicities living in western countries. Only those studies that provided separate results for at least one of these ethnic groups were included in this meta-analysis. As shown in Table 1, authoritative parenting is associated with fewer internalizing and externalizing problems, as well as better academic performance in all four ethnic groups; these correlations can be interpreted as small/very small (Cohen, 1992). Nonetheless, the *Q*-statistics indicate that the size of the association of authoritative parenting with externalizing problems and academic achievement differs between the assessed ethnic groups. As indicated by the nonoverlap of the 95% CI, associations of authoritative parenting with academic achievement were stronger in non-Hispanic, White families than in families with an Asian ethnicity. In the analysis on externalizing problems, the 95% CIs of the four ethnic groups overlapped; thus, indicating that there were no clear between-groups differences.

While authoritarian parenting was associated with more internalizing and externalizing problems and poorer academic performance of non-Hispanic, White and Asian children, we found such an association in Hispanic children only with regard to internalizing and externalizing problems. No significant associations of authoritative parenting with the three child outcomes were observed in children with an African ethnic background. The *Q*-statistics indicate significant ethnic differences with regard to internalizing problems and academic achievement: The positive correlation of authoritarian parenting with internalizing problems was stronger in families with an Asian and Hispanic ethnic background than in those with an African background. In addition, the association of authoritarian parenting with academic achievement was stronger (more negative) in non-Hispanic, White families than in families with a Hispanic ethnic background.

Only two significant associations of permissive parenting emerged: This parenting style was associated with more externalizing problems in Hispanic and Asian families. However, differences between ethnic groups did not reach statistical significance. Finally, neglectful parenting was associated with negative child outcomes in all compared ethnic groups, and the size of this association did not differ by ethnicity. All effect sizes in the ethnic

Table 1
Ethnic Differences in the Association of Parenting Styles With Internalizing and Externalizing Problems, and Academic Performance (Western Samples)

Ethnic group	Internalizing problems				Externalizing problems				Academic performance							
	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>F</i> _{sN}	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>F</i> _{sN}	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>F</i> _{sN}	
Authoritative parenting				5.05					8.08*					14.31**	3653 ^r	
European	8	-.15***	-.22	-.08	4.82	262 ^r	7	-.23***	-.28	-.16	7.12	17	.20***	.15	14.13	56 ^r
African	9	-.09*	-.17	-.01	9.06	20	16	-.23***	-.27	-.18	22.58	7	.13***	.06	6.84	285 ^r
Hispanic	29	-.08***	-.13	-.04	36.97	284 ^r	15	-.14***	-.19	-.08	16.20	11	.17***	.11	193 ^r	171 ^r
Asian	21	-.15***	-.20	-.10	21.33	576 ^r	16	-.16***	-.22	-.10	11.53	20	.08***	.03	9.36	
Authoritarian parenting				12.00**					6.23					7.96*	281 ^r	
European	9	.12***	.05	.19	.96	165 ^r	10	.10**	.03	.18	4.23	13	-.12***	-.17	11.85	0
African	9	-.01	-.09	.07	6.17	0	11	.05	-.03	.13	8.21	8	-.05	-.13	5.71	0
Hispanic	28	.13***	.08	.17	29.06	534 ^r	15	.12***	.05	.20	19.76	11	.01	-.07	13.78	0
Asian	16	.16***	.10	.22	25.01	590 ^r	13	.19***	.12	.27	15.31	19	-.06*	-.11	19.63	75
Permissive parenting				2.95					3.54					4.35	0	0
European	6	-.08	-.15	.00	1.96	0	7	-.01	-.12	.10	8.16	8	.05	-.01	10.76	0
African	10	-.01	-.09	.06	4.52	0	12	.05	-.05	.16	14.61	8	.03	-.05	5.09	0
Hispanic	16	.01	-.05	.07	14.71	0	11	.11*	.00	.21	5.68	12	-.02	-.09	8.97	0
Asian	8	-.01	-.09	.07	15.49*	0	6	.13*	.00	.26	7.54	5	-.03	-.09	7.86	0
Neglectful parenting				1.90					2.07					1.73	523 ^r	55 ^r
European	6	.10***	.06	.14	3.67	33 ^r	6	.16***	.07	.24	3.75	8	-.15***	-.18	11.49	63 ^r
African	9	.15***	.09	.20	15.46	57 ^r	9	.21***	.13	.28	15.95*	7	-.16***	-.22	6.48	108 ^r
Hispanic	7	.12***	.08	.17	4.70	76 ^r	6	.12*	.02	.22	2.78	32	-.16***	-.22	4.35	
Asian	6	.12***	.05	.19	11.73*	29	4	.17***	.04	.30	.16	20	-.13***	-.17	2.56	

Note. *k* = number of effect sizes included; *r* = effect size (weighted mean correlation coefficient); *Z* = test for significance of *r*; 95% CI = lower and upper limits of 95% confidence interval; *Q* = test for homogeneity of effect sizes; *F*_{sN} = fail-safe *N*; ^r indicates resistance to the file-drawer problem according to Rosenthal (1979).

* *p* < .05. ** *p* < .01. *** *p* < .001.

groups were homogeneous, thus indicating similar results within the combined studies.

Regional Differences

Regional comparisons were the focus of the second research question. We first checked for regional differences in study characteristics using an analysis of variance. There were regional differences in participant age, $F(9) = 6.36, p < .001$, use of community-based versus clinical samples, $F(9) = 2.88, p < .001$, use of validated parenting, $F(9) = 2.40, p < .02$ and child outcome measures, $F(9) = 3.93, p < .001$, mono-informant bias, $F(9) = 5.33, p < .001$, and use of cross-sectional versus longitudinal designs, $F(9) = 5.04, p < .001$. Thus, we used these variables as covariates in the following meta-analysis.

As shown in Table 2, associations of authoritative parenting with internalizing problems, externalizing problems, and academic achievement varied between country groups. Authoritative parenting was associated with fewer internalizing and externalizing problems in North America, Western Europe, East Asia, South Asia, South-East Asia, Arab-Muslim countries, and Australia/New Zealand. In addition, authoritative parenting was associated with fewer internalizing problems in Latin America. No significant associations with internalizing and externalizing problems were found in Eastern Europe and Subsahara Africa. The nonoverlap of the 95% CIs indicates that the association of authoritative parenting with internalizing problems was more negative in Australia/New Zealand and Western Europe than in Subsahara Africa. Authoritative parenting showed stronger negative associations with externalizing problems in studies from Arab-Muslim countries than in North America, Western Europe, East Asia, South-East Asia, and Subsahara Africa. Furthermore, authoritative parenting was associated with better academic achievement in all compared regions. No Latin American studies were found on this association. Associations of authoritative parenting with academic achievement were stronger in South Asia, Arabic-Muslim countries, and Subsahara Africa than in North America. The associations were also stronger in Subsahara-Africa and Arab-Muslim countries than in Western Europe and South-East Asia.

Associations of an authoritarian parenting style with internalizing and externalizing problems also varied between country groups while no such variability emerged in regards to associations with academic achievement. Authoritarian parenting was associated with more internalizing and externalizing problems and poorer academic performance in North America, Western Europe, Eastern Europe, East Asia, South Asia, and Arab-Muslim countries. Two out of three associations were significant in Australia/New Zealand and Latin America (where no studies on academic achievement could be identified), and only one significant association emerged in South-East Asia (for externalizing problems) and Subsahara Africa (for academic achievement). There were no associations of authoritarian parenting with a desirable outcome. The nonoverlap of the 95% CIs indicates that the positive correlation of authoritarian parenting with internalizing problems was stronger in Latin America and South Asia than in Subsahara Africa, and that the positive correlation of authoritarian parenting with externalizing problems was stronger in South Asia than in North America.

Few significant associations were found for permissive parenting. This parenting style was associated with more internalizing

problems in North America and South-East Asia but with fewer internalizing problems in Western Europe and Latin America. Associations of permissive parenting with internalizing problems were more negative in Latin America than in North America, Western Europe, East Asia, South Asia, South East Asia, Arab-Muslim countries, and Subsahara Africa. Permissive parenting was related to more externalizing problems in North America, East Asia, South Asia, South-East Asia, Arab-Muslim countries, Subsahara Africa, and Australia/New Zealand. Associations of permissive parenting with more externalizing problems were stronger in Subsahara Africa than in North America, Western Europe, and Eastern Europe. In addition, permissive parenting related to poorer academic performance in North America, East Asia, South Asia, Arab-Muslim countries, Australia/New Zealand, and Subsahara Africa. The nonoverlap of the 95% CIs indicates that associations were more negative in North America, East Asia, South Asia, Arab-Muslim countries, Subsahara Africa, and Australia/New Zealand than in Western Europe.

The neglectful parenting style was associated with more internalizing and externalizing problems as well as poorer academic performance in North America, Western Europe, and South Asia. Two of these associations were significant in Subsahara Africa (with externalizing problems and academic achievement). Only one of these associations was significant in Eastern Europe (with worse academic performance), East Asia and South-East Asia (with more externalizing problems each), Arab-Muslim countries (with more internalizing problems), and Australia/New Zealand (with worse academic performance). The nonoverlap of the 95% CIs indicates that associations of neglectful parenting with internalizing problems were more positive in South Asia than in Latin America. In addition, associations with academic achievement were less positive in North America than in Arab-Muslim countries.

About 85% of the effect sizes of the individual country groups were homogeneous, thus indicating that most results were similar in the counties that were combined to a county group. Most heterogeneous effect sizes (5 out of 17) were observed in Subsahara Africa; thus, indicating that the effect sizes vary, in part, between and/or within the included countries.

Publication Bias

As we had included a larger number of unpublished studies (e.g., dissertations), we were able to test with analogs of the analysis of variance (ANOVA) whether their results differ from the results of studies that have been published in journals or book chapters. Three out of 12 associations of parenting styles with child outcomes were stronger in published than in unpublished studies (association of authoritative parenting with internalizing symptoms, of authoritarian parenting with academic achievement, and of neglectful parenting with achievement). However, another three associations (of authoritarian parenting with externalizing problems, of permissive parenting with achievement, and of neglectful parenting with internalizing problems) were stronger in unpublished than in published studies (Pinquart, 2016, *in press a*, *in press b*). Thus, the analysis did not show consistent support for a possible publication bias.

As second indicator of possible publication bias, Egger test analyzes funnel plot asymmetry by regressing the effect size

Table 2
Regional Differences in the Association of Parenting Styles With Internalizing Problems, Externalizing Problems, and Academic Performance

Region	Internalizing problems				Externalizing problems				Academic performance								
	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>F</i> _s <i>N</i>	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>F</i> _s <i>N</i>	<i>k</i>	<i>r</i>	95% CI	<i>Q</i>	<i>F</i> _s <i>N</i>		
Authoritative parenting style																	
North America	172	-.13***	-.15	-.11	27.76***	140	-.16***	-.18	-.14	27.70**	111	.15***	.12	.18	33.17***		
Western Europe	43	-.19***	-.22	-.15	45.30	63	-.13***	-.16	-.10	48.73	13	.12*	.05	.19	58.57		
Eastern Europe	3	-.11	-.24	.02	6.84*	0	-.12	-.24	.00	3.29	0	.26***	.09	.42	42.017 ^r		
Latin America	10	-.10*	-.17	-.03	9.21	4	-.11	-.22	.00	1.20	0				687 ^r		
East Asia	21	-.19***	-.23	-.13	13.39	934 ^r	36	-.15***	-.19	8.60	13	.14*	.05	.23	141 ^r		
South Asia	16	-.16***	-.22	-.09	26.12*	452 ^r	18	-.18***	-.24	16.67	17	.24***	.18	.31	2871 ^r		
South-East Asia	4	-.10*	-.17	-.03	1.66	15	-.11***	-.16	-.06	10.12	13	.11*	.02	.19	12.13		
Arab-Muslim countries	23	-.18***	-.23	-.13	36.37*	689 ^r	16	-.25***	-.30	31.12**	22	.25***	.19	.31	3362 ^r		
Subsahara Africa	12	-.06	-.12	.00	17.50	0	-.08	-.16	.00	19.13**	0	.28***	.22	.35	3542 ^r		
Australia/New Zealand	6	-.24***	-.32	-.15	2.04	92 ^r	3	-.35***	-.47	.73	8	.23***	.13	.33	291 ^r		
All studies	313	-.14***	-.16	-.13	311.61	126,561 ^r	317	-.15***	-.17	288.81	219	.18***	.16	.20	188,470 ^r		
Authoritarian parenting style																	
North America	152	.13***	.10	.19	152.93	151	.14***	.12	.16	19.13*	93	-.06***	-.09	-.02	61.28		
Western Europe	37	.15***	.10	.18	29.34	1392 ^r	61	.18***	.14	50.32	9	-.12***	-.21	-.03	3.19		
Eastern Europe	6	.14**	.04	.24	5.52	35	.12*	.03	.20	9.57	3	-.28***	-.47	-.08	1.31		
Latin America	12	.23***	.16	.30	11.29	818 ^r	6	.12*	.01	8.75	19	0			58 ^r		
East Asia	27	.17***	.11	.21	30.74	1556 ^r	41	.21***	.17	44.68	18	-.09**	-.16	-.02	14.12		
South Asia	13	.26***	.20	.33	11.11	619 ^r	16	.22***	.16	752 ^r	16	-.11*	-.19	-.03	17.13		
South-East Asia	4	.05	-.07	.16	.66	0	.13	.13***	.06	19	136 ^r	12	-.07	-.16	.02	18.40	
Arab-Muslim countries	31	.16***	.11	.20	35.64	1057 ^r	24	.17***	.12	45.73**	21	-.13***	-.19	-.06	30.41		
Subsahara Africa	11	.06	-.01	.13	4.99	0	.9	.10*	.01	8.00	5	-.15***	-.22	-.08	39.91***		
Australia/New Zealand	6	.17***	.08	.26	3.29	93 ^r	9	.23***	.13	6.58	131 ^r	8	.01	-.09	.12	6.72	
All studies	302	.14***	.13	.16	281.64	102,081 ^r	350	.16***	.14	313.90	198	-.09***	-.11	-.07	194.25		
Permissive parenting style																	
North America	109	.03*	.00	.05	88.48	11	.08**	.06	.11	81.22	83	-.04**	-.07	-.01	60.28		
Western Europe	32	-.05*	-.09	-.01	26.85	127	.03	-.00	.07	67.99	0	.08	-.00	.15	7.94		
Eastern Europe	2	-.01	-.46	.43	.04	0	-.02	-.15	.12	4.68	0	.3	-.33	.11	2.02		
Latin America	5	-.19***	-.27	-.11	1.07	125 ^r	3	.04	-.09	.27	2.08	0			0		
East Asia	9	.07*	.00	.14	5.97	29	.11	.09*	.01	10.38	22	-.15***	-.22	-.06	15.40		
South Asia	14	.01	-.06	.07	21.36*	0	.15	.11**	.04	8.09	16	-.11**	-.18	-.04	32.80**		
South-East Asia	4	.15*	.03	.25	4.17	36 ^r	12	.13***	.06	9.05	243 ^r	11	-.04	-.13	.04	5.01	
Arab-Muslim countries	22	.04	-.02	.09	36.16*	0	.16	.12***	.05	16.11	283 ^r	21	-.08*	-.13	-.02	20.37	
Subsahara Africa	10	.06	-.01	.13	7.58	0	.8	.24***	.15	32	19.31*	16	-.11***	-.17	-.04	24.75	
Australia/New Zealand	0						1	.27	-.02	.52	0	6	-.15**	-.24	2.46		
All studies	208	.01	-.00	.04	189.83	0	.271	.08***	.06	229.96	16,523 ^r	176	-.06***	-.08	175.59		
Neglectful parenting style																	
North America	54	.14***	.10	.16	14.28	5069 ^r	57	.17***	.14	11.99	41	-.15***	-.19	-.11	14.47		
Western Europe	23	.13***	.08	.18	15.32	342 ^r	33	.17***	.13	55.10	8	-.16***	-.23	-.09	22.32		
Eastern Europe	2	.03	-.43	.48	.03	0	.2	-.07	.39	.16	0	.3	-.24*	-.04	.51		
Latin America	9	.05	-.02	.12	9.63	0	.2	.14	-.02	.30	.01	0			0		
East Asia	2	.04	-.08	.17	.11	0	.5	.14**	.05	23	16.52**	8	-.04	-.12	.04	10.90	
South Asia	5	.26***	.13	.38	3.11	55 ^r	2	.26***	.10	.38	.82	35 ^r	.3	-.13*	-.25	.84	
South-East Asia	0						2	.26***	.10	.41	1.30	27 ^r	.2	-.13	.02	.01	
Arab-Muslim countries	3	.21***	.10	.32	4.76	28 ^r	1	-.06	-.39	.28	.00	0	.04	-.10	.18	3.48	
Subsahara Africa	3	.09	-.02	.19	11.30**	0	.2	.21**	.05	.34	2.34	44 ^r	10	-.16***	-.22	-.09	35.42***
Australia/New Zealand	3	.08	-.02	.18	.03	0	.4	-.07	-.24	.12	.24	0	-.20*	-.36	-.02	.13	
All studies	104	.13	.11	.15	108.76	14,690 ^r	109	.18***	.16	21	117.40	79	-.14***	-.16	78.79	25,705 ^r	

Note. All analyses controlled for mean age, quality of the parenting and child outcome measure, mono-informant bias, sampling (clinical vs. community-based), study design (cross-sectional vs. longitudinal), and reporter of parenting and child outcome. *k* = number of parenting and child outcome. *r* = effect size (weighted mean correlation coefficient); *Z* = test for significance of *r*; 95% CI = lower and upper limits of 95% confidence interval; *Q* = test for homogeneity of effect sizes; * indicates resistance to the file-drawer problem according to Rosenthal (1979). *F*_s*N* = fail-safe *N*.
* *p* < .05. ** *p* < .01. *** *p* < .001.

against its *SE* (Egger et al., 1997). Twelve Egger tests (4 Parenting Styles $\times$ 3 Outcome Variables) were computed across the total numbers of available studies. Funnel plot asymmetry was identified in 7 of 12 analyses, $t = 2.75$ to 4.68 , $p < .01$ to $.001$. These results indicate that publication bias or other factors may have caused funnel plot asymmetry. In the seven cases of asymmetry, the trim and fill algorithm estimated corrected effect sizes after imputation of possible missing studies that might have caused funnel plot asymmetry (Duval & Tweedie, 2000). As publication bias should be because of a trend of nonsignificant results not being published (Rosenthal, 1979), the corrected effect sizes would have to be lower than the original effect sizes. In fact, three effect sizes decreased after applying the trim and fill algorithm (authoritarian parenting—achievement: from $r = -.09$ to $-.04$; authoritarian parenting—externalizing symptoms: from $r = .16$ to $.10$; permissive parenting—externalizing symptoms: from $r = .08$ to $.00$). One of these associations (permissive parenting—externalizing symptoms) was no longer significant after applying the trim and fill procedure. However, three associations became *stronger* after applying the trim and fill algorithm (authoritative parenting—achievement: from $r = .18$ to $.21$; permissive parenting—internalizing symptoms from $r = .02$ to $.04$; neglectful parenting—externalizing symptoms: from $r = .18$ to $.20$). The latter results cannot be interpreted as file-drawer problem and indicate that other factors led to funnel plot asymmetry.

In addition, fail-safe N indicates the number of unidentified studies with effect sizes of zero that would be needed for reducing the total effect size to a nonsignificant level (Rosenthal, 1979). Fail-safe N s were computed for 11 of the 12 overall analyses (no analysis could be computed for associations of permissive parenting with internalizing symptoms because of the lack of statistical significance). Between 9,919 (permissive parenting—GPA) and 188,470 (authoritative parenting—GPA) additional studies with an effect size of zero would be needed for reducing the overall effect sizes to a nonsignificant level. Rosenthal (1979) has suggested that results would be resistant to the file-drawer problem if the number of possible unidentified studies reaches the quintuple of the number of available studies plus 10. This condition was met in all analyses (see Table 2).

As it would also be relevant to assess the robustness of the results for individual ethnic groups and regions, we computed additional fail-safe N s for the four ethnic groups (see Table 1) and the 10 regions of the globe (see Table 2). Table 1 indicates that 27 of the 33 significant effect sizes of ethnic group analysis are resistant to the file drawer problem according to Rosenthal's rule of thumb. No nonresistant results were found in White families while one to two results were nonresistant in African and Hispanic families as were four results in Asian families. Regional analyses showed that 70 out of the 82 significant associations were robust according to Rosenthal (1979). Robust associations were most often found in North America (11 of 12), Arab-Muslim countries (9 of 9) and Western Europe (9 of 10), and least often found in East Asia (7 of 10). In addition, results tended to be more robust with regard to authoritative (23 of 24) and authoritarian parenting (22 of 25) then for permissive parenting (12 of 17) and neglectful parenting (13 of 16; Table 2).

Associations With Levels of Collectivism/Individualism

The third research question examined whether the size of association between parenting styles and child outcomes varies by the level of collectivism/individualism of the country where the study has been conducted. Six studies had to be excluded from the analysis because no collectivism/individualism score was available for the country or because the study combined data from more than one country. We first checked whether the level of collectivism/individualism of the country of the individual study correlated with other study characteristics, namely use of clinical versus community-based sample, use of longitudinal versus cross-sectional study design, mean age, percentage of female participants, use of parenting measures and child outcome measures with support for validity and reliability, source of information on parenting and child outcome, and mono-informant bias. As the level of collectivism/individualism correlated with mono-informant bias and use of clinical samples, we controlled for these study characteristics as covariates.

One moderating effect of collectivism/individualism was found in regards to the associations of authoritative parenting with child outcomes: The association with academic achievement was *weaker* (less negative) in countries with higher individualism scores. In addition, collectivism/individualism moderated the size of association of authoritarian parenting with all assessed child outcomes. Associations of authoritarian parenting with internalizing and externalizing symptoms were *weaker* (less positive) in countries with higher individualism scores. Similarly, associations of authoritarian parenting with academic achievement were *weaker* (less negative) in countries with higher individualism scores. Associations of permissive and neglectful parenting with the child outcomes were not moderated by the level of collectivism/individualism (see Table 3).

Discussion

The present study is the first meta-analysis on ethnic and regional differences in the associations of parenting styles with internalizing problems, externalizing problems, and academic achievement. More ethnic and regional similarities than differences were found. In studies from western countries, we did not find much empirical evidence for the suggestion that associations of authoritative parenting with child outcomes may be stronger in non-Hispanic, White families than in ethnic minorities. There was only weak support for the suggestion that the associations of authoritarian parenting with a child outcome is less negative in ethnic minorities than in non-Hispanic, White families. Authoritative parenting was related to at least one positive child outcome and authoritarian parenting to at least one negative child outcome in all assessed regions, although the results varied, in part, between regions. Finally, positive associations of authoritarian parenting with internalizing and externalizing problems, as well as negative associations of this parenting style with academic achievement, were weaker in countries with higher individualism scores. Similarly, associations of authoritative parenting with academic achievement were weaker (less positive) in more individualist countries.

When focusing on studies from western countries, we found that authoritative parenting is associated with better child outcomes in non-Hispanic, White families as well as those with an African,

Table 3

Moderating Effects of the National Level of Collectivism/Individualism on the Association Between Parenting Styles With Internalizing and Externalizing Problems, and Academic Performance

Parenting style	Internalizing problems				Externalizing problems				Academic performance			
	<i>k</i>	<i>B</i>	β	<i>Z</i>	<i>k</i>	<i>B</i>	β	<i>Z</i>	<i>k</i>	<i>B</i>	β	<i>Z</i>
Authoritative parenting	308	.0002	.04	.64	312	-.0003	-.07	-1.27	217	-.0010	-.18	-2.61**
Authoritarian parenting	297	-.0009	-.17	-2.83**	344	-.0008	-.16	-2.95**	195	.0009	.16	2.33*
Permissive parenting	205	-.0002	-.04	-.58	270	-.0003	-.06	-.90	173	.0006	.11	1.42
Neglectful parenting	102	.0001	.02	.16	109	-.0001	-.01	-.11	79	-.0008	-.18	-1.54

Note. Regression analyses controlled for mono-informant bias and use of clinical samples. *k* = number of studies; *B*/ β non-/standardized regression coefficient, *t* = test for significance.

* *p* < .05. ** *p* < .01.

Asian, and African ethnicity. These results support Steinberg's conclusion that young people from western countries benefit from having parents who are authoritative: warm, firm, and accepting of their needs for psychological autonomy (Steinberg, 2001). Nonetheless, we have to be aware that the included studies provided only correlational (nonexperimental) data that do not allow for drawing causal conclusions.

Stronger associations of authoritative parenting in non-Hispanic, White families than in families from ethnic minorities were only found in relation to academic achievement of children with an Asian ethnic identity. This result may support Chao's (1994) suggestion that authoritative parenting would be less culturally relevant in Asian American families than in White families. Alternatively, Steinberg, Dornbusch, and Brown (1992) reported that Asian American students achieved better grades than students from other ethnic groups—thus indicating restricted variance in this child outcome that would reduce the size of correlation with parenting variables.

Authoritarian parenting did not show a negative association with the assessed child outcomes in western families with an African ethnic background, and associations of authoritarian parenting with child outcomes were, in part, stronger in non-Hispanic, White, Asian, and Hispanic families than in families with an African ethnic background. The observed stronger associations of authoritarian parenting in families with an Asian and Hispanic ethnic background as compared with those with an African background may be based on the fact that authoritarian parenting tends to be more culturally accepted in African American families than in Asian American and Hispanic families (Deater-Deckard et al., 2005; Dornbusch et al., 1987; Steinberg, 2001). Nonetheless, we did not find significantly positive associations of authoritarian parenting with any of the assessed outcomes in families from western countries with an African ethnic background.

Regional comparisons indicated that authoritative parenting showed at least one positive association with a desirable child outcome in all 10 assessed regions of the globe. The results were least consistent in Eastern Europe and Subsahara Africa, but the test power was restricted for Eastern European because of low number of available studies. Families from Eastern Europe and Subsahara Africa may have less experience with authoritative parenting than families from western countries (e.g., Piko & Balázs, 2012) that might lead to lower effects because of cultural inconsistency (Dwairy et al., 2006). For example, Soviet pedagogy encouraged child rearing methods designed to foster obedience,

and violation of this value could justify punishments (Yakhnich, 2016).

We found no support for Chao's suggestion that authoritative parenting may be associated with less positive child outcomes in Chinese and other East Asian societies than in the western countries (Chao, 2001). However, most studies from Asia have been conducted in urban areas where families might be more influenced by western concepts of parenting than the rural families (Liu & Guo, 2010).

Authoritarian parenting was associated with at least one undesirable child outcome in all compared regions. Although we found fewer statistically significant associations with undesirable outcomes in South-East Asia and Subsahara Africa than in North America and Western Europe, we did not find evidence for significantly stronger associations with undesirable outcomes in the three western regions than in the other regions of the globe; thus, indicating more similarities than differences between western and non-western countries.

Permissive parenting was associated with undesirable outcomes (internalizing or externalizing problems or poor academic performance) in 15 out of 27 comparisons and with a desirable outcome in two comparisons (fewer internalizing problems in Western Europe and Latin America). Gracia et al. (2008) suggested that positive effects of permissive parenting in Latin America and (South-)West Europe may be explained by the emphasis placed on affection and egalitarian relations in these countries.

Associations of neglectful parenting with undesirable child outcomes were most consistent in North America and Western Europe. However, this parenting style has been assessed less often than the other parenting styles, and on average, only about three to four studies were available for analyses in each of the non-western regions. Thus, restricted statistical power may explain the lower number of significant associations of this parenting style with child outcomes in non-western regions.

The present meta-analysis found that positive associations of authoritative parenting with academic achievement as well as the negative associations of authoritarian parenting with academic achievement were weaker in countries with higher individualism scores. Similarly, positive associations of authoritarian parenting with internalizing and externalizing problems were weaker in the more individualist countries. The direction of these moderating effects of collectivism/individualism was not in line with expectations of Rudy and Grusec (2001) as well as Dwairy et al. (2006). Authoritarian parenting may be less normative and more harmful

in many collectivist societies than suggested by Rudy and Grusec (2001). Nonetheless, Choi, Kim, Kim, and Park (2013) stated that the ultimate goals of establishing and building strong family ties and interdependence in Asian families are likely to discourage a harsh (authoritarian) parenting style. In addition, Rudy and Grusec's arguments might work better for child outcomes that are more strongly related to collectivism/individualism, such as the development of autonomy or respect for authority.

Our results on authoritarian parenting may be explained by the fact that a low prevalence of authoritarian parenting in individualist countries (e.g., Su & Hynie, 2011; Yang et al., 2014) is associated with restricted variance which, again, leads to smaller statistical effect sizes. In contrast, severe forms of authoritarian parenting tend to be more prevalent in (some) collectivist countries (Lansford et al., 2010) where authoritarian parenting is more culturally accepted (Dwairy et al., 2006). As higher use of severe forms of physical punishment has, on average, stronger negative effects (Gershoff, 2002), there will be stronger associations with undesirable outcomes in countries with higher collectivism scores. Similarly, the high prevalence of authoritative parenting observed in many studies from western countries (e.g., White, Liu, Gonzales, Knight, & Tein, 2016) may have caused restricted variance and lower effect sizes in the more individualist countries. The observed stronger positive association of authoritative parenting with academic achievement in the more collectivist countries may also be based on the fact that the responsiveness of authoritative parents from Asian cultures and possibly other collectivist cultures is often expressed as actively promoting the academic success of their children (Srokhabi, 2005; Stewart et al., 1999). As associations of authoritative parenting with academic performance were less positive in (western) countries with higher individualism scores, one may ask whether our result contrasts with the conclusion of Steinberg (2001) that young people from western countries benefit from having parents who are authoritative. However, we found a positive association of authoritative parenting with academic achievement in North America, Western Europe, and Australia/New Zealand. Our results indicate instead, that children from non-western countries may even benefit more.

The comparison of the results of published and unpublished studies as well as trim and fill analysis did not lead to clear conclusions about a possible file-drawer problem as they suggested that unpublished and possibly unidentified studies have in some cases lower and in other cases even higher effect sizes. Fail-safe *N*s indicate that the results across all studies were resistant to the file-drawer problem, as were 82–85% of the results on ethnic groups and different regions of the globe. However, results from Asian American families and from East Asia were less resistant to the file-drawer problem than the results from White families and from Northern America, Arab/Muslim countries, and Western Europe, respectively (Rosenthal, 1979).

Limitations and Conclusions

Some limitations of the present study have to be mentioned. First, we limited our focus on the four parenting styles defined by Baumrind and successors (Baumrind, 1966; Maccoby & Martin, 1983). There were not enough studies available for regional comparisons of other parenting styles that may be particularly relevant in some non-western regions, such as "training" (Chao, 1994).

Second, analyses of ethnic differences in western countries were limited to four ethnic groups. Too few studies were available on Native Americans or for splitting the four ethnic groups into subgroups (e.g., Chinese Americans, Japanese Americans). Third, we had to combine results from different countries of defined regions because too few studies were available from most individual countries. Nonetheless, about 85% of the effect sizes were homogeneous; thus, indicating that most results did not vary within the region. Fourth, the number of available studies was not equally divided across regions; thus, reducing the chance for finding significant associations in some non-western regions. Fifth, levels of collectivism/individualism do not only vary between countries but also within countries. Variation within countries (and related variation between different samples from the same country) increase the size of error variance and reduce the test power of the related moderator analysis. Sixth, the large majority of studies from non-western countries have been conducted in urban areas where parental behavior and their effects may be less traditional than in rural areas. Seventh, we limited our focus on moderating effects of ethnicity, region, and collectivism/individualism. Effects of other moderators on the association of parenting styles with child outcomes have been addressed elsewhere (Pinquart, 2016, in press a, in press b). Eighth, similarly to other meta-analyses, we combined data from different cultures, groups, and measures without being able to prove the measurement invariance of the measures across the different studies. Nonetheless, the very few cross-cultural studies that have tested for measurement invariance of parenting styles measures (Leung et al., 1998; Wu et al., 2002) found some support for the invariance of their measure. Non-equivalence of measures should lead to an increase in the variance between studies (Lipsey & Wilson, 2001) and probably to heterogeneous effect sizes across studies. However, about 85% of the effect sizes were found to be homogeneous. Nevertheless, we would like to see more cross-cultural studies with proved invariance of their measures that test whether associations of parenting styles with child outcomes differ between cultural groups. Ninth, results from Asian American families and from East Asia were less resistant to a file-drawer problem according to Rosenthal's rule of thumb (Rosenthal, 1979) than results from White families and from Northern America, Arab/Muslim countries, and Western Europe. Nonetheless, Rosenthal characterized his rule as conservative, and the real numbers of unidentified nonsignificant and significant results in different ethnic groups and regions are difficult to estimate. Finally, the analysis of correlational data does not allow for drawing causal conclusions. Associations of parenting styles with child outcomes are, in part, bidirectional (Pinquart, 2016, in press a, in press b). As most available studies on cross-lagged associations of parenting styles with behavior problems and academic achievement have been conducted in western countries and with ethnically heterogeneous samples, we could not analyze ethnic and cross-national differences in these associations.

Despite these limitations, several conclusions can be drawn. First, although there is some ethnic/cultural variability in the association of parenting styles with internalizing and externalizing problems as well as academic achievement, there are more similarities than differences. As authoritative parenting is associated with at least one desirable outcome in all compared ethnic groups and regions of the globe, all parents could be advised or trained to practice this parenting style. Being warm, firm, and, to some

extent, accepting of their children's needs for psychological autonomy seems to be appropriate for children and adolescents around the world (Steinberg, 2001).

Because authoritarian and neglectful parenting styles were associated with undesirable child outcomes in three quarters and two thirds of the ethnic and regional analyses, respectively, and not with a desirable outcome in any analysis, we conclude that parents should not use these parenting styles. As there were no negative associations of authoritarian parenting with the assessed outcomes in families with African ethnic backgrounds living in western countries, authoritarian parenting seems to be tolerable in this cultural context. Nonetheless, as authoritative parenting was associated with desirable outcomes in this context, authoritarian parenting would not be the best choice in African American families.

As permissive parenting was the only parenting style associated with a desirable outcome in some analyses (internalizing problems of children from Western Europe and Latin America), with an undesirable outcome in other analyses (e.g., in North America), and as this parenting style did not show significant associations in other cases, we conclude that effects of this style seem to be most context-specific. While this style (and parental warmth in particular) may help with maintaining or—in Latin American and western European families—even with increasing emotional well-being, the lack of control may place some children at risk for psychological and academic problems.

With regard to the role of collectivism/individualism we conclude that Rudy and Grusec (2001) and Dwairy et al. (2006) were wrong when suggesting that authoritarian parenting may show less undesirable associations with child outcomes in the more collectivist societies. The effects of this parenting style may even be more problematic in these countries.

With regard to further research, we recommend more studies from rural regions of non-western countries because their results might differ from those of urban regions that are more strongly affected by globalization (Liu & Guo, 2010). Rather than using the global constructs of collectivism/individualism, future research should assess more specific cultural features that are related to cultural differences in the association of parenting styles with child outcomes, such as cultural normativeness of parenting dimensions or styles.

In addition, more longitudinal research from non-western countries and from different ethnic groups within western countries would be welcomed for ethnic and national comparisons of the effects of parenting styles on *change* in child outcomes. In addition, further meta-analyses should test ethnic and national similarities and differences in the association of parenting *dimensions* (such as warmth, behavioral control, and autonomy support) with child outcomes.

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- Studies marked with an asterisk were included in the meta-analysis.
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To cite this article: Nicolette V. Roman, Eugene L. Davids, Alice Moyo, Lauren Schilder, Marlies Lacante & Willy Lens (2015) Parenting styles and psychological needs influences on adolescent life goals and aspirations in a South African setting, Journal of Psychology in Africa, 25:4, 305-312, DOI: [10.1080/14330237.2015.1078087](https://doi.org/10.1080/14330237.2015.1078087)

To link to this article: <https://doi.org/10.1080/14330237.2015.1078087>



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Parenting styles and psychological needs influences on adolescent life goals and aspirations in a South African setting

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The present study examined the role of parenting styles and basic psychological needs in the adoption of goals and aspirations of learners, as well as for their psychological wellbeing (positive versus negative affect) in a South African sample of learners. A cross-sectional design was used to conduct this study with a sample of 853 learners at public schools in the Western Cape of South Africa (females = 57%, mean age 16.96 years, SD = 1.12). Data were collected using the Parenting Style and Dimensions Questionnaire (PSDQ), Psychological Needs Scale, Aspiration Index and the Positive And Negative Affect Schedule (PANAS). The results suggest that authoritative and authoritarian parenting styles influence the adoption of life goals and psychological wellbeing of adolescents with fathers' negative parenting possibly reducing adolescent wellbeing. Extrinsic life goals was a significant predictor of positive affect, while need frustration was a significant predictor of negative affect. These findings suggest parenting styles and basic psychological needs influence life aspirations and psychological wellbeing of learners in a developing country context.

Keywords: parenting styles, self-determination theory, basic psychological needs, goals and aspirations

Introduction

Parenting is the mechanism through which a child learns appropriate and inappropriate behaviour, experience right and wrong choices in decision-making, acquire skills; understand roles and norms of a community (Carr & Springer, 2010; Ford et al., 2009; Pérez & Cumsille, 2012). It plays a major part in child socialisation, providing an early understanding of the self (Baumrind, 1966; 1967; 1971; 1978; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Maccoby & Martin, 1983; Rudy & Grusec, 2006; Milevsky, Schlechter, Netter, & Keehn, 2007; Soenens et al., 2007; Latouf & Dunn, 2010). For example, quality of parenting is associated with general adjustment (Lamborn & Groh, 2009) and psychological wellbeing, including a healthy self-esteem and satisfaction with life (Roman, Mwaba, & Lens, 2008). By contrast, suboptimal parenting is associated with externalising behaviour, such as anti-social behaviour, social initiative and decision-making (Soenens, 2006; O' Conner & Scott, 2007). The adoption of intrinsic goals and aspirations could have positive implications for the future wellbeing and functioning of individuals (Deci & Ryan 2008; Niemiec, Ryan, & Deci, 2009). In addition, parents provide the environment to encourage the adoption of intrinsic goals and aspirations. Family and specifically parents, play a crucial role in providing environments which could either enhance or hinder the satisfaction of the basic psychological needs and subsequent wellbeing and personal growth of their children into well-adjusted adults (Grolnick, 2003; Soenens, 2006). Adolescence is a critical developmental stage for young people (Bray, Gooskens, Khan, Moses, & Seekings, 2010). The pursuit of certain goals has both positive and negative implications for adolescents. Much of the literature pertaining to basic psychological needs and their influence on the identification of goals and aspirations has been carried out in developed countries (Deci & Ryan 2008; Grouzet et al., 2005; Niemiec, Ryan, & Deci, 2009) but

the generalisability of this effect should be tested in other cultures (Ingrid et al., 2009). Ingrid et al. (2009) state that people's life aspirations reflect the culture and economic conditions in which they find themselves and that extrinsic aspirations are not necessarily detrimental, but may well contribute to the psychological wellbeing of individuals, especially in less affluent developing countries. Currently there is a dearth of South African research concerning basic psychological needs and their influence on goal and aspiration adoption in adolescents. Furthermore, no known study has collectively combined the variables of the current study within a single study. The current study contributes to new knowledge in South Africa, and may add to the international knowledge base regarding the influence of basic psychological needs in the adoption of goals and aspirations and adolescent psychological wellbeing. This area of research is important as it provides the impetus for understanding the content and adoption of the goals of adolescents, what the possible risk factors could be as well as their subsequent psychological wellbeing.

Parenting styles

Parenting styles refer to the approach parents have in guiding and directing their children. These approaches include authoritarian, authoritative and permissive parenting styles (Baumrind, 1991; 2005). The authoritarian parenting style is characterised by physical coercion, verbal hostility and non-reasoning/punitive dimensions. Authoritative parenting style has connection, regulation, and autonomy-granting dimensions. The dimension of indulgence is found in the permissive parenting style. Mothers and fathers have unique influences on their children. For example the impact of fathers' behaviours is dependent on how the child or adolescent understands 'what fathers are' instead of comparing with maternal parenting approaches (Overbeek et al., 2007). Previous international research suggests that paternal parenting is

vital and has been linked to different outcomes for children (Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008) in comparison to mothers. Specifically, a systematic review of longitudinal studies found that father involvement aided cognitive development of children and reduced behavioural problems in boys and psychological problems in young women. In addition, families in low socio-economic households were especially advantaged by father involvement as there was a reduction in child delinquency and economic disadvantage to the family (Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008). Parenting styles and to a limited extent parental practices have been shown to influence performance in school, self-esteem and self-worth, sympathy, social competence and behavioural problems as associated with family adversity and discipline, perceptions and so on (Aunola & Nurmi, 2004; Baumrind, 2005; Dumas et al., 2009; Endicott & Liopsis, 2005; Laible & Carlo, 2004; Vieno et al., 2009). Limited research has been done linking parenting to the adoption of life goals and aspirations (Laible & Carlo, 2004; Sheldon & Kasser, 1998). Research by Bray et al. (2010) showed that among South African children, sharing a home with their parents did not guarantee them quality of care and relationships. According to Bray et al. (2010), young people would respond to the shortfall in their care in order to protect their wellbeing through silence, reaction against strategic communication or residential moves. Thus, it can be assumed that adolescent goals and aspirations, as well as their psychological wellbeing could be shaped by their experience of parenting.

Psychological needs and psychological wellbeing

The natural trajectory towards self-enhancement and self-motivation is based upon the satisfaction of three basic psychological needs (Deci & Ryan, 2000; 2003; Vansteenkiste et al., 2005; 2006). These are the need for relatedness, autonomy and competence, and they are said to be innate and universal, directing human motivation and development. The satisfaction of these needs result in a state of wellbeing (Deci & Ryan, 2008; Deci & Ryan, 2000) or more specifically psychological wellbeing. Psychological wellbeing refers to the internal experiences of individuals and their own perception of their lives (Diener & Suh, 1997). It is often indicated by (but not limited to) a state of happiness, being satisfied with life and having a positive sense of self while simultaneously acknowledging that there are realities of pain and disappointment which do not impact on long-term wellbeing (Huppert, 2009). According to Huppert (2009) there are particular indicators, which alert one to effective psychological wellbeing. These include the development of the individual's potential, control over one's life, having goals and aspirations and experiencing positive relationships. This could be very closely related to the satisfaction of psychological needs.

In meeting psychological needs, a distinction is made between intrinsic goals (e.g., affiliation, personal growth, self-acceptance, physical health and prosocial behaviour or community contribution) and extrinsic goals (e.g., wealth, fame and image or physical appearance, social praise and rewards) (Kasser & Ryan, 1993; 1996; Strassberg, Gilbert,

& Russel, 2010). Thus aspirations toward intrinsic goals are satisfying for the self (Ryan & Deci, 2000a; 2000b), while extrinsic goals focus outward, centering on external manifestations (Williams, Cox, Hedberg, & Deci, 2000).

There is evidence to suggest that having strong aspirations for extrinsic rather than intrinsic outcomes is negatively associated with mental health indicators; whereas placing more importance on intrinsic than on extrinsic aspirations has been found to be positively associated with mental health indicators such as self-esteem and self-worth, pro-social behaviour, performance in school, sympathy, social competence and behaviour (Kasser & Ryan, 1993; 1996; Laible & Carlo, 2004; Vieno, Nation, Pastore, & Santinello, 2009). Studies have reported self-reported attainment of intrinsic rather than extrinsic aspirations to be positively associated with wellbeing (Deci & Ryan, 2008; Grouzet, et al., 2005). For instance, adolescents who aspire towards wealth and financial success were at risk for several psychological disorders (Deci & Ryan, 2008; Schmuck, Kasser, & Ryan, 2000). Similarly, Sheldon, and Kasser (2008) found that when people were under psychological 'threat', such as unemployment they were more likely to pursue extrinsic goals and aspirations rather than intrinsic goals. In a country such as South Africa, where the majority of people live in low socio-economic environments, young people would want to aspire to something better, with the focus often being on wealth, which in developed countries has been suggested to result in ill-being rather than psychological wellbeing. However, this may not be the case for a developing country (Ingrid et al., 2009) such as South Africa.

The South African situation

Transition into adulthood in South Africa provides opportunities to focus decision-making regarding career path and thus enter either higher education or (un)employment (Maree, 2010; 2013). Often these decisions are based on previous goals to aspire to a better life, to be a better person, help others, to have wealth or to be famous (Ingrid et al., 2009; Sheldon & Kasser, 2008). The National Curriculum Statement for Grades 10–12 (Department of Education, 2003) stipulates that goal-setting, decision-making and career counselling are part of the school curriculum and are therefore taught at schools. What motivates South African learners is in need of study. The learners may be variously motivated by society (such as poverty in the family) and media (role models such as successful singers) to aspire to being wealthy and famous (Sheldon & Kasser, 2008). Parents could also covertly or overtly encourage their children to pursue a particular life path (goals and aspirations) by the parenting approaches they use (Jodl et al., 2001; Malmberg, Ehrman, & Lithen, 2005). For instance, a South African qualitative study (Robbins, Wallis, & Dunston, 2003), suggested that students perceived family and community orientation as offering salient support in aspiring towards career decision-making. Furthermore, in South Africa, previous studies indicate that adolescents who live in low to middle income households do not have a good relationship with their fathers (De Jager, 2011), which might affect the pursuit of

their goals and aspirations and subsequently their interest in school and internal academic self-regulation. According to Maree (2010) the social environment or context is important for how individuals make sense of their interactions and relationships within these contexts so that they can construct a purpose (goals) for themselves and subsequently design a life which is “experienced as satisfactory and that can be redesigned as needs, interest and life experiences change” Maree (2010, p. 365). By implication then, the potential adoption and implementation of the life goals and aspirations of adolescents could potentially be affected by both external factors (parents) and internal factors (basic psychological needs) and therefore have ramifications for the broader South African society.

The goal of this study was therefore to examine the role of parenting styles and basic psychological needs in the adoption of goals and aspirations of learners and for their psychological wellbeing (positive versus negative affect). The study sought to answer the following questions: (1) what is the influence of parenting styles and basic psychological needs on the adoption of life goals and aspirations and psychological wellbeing of South African learners. Findings could extend theory and practice effects of parenting on goals and aspirations of learners (Williams, Cox, Hedberg, & Deci, 2000; Lekes, Gingras, Philippe, Koestner, & Fang, 2010). For South Africa, this is new information.

Method

Participants and setting

The study sample consisted of learners in Grade 11 at public schools from eight school districts in the Western Cape of South Africa. The final sample included 853 participants (mean age = 16.96, SD = 1.12); females = 57.0%; Coloured 45.7%; (see Table 1 for participant demographics).

The majority of the learners ($n = 517$; 60.6%) spoke English as their home language, 197 (23.1%) spoke IsiXhosa and 119 (14%) had Afrikaans as their home language. Only 20 (2.3%) spoke another language. The majority of the learners ($n = 490$; 57.4%) lived with both their parents, 249 (29.2%) lived with their mothers, 43 (5%) with their fathers and 70 (8.2%) with a guardian/caregiver.

Table 1. Participant demographic characteristics

Variables	$N = 853$
Gender	
Male	364 (42.7%)
Female	486 (57.0%)
Ethnicity	
Coloured	390 (45.7%)
Black African	225 (26.4%)
White	171 (20%)
Indian/Asian	56 (6.6%)
Living arrangements	
Both Parents	490 (57.4%)
Only mothers	249 (29.2%)
Only fathers	43 (5%)
Guardian/caregiver	70 (8.2%)
Home Language	
English	517 (60.6 %)
Afrikaans	197 (23.1%)
IsiXhosa	119 (14.0%)
Other	20 (2.3%)

Measures

The data were collected by means of self-report questionnaires. The Parenting Style and Dimensions Questionnaire (PSDQ: Robinson, Mandleco, Olsen, & Hart, 2001), Psychological Needs Scale (PNS: Sheldon & Hilpert, 2012), Aspiration Index (AI: Kasser & Ryan, 1996) and Positive and Negative Affect Schedule (PANAS: Watson, Clark, & Tellegen, 1988) were administered. Participants also provided data on their demographic characteristics (gender, ethnicity, age, etc.)

The PSDQ is a 32-item questionnaire assessing the perception of mothers and fathers about their style of parenting: authoritarian, authoritative and indulgence/permissive. Each dimension has between 4 and 5 items. Participants respond on a 4-point Likert scale (1 = not at all like her/him; 4 = a lot like her/him). The Cronbach alpha coefficients observed in the present study were as follows: 0.92 for authoritative parenting style, 0.88 for authoritarian parenting style and 0.62 for permissive parenting style for mothers; 0.96 for authoritative parenting style, 0.94 for authoritarian parenting style and 0.78 for permissive parenting style for fathers.

The PNS is an 18-item measure of the three needs for competence, autonomy and relatedness. For each of the three needs, three items assess the degree of satisfaction and three items assess the degree of frustration. Participants were asked to respond on a 4-point Likert scale ranging from 1 = not at all true to 4 = very true. The Cronbach alpha coefficients observed in the present study were 0.73 for need satisfaction and 0.74 for need frustration.

The AI is a measure of people's aspirations in seven categories: the extrinsic aspirations of wealth, fame, and image, and the intrinsic aspirations of meaningful relationships, personal growth, and community contributions; and the aspiration of good health which could not be defined clearly as either extrinsic or intrinsic. Participants rate the importance to themselves of each aspiration by responding on a 4-point Likert scale ranging from 1 = somewhat important to 4 = very important. The Cronbach alpha coefficients for the study sample were 0.90 for extrinsic life goals and 0.81 for intrinsic life goals.

The PANAS is a measure of psychological wellbeing, more specifically positive and negative affect. It comprises of 10 positive and 10 negative affects. Participants indicate on a 5-point Likert scale to what extent they experienced those 10 feelings over the past few weeks (1 = very slightly or not at all; 5 = extremely). Mean scores are calculated for the 10 positive and 10 negative affect items. The Cronbach alpha coefficients for the current study were 0.81 for positive affect and 0.78 for negative affect.

Procedure

Permission to conduct the study was provided by the Western Cape Education Department and the principals and teachers of the participant schools. Learners individually assented to the study. The purpose of the study was explained to the learners and a date, time and venue was arranged with the teacher for those learners who were interested and consented to participate in the study. The questionnaires were self-administered and completion of the questionnaire took approximately 30–45 minutes.

Data analysis

The data were analysed using the Statistical Package for Social Science (SPSS) version 22. Two separate hierarchical regression analyses were conducted. One hierarchical regression analysis was to predict positive affect and the other one was for negative affect. A Bonferonni method was applied using a threshold of significance at $p < 0.005$.

Results

In Table 2 the majority of the participants indicated that their basic psychological needs were satisfied ($M = 2.82$, $SD = 0.50$), they aspired to extrinsic life goals ($M = 3.34$, $SD = 0.36$) and experienced positive affect or psychological wellbeing ($M = 3.51$, $SD = 0.76$). For both fathers and mothers, parenting scores were highest for the authoritative parenting style and lowest for the authoritarian parenting style. For all three types of parenting styles, mothers scored significantly higher than fathers: authoritative ($t(761) = 10.74$, $p < 0.001$, $d = 0.42$); authoritarian ($t(762) = 5.70$, $p < 0.001$, $d = 0.20$); permissive ($t(763) = 6.44$, $p < 0.001$, $d = 0.25$). However, Cohen's d showed that all three effects were rather small.

Maternal authoritarian parenting was significantly positively associated with the importance placed on extrinsic life goals ($r = 0.25$, $p < 0.01$), need frustration ($r = 0.34$, $p < 0.01$) and negative affect ($r = 0.23$, $p < 0.01$). A significantly negative association was found with positive affect ($r = -0.14$, $p < 0.01$). Paternal authoritarian parenting was significantly positively associated with the importance placed on extrinsic life goals ($r = 0.10$, $p < 0.01$), need frustration ($r = 0.16$, $p < 0.01$) and negative affect ($r = 0.18$, $p < 0.01$). No significant relationship was found with positive affect (see Table 3).

Predicting positive affect from negative affect

Table 4 shows the results of the hierarchical regression analyses to predict positive affect from negative affect. In Step 1 positive and negative affect, as indicators of psychological well- and ill-being, were regressed on parenting styles. In Step 2 intrinsic and extrinsic goal importance were added as two additional predictors, and in Step 3 positive and negative affect were regressed on parenting styles, life goal importance and finally on need satisfaction and need frustration.

Table 2. Descriptive statistics of the variables

Variables	<i>M</i>	<i>SD</i>
Satisfaction index	2.82	0.50
Frustration index	2.31	0.60
Intrinsic life goals	2.84	0.47
Extrinsic life goals	3.34	0.36
Positive affect	3.51	0.76
Negative affect	2.42	0.73
Mother authoritative parenting style	3.05	0.69
Father authoritative parenting style	2.63	0.96
Mother authoritarian parenting style	2.19	0.70
Father authoritarian parenting style	2.01	0.90
Mother permissive parenting style	2.37	0.68
Father permissive parenting style	2.11	0.86

Positive affect

In step 1, both maternal ($\beta = 0.23$, $p = 0.000$) and paternal authoritative ($\beta = 0.12$, $p = 0.015$) parenting styles significantly and positively predicted positive affect. Only maternal authoritarian parenting styles significantly negatively predicted positive affect ($\beta = -0.11$, $p = 0.012$). These predictions remained for step 2 when intrinsic and extrinsic life goal importance were added to the model. Intrinsic life goal importance significantly and positively predicted positive affect ($\beta = 0.15$, $p = 0.000$). In step 3, when adding need frustration and satisfaction; neither paternal authoritative parenting nor intrinsic life goal importance were significant predictors of positive affect. However, extrinsic life goal importance ($\beta = -0.07$, $p = 0.047$) became a significant, negative predictor of positive affect. The final model explained 26% of the variance for positive affect.

Negative affect

In step 1, significant positive predictors of negative affect were both maternal ($\beta = 0.13$, $p = 0.003$) and paternal authoritarian ($\beta = 0.13$, $p = 0.003$) and maternal permissive parenting styles ($\beta = 0.09$, $p = 0.043$). Significant negative predictors of negative affect were maternal ($\beta = -0.14$, $p = 0.000$) and paternal authoritative parenting styles ($\beta = -0.17$, $p = 0.001$). These predictions remained significant for step 2 when intrinsic and extrinsic life goal importance were added to the model. Intrinsic life goal importance significantly positively predicted negative affect ($\beta = 0.11$, $p = 0.002$). In step 3, when adding need frustration and satisfaction, neither maternal authoritarian, permissive parenting styles nor intrinsic life goal importance were significant predictors of negative affect. However, need frustration ($\beta = 0.42$, $p = 0.000$) became a significant positive predictor of negative affect. The final model explained 26% of the variance for negative affect.

Discussion

The aim of this study was to examine the role of parenting styles and basic psychological needs in the adoption of goals and aspirations as well as the psychological wellbeing (positive versus negative affect) of adolescent learners. The learners were in the transitional stage of adolescence and developmentally found themselves within a period of change characterised by tremendous pressure and upheaval – mentally, physically and emotionally (Thom et al., 1998; La Guardia & Ryan, 2002; Bray et al., 2010).

An authoritative parenting style was the most prevalent perceived parenting style, with mothers being perceived more positively than fathers. This finding is consistent with previous local research, which also found high prevalence levels of maternal authoritative parenting styles (Latouf & Dunn, 2010; Makwakwa, 2011). An authoritative parental style is characterised by warmth, support and nurturing (Baumrind, 2005). Research has shown that authoritative parenting type is associated with fostering personal and social responsibility and enhancing self-development (Aldhafri, 2014; Baumrind, 2005; Nyarko, 2011). Supporting literature indicates that mothers, who use an authoritative parenting style, are more involved and

are more aware of the everyday activities of the child (Hiramura, Shikai, Chen, Matsuoka, & Kitamura, 2010).

In relation to goals and aspirations, the learners placed more importance on intrinsic than extrinsic goals. This was an unexpected finding as research suggests that adolescents are more inclined to focus on extrinsic goals given the socio-economic environment (Ingrid, 2009) and popular media. The learners may be attracted to more intrinsic goal pursuits because South African young people consider giving back to others and may aspire to collectivist, rather than individualist thinking. A possible explanation for the latter could be the ethos by which many South Africans and their communities live, that of *Ubuntu*, “*I am because of you*”, and so having an attitude of benevolence is only natural. In addition there may also be an influence of peers or other interpersonal relationships on having a

sense of community orientation, which could allow for the adolescent to develop a sense of psychological wellbeing from active citizenship.

Authoritative parenting predicted intrinsic life goals and aspirations, whereas authoritarian and permissive parenting predicted extrinsic life goals. These results were expected and in line with previous socialisation research (McKinney et al., 2014; Milevsky et al., 2007; Rudy & Grusec, 2006; Soenens et al., 2007), which found that more positive parenting was linked to positive adolescent outcomes. Furthermore, the findings from the current study provide similar results to more local African research, which highlighted the important role of parents in the wellbeing and adjustment of adolescents (Ntinda, Mpofu, Bender, & Moagi, 2014; Roman, 2014). This finding also highlights the role of parents providing the social

Table 3: Correlations between the variables

Variables	Int.oals	Ext.Goals	Satisf.	Frustr.	MAutive	FAutive	MAutrian	FAutrian	MPerm	FPerm	Pos.Affect
Ext.Goals	0.20**										
Satisfaction	0.30**	0.25**	-0.07*	-0.06	0.27**	-0.01	0.38**	0.23**	0.30**	0.06	-0.12**
Frustration	0.19**	0.14**	0.29**	-0.07	0.09*	0.34**	0.50**	0.55**	-0.04	0.08*	
MAutive	0.11**	0.02	0.21**	0.34**	0.07*	0.06	0.19**	-0.05	0.15**		
FAutive	0.07*	0.10**	-0.02	0.16**	0.30**	0.62**	-0.14**	0.18**			
MAutrian	0.03	0.25**	-0.02	0.20*	0.12**	0.17**	0.23**				
FAutrian	-0.02	0.10**	-0.01	0.09*	0.23**	-0.11**					
Mperm	-0.06	0.16**	0.08*	-0.10**	-0.13**						
Fperm	-0.01	0.19**	0.48**	0.48**							
Pos.Affect	0.18**	0.03	-0.13**								
Neg.Affect	0.07*	0.05									

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

Table 4: Regression analyses predicting positive and negative affect (in parentheses)

	<i>b</i>	SE <i>b</i>	β	<i>t</i>	<i>p</i>
Step 1					
Constant	2.96 (2.31)				
Maternal authoritative parenting	0.25 (-0.15)	0.04 (0.04)	0.23* (-0.14*)	5.72 (-3.66)	0.000 (0.000)
Paternal authoritative parenting	0.10 (-0.14)	0.04 (0.04)	0.12* (-0.17*)	2.44 (-3.45)	0.015 (0.001)
Maternal authoritarian parenting	-0.12 (0.14)	0.05 (0.05)	-0.11* (0.13*)	-2.52 (2.95)	0.012 (0.003)
Paternal authoritarian parenting	-0.06 (0.11)	0.04 (0.04)	-0.07 (0.13*)	-1.49 (2.96)	0.136 (0.003)
Maternal permissive parenting	-0.06 (0.10)	0.05 (0.05)	-0.05 (0.09*)	-1.16 (2.02)	0.248 (0.043)
Paternal permissive parenting	0.03 (0.07)	0.05 (0.05)	0.03 (0.07)	0.56 (1.34)	0.57 (0.180)
Step 2					
Constant	1.90 (1.63)				
Maternal authoritative parenting	0.23 (-0.17)	0.04 (0.04)	0.21* (-0.16*)	5.29 (-4.02)	0.000 (0.000)
Paternal authoritative parenting	0.09 (-0.14)	0.04 (0.04)	0.10* (-0.18*)	2.17 (-3.64)	0.030 (0.000)
Maternal authoritarian parenting	-0.15 (0.13)	0.05 (0.05)	-0.14* (0.12*)	-3.05 (2.71)	0.002 (0.007)
Paternal authoritarian parenting	-0.05 (0.12)	0.04 (0.04)	-0.06 (0.14*)	-1.23 (3.07)	0.220 (0.002)
Maternal permissive parenting	-0.04 (0.12)	0.05 (0.05)	-0.03 (0.11*)	-0.68 (2.38)	0.497 (0.018)
Paternal permissive parenting	0.03 (0.07)	0.05 (0.05)	0.03 (0.08)	0.54 (1.46)	0.588 (0.144)
Intrinsic goal importance	0.31 (0.22)	0.08 (0.07)	0.15* (0.11*)	4.09 (3.06)	0.000 (0.002)
Extrinsic goal importance	0.03 (-0.03)	0.04 (0.04)	0.03 (-0.02)	0.68 (-0.60)	0.50 (0.549)
Step 3					
Constant	1.30 (1.31)				
Maternal authoritative parenting	0.10 (-0.11)	0.04 (0.04)	0.09* (-0.10*)	2.53 (-2.72)	0.012 (0.007)
Paternal authoritative parenting	0.03 (-0.09)	0.04 (0.04)	0.04 (0.11*)	0.90 (-2.56)	0.370 (0.011)
Maternal authoritarian parenting	-0.12 (0.01)	0.05 (0.04)	-0.11* (0.01)	-2.66 (0.170)	0.008 (0.865)
Paternal authoritarian parenting	-0.03 (0.10)	0.04 (0.04)	-0.03 (-0.11*)	-0.71 (2.70)	0.48 (0.007)
Maternal permissive parenting	0.01 (0.08)	0.05 (0.05)	0.00 (0.07)	0.100 (1.75)	0.920 (0.081)
Paternal permissive parenting	0.04 (0.04)	0.05 (0.05)	0.04 (0.04)	0.80 (0.89)	0.425 (0.373)
Intrinsic goal importance	0.13 (0.07)	0.07 (0.07)	0.06 (0.04)	1.75 (1.07)	0.080 (0.286)
Extrinsic goal importance	-0.08 (-0.02)	0.04 (0.04)	-0.07* (-0.02)	-1.99 (-0.59)	0.047 (0.554)
Need frustration	-0.03 (0.51)	0.05 (0.04)	-0.03 (0.42*)	-0.72 (-11.84)	0.474 (0.000)
Need satisfaction	0.66 (-0.07)	0.06 (0.05)	0.44 (-0.05)	12.00 (-1.33)	0.000 (0.183)

Note Positive affect: $\Delta R^2 = 0.09$ for Step 1; $\Delta R^2 = 0.11$ for Step 2; $\Delta R^2 = 0.26$ for Step 3

Note Negative affect: $\Delta R^2 = 0.10$ for Step 1; $\Delta R^2 = 0.11$ for Step 2; $\Delta R^2 = 0.26$ for Step 3

context, which can either facilitate or impede children's intrinsic motivation and internalisation (Williams et al., 2004). Parental styles could be important in promoting certain goals and aspirations. Furthermore parents differ in the approaches they use with their children (Gamble, Ramakumar, & Diaz, 2007). In the current study, father authoritarian parenting style predicted negative affect (psychological wellbeing) whereas mother authoritative parenting style predicted positive affect. Previous South African research highlights the unique contributions of fathers to the parent-child relationship (Nduna, 2015; Sylvester & Bojuwoye, 2011). For example Sylvester and Bojuwoye (2011) found that adolescents considered the roles of fathers to be protectors, guiders and authority figures. Similarly, in Nduna's (2015) study, the importance of having a father's surname was identified as having implications for developing an identity. Often fathers are not primary supportive figures for children in comparison to mothers (Overbeek et al., 2007) because they may have additional support, which mothers do not necessarily have. This study clearly highlights the important role that fathers' parenting style plays in psychological wellbeing, specifically negative affect among adolescent learners.

Implications for theory and practice

Environments, which provide autonomy support, lead to qualitatively superior life orientation goals and aspirations. This effect might be from high levels of self-determination being conducive to more adaptive cognitive, affective and behavioural life outcomes (Deci & Ryan, 2000; Deci & Ryan, 2008b; Joussemet et al., 2008). Positive parenting and intrinsic goals and aspirations have been found to be associated with positive self-worth and self-discovery (Kasser & Ryan, 1993; 1996; Ryan & Deci, 2000a; 2000b). The results of the current study extend on those of previous studies highlighting the important role which parenting plays in the psychological wellbeing of adolescents as well as their future goals and aspirations. In addition, the study highlights the unique contributions of fathers to the parent-child relationship. However, very importantly, although this research extends the knowledge on this topic in developed countries, for a developing country such as South Africa, this information is unique.

Conclusion and limitations of the study

The findings of this study lead to the conclusion that **positive parenting and basic psychological needs influence life goals and aspirations of adolescents**. A limitation of the current study is the cross-sectional research design and the focus only on adolescents in the Western Cape Province of South Africa. This type of research design only allows for one segment of the given population to be examined at one point in time, which potentially suggests that the findings of the current study may not generalise to the population of South African youth at large. This study used self-report measures, which are subject to social desirability influences. The views of parents were not solicited and data from parents and adolescents would provide a more complete picture of influences on adolescent life orientations.

Acknowledgements

The first author received funding from the National Research Foundation (NRF) to conduct this study.

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Current research on parenting styles, dimensions, and beliefs

Judith G Smetana

For decades, parenting has been characterized in terms of **broad global styles**, with **authoritative parenting** seen as most beneficial for children's development. Concerns with greater sensitivity to cultural and contextual variations have led to greater specificity in defining parenting in terms of different parenting dimensions and greater consideration of the role of parenting beliefs in moderating links between parenting and adjustment. New research includes 'domain-specific' models that describe parents as flexibly deploying different practices depending on their goals, children's needs, and the types of behaviors towards which parenting is directed. These trends are described, and directions for future research are discussed.

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Current Opinion in Psychology 2017, 15:19–25

This review comes from a themed issue on **Parenting**

Edited by **Marinus H Van IJzendoorn** and **Marian J Bakermans-Kranenburg**

For a complete overview see the [Issue](#) and the [Editorial](#)

Available online 20th February 2017

<http://dx.doi.org/10.1016/j.copsyc.2017.02.012>

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Introduction

Despite significant progress in understanding parenting and its effects for children's development, there are **ongoing debates about how best to conceptualize and measure it**. For decades, parenting was characterized in terms of **global**, consistent, and stable parenting styles. However, studies examining variations along **different parenting dimensions** now predominate, due to concerns about whether styles accurately capture contextual variations and have the same meaning in different groups. These concerns also have led to new, more granular and '**domain-specific**' models that are more flexible and situational. These issues are discussed below, along with recommendations for future directions in studying parenting.

Parenting styles

Description

Baumrind's influential model of parenting styles describes parenting as a gestalt of integrated parenting practices, best studied using pattern-based approaches [1,2]. Her original description of the authoritative, authoritarian, and permissive parenting styles has been reconceptualized in terms of two orthogonal dimensions of **demandingness and responsiveness**, leading to the addition of a fourth, rejecting-neglecting style [3]. Proponents claim that authoritative parenting, where parents are highly responsive to their children's needs but also set reasonable limits and demand mature behavior, is most beneficial for children's and adolescents' development across contexts and cultures [2,4,5]. **This conclusion remains controversial**, however [6]. In response to critiques, Baumrind and colleagues [7,8*] have refined the **definition of authoritative parenting and clarified the distinction between detrimental (e.g., coercive) and positive (e.g., confrontive) forms of parental power assertion**.

Parenting styles were originally conceptualized as transactionally associated with social competence, but studies have mostly focused on **parent-to-child effects**. Advances in statistically modeling have led more rigorous tests of **bidirectionality**. One recent study found that adolescent behavior had a much stronger effect on parenting styles than the reverse [9], whereas another [10*] found that effects varied by parenting style. Significant child effects were found for permissive-indulgent parenting, **no bidirectional effects were found for authoritative parenting**, and bidirectional effects were observed for mother but not child-rated authoritarian parenting.

Cultural influences

Authoritarian parenting is widespread in non-Western cultures and among lower socioeconomic status (SES) and ethnic/racial minority parents in the U.S. Moreover, these factors may converge, as immigrant and ethnic minority families often live in poor communities characterized by dangerous neighborhoods, where authoritarian parenting may have protective effects [11**]. This has led to questions about whether authoritarian parenting is necessarily maladaptive in some contexts and to the claim that parenting must be assessed in terms of particular cultural values and indigenous concepts [12].

For instance, although Chinese parenting is often described as authoritarian, punitive, and reflecting Confucian, child-centered, and beneficial concerns with strictness and child training [12]. Chinese mothers also have been popularly described as "tiger moms" [13] who

employ fierce discipline to facilitate achievement and development. Careful empirical research does not support this view, however [14[•],15]. Person-centered analyses of Asian American parents' parenting dimensions revealed four profiles, one of which fit the description of 'tiger parenting.' However, this pattern was not common and was associated with poor adjustment, whereas the most typical and adaptive profile reflected supportive parenting.

Arab parents in the Middle East also are described as authoritarian [16], although research does suggest significant variability. Recent person-centered analyses of five parenting dimensions, assessed in a sample of Arab refugee youth living in Jordan, found that the most common profile for both mothers and fathers was consistent with authoritative parenting [17^{••}] – that is, low levels of harsh, punitive parenting and psychological control and high levels of support, behavioral control, and parental knowledge of activities, and this profile was associated with better adjustment. These studies provide some support for the claim that components of authoritative parenting are beneficial for child and adolescent development.

Beliefs as moderators

Harsh or physical discipline, yelling or scolding, expressing disappointment, and shaming, all of which are hallmarks of authoritarian parenting, have detrimental effects on child adjustment in cultures around the world. For instance, parents who spank generally believe that it socializes positive behavior. However, large-scale studies in the U.S. [18^{••}] and in cultures varying in their use of these practices [19^{••}] show that spanking generally has negative effects for children's adjustment and social competence, although these practices are less harmful (although still negative) when they are more culturally normative [20]. A recent study found that parental shaming is more culturally normative in both rural and urban China than in an urban sample in Canada and that it was seen as less psychologically harmful among rural Chinese (where it was more normative) than Canadians, but there were also interesting developmental trends. Across groups, 10–11 and 13–14 year-olds evaluated shaming more negatively than 7–8 year-olds and viewed it as more negative for their psychological wellbeing [21^{••}].

Beliefs about parental authority legitimacy also influence responses to parenting. Adolescents view parental authority as illegitimate when parents control personal issues (*e.g.*, pertaining to privacy, bodily control, and personal preferences) [22], see also Kobak, *in press* (this issue). Across cultures, children develop a personal domain because it satisfies basic needs for autonomy, although there are cultural variations in its content and boundaries [22]. However, individual differences in legitimacy beliefs mediate or moderate links between parenting and adolescent adjustment. Studies have found that

parent supervision and monitoring leads to greater adolescent disclosure about their activities to parents, but only when legitimacy beliefs are strong [23^{••}]. Furthermore, stronger authority legitimacy beliefs regarding free-time activities (which are generally considered personal issues) are associated with adolescents' greater compliance with parents' rules [24[•]]. Legitimacy beliefs also mediate the association between parenting styles and juvenile delinquency [25], with authoritative parenting associated with stronger legitimacy beliefs and in turn, less juvenile delinquency over time. The opposite was found for authoritarian parenting. These studies highlight adolescents' role as active agents in their development.

Dimensional approaches

In response to the cultural critiques of parenting styles, current research focuses on discrete dimensions of parenting, providing greater specificity in understanding parenting effects. For instance, behavioral control has been distinguished from psychological control and parental knowledge.

Psychological control

Psychological control, which is characteristic of **authoritarian parenting**, includes parental intrusiveness, guilt induction, and love withdrawal and is associated across cultures with internalizing and externalizing problems [26,27]. Barber and his colleagues [28] have identified *parental disrespect* as the specific mechanism causing these negative effects and have demonstrated that disrespect accounts for more of the variance in maladjustment than psychological control, broadly measured. Other than agreeableness, there is little evidence that personality variables moderate associations between psychological control and problem behavior [29[•]].

Drawing on self-determination theory (SDT), Soenens and Vansteenkiste [30] proposed a narrower conceptualization of psychological control as **internally pressuring parenting**, or conditional approval through manipulation of feelings of guilt, shame, and separation anxiety (rather than external pressure from punishment, rewards, or removing privileges). Controlling parenting was associated with more oppositional defiance, need frustration, and in turn, internalizing and externalizing problems than was autonomy-supportive parenting [31[•],32]. Finally, others [33] have proposed that parental psychological control involves intrusions into adolescents' personal domain, leading to feelings of overcontrol and in turn, maladjustment [34].

Behavioral control

In contrast to psychological control, appropriate levels of behavioral control guide and regulate children's behavior by providing clear, consistent parental expectations and the structure to facilitate competent and responsible

behavior. Behavioral control includes setting high standards and making and enforcing rules through supervision and monitoring. However, at high levels, behavioral and psychological control become blurred, causing detrimental effects for development [34].

The “monitoring debate”

Parental monitoring has been viewed as preventing adolescent problem behavior (drug use, truancy, antisocial behavior), because it allows for some autonomy while permitting parents to keep track of their teens. However, these studies typically measured parental *knowledge* of adolescents’ out-of-home activities, not monitoring [35,36]. Many studies in Western countries have confirmed that parental knowledge comes primarily from adolescent disclosure of their activities, not parents’ solicitation of information or behavioral control. Among Palestinian refugee youth in Jordan, adolescent disclosure, maternal solicitation, and behavioral control all were associated with greater maternal knowledge, but as in Western societies, only child-driven processes (less disclosure, more secrecy) were associated with greater norm breaking and anxiety [37•].

This ‘monitoring debate’ [38] has led to much research examining how adolescents manage information with their parents and the parenting and parent-adolescent relationship qualities, such as trust and supportive relationships [39] that facilitate adolescents’ willing disclosure to parents (see also Kobak, in press, this issue). More recent research has attempted to identify situations where parental monitoring is effective (or not). For example, although used infrequently, parental snooping provides parents with additional information about teens’ activities, but violates adolescents’ expectations for privacy and is thus associated with problematic family functioning [40•].

Parents’ reactions to adolescent disclosure are important; negative reactions cause a cascade of ill effects, including teens’ negative feelings about parents and feelings of being controlled, and in turn, increased secrecy and declines in disclosure [41]. Furthermore, although solicitation of information is seen as intrusive and controlling, it does reduce antisocial behavior over time among early adolescents who spend a lot of time unsupervised and challenge parents’ legitimate authority [42]. Reactions to parental monitoring are also contextually sensitive. Negative reactions are greater when parent-adolescent relationships are lower in warmth and parental legitimacy beliefs are weaker [43•]. More generally, parental monitoring is often considered effective in keeping children out of trouble when they live in dangerous or violent neighborhoods. However, controlling for parental education and family income, recent large-scale research in nine countries found little evidence that parental

monitoring moderated the links between neighborhood danger and children’s aggressive behavior [44].

Recent research also has examined the effects of parental monitoring of adolescents’ use of different media. A longitudinal study [45] found that *active monitoring* (parental discussion to encourage a more critical stance) was most common in early adolescence and that it, as well as *restrictive monitoring* (how much and over what parents limit access), declined in middle adolescence, while actively choosing to do nothing increased. Active media monitoring had positive effects on adolescents’ adjustment over time, whereas restrictive media monitoring did not [46]. A meta-analysis [47•] showed that active monitoring protected against aggression, sexual involvement, and substance use, but not media time use; thus, it may be effective in providing developmentally appropriate autonomy. Monitoring of media use is a timely and important topic, but future research should disaggregate adolescents’ use of different types of media and focus on new, emerging forms of social media, some of which make parental monitoring increasingly challenging.

What do parents want to know about adolescents’ activities? A mixed methods study [48•] found that U.S. mothers of middle adolescents ‘always’ wanted to know about teens’ dangerous, illegal, or risky activities, academic performance and schoolwork, and interpersonal relationships. Mothers’ desires to know about teens’ activities declined over time, with psychological control and positive and negative relationship quality predicting initial levels as well as the trajectory of beliefs. Most mothers stated that there was nothing they did not *want* to know but that they did not necessarily *need* to know everything.

Domain-specific parenting

New ‘domain-specific’ models have begun to describe **parenting as multifaceted** and **situationally determined**. That is, parents are seen as flexibly deploying different practices or strategies in various situations. Importantly, children also interpret parenting behaviors, so similar practices may have different meanings depending on children’s developmental status and cultural context. Proponents of these approaches claim that systematic consideration of these factors will lead to better precision both in describing parenting and in understanding its effects.

Adopting a behavioral systems approach, Grusec and Davidov [49•] described parenting in terms of the different childrearing goals and needs that are activated in different situations. They describe five domains of socialization: *protection* (security, protection against harm), *control* (acquiring societal expectations, avoiding threats to autonomy occurring through parental overcontrol), *guided learning* (mastery of specific skills), *group participation*

(being part of a social group), and *reciprocity* (reciprocating others' behavior). These different domains are seen as associated with different parenting skills and practices, resulting in the development of different competencies. This model is promising but will require more elaboration regarding how to identify the relevant domains operative in particular situations. Specific hypotheses about links between domain-specific parenting and developmental outcomes need to be tested.

Smetana and her colleagues have proposed a different domain-specific approach that focuses on the development of different types of social knowledge and behavior: *moral* (justice, fairness, others' welfare), *social-conventional* (contextually determined norms), and *prudential* (comfort, safety, harm to self), and *personal* issues [50^{••}, 51^{••}]. Observational research has found that social interactions vary by domain and that mothers' (and peers') responses vary for different types of transgressions [52]. New research shows that mothers communicate norms to toddlers through emotional vocal signals [53, 54[•]]; signals are more intense and angry in response to moral transgressions, more fearful in response to prudential violations, and more comforting and playful in response to prudential and pragmatic transgressions.

Domain-specific models have shown that links between parental behavioral control and adolescent adjustment vary by domain [55]. Further, family decision-making (whether parents or teens decide issues jointly, alone, or with input from others) changes with age and varies by domain [56]. Analyses also have examined within-family differences, including how links between family decision-making and autonomy vary for first- versus second-born offspring [57, 58]. For instance, an 11-year longitudinal study of families with two children found that developmental trajectories differed by birth order [57]. Parents reported that first-borns had greater autonomy than second-borns, particularly when the first-born sibling reached age 10 and the second-born was younger. However, when siblings at the same age were compared, decision-making autonomy was greater among second- than first-borns, particularly in middle childhood and early adolescence. Second-borns may seek more autonomy to differentiate themselves from their older siblings, or perhaps to gain the autonomy they see their older siblings as enjoying.

Conclusions

Research on parenting is moving towards ever-greater specificity. This has led to a more refined understanding of parenting, particularly regarding different forms of control and their links with adjustment. Research has upended the common wisdom about the importance of parental monitoring for healthy adolescent development and has led to greater emphasis on child-driven processes such as adolescent disclosure. There has been increased

emphasis on how the effects of parenting on children's development are mediated or moderated by different beliefs and on the different meanings behaviors have in different cultural contexts. And although not elaborated here, several new forms of parenting, such as helicopter parenting [59, 60] have been described. Despite these advances, greater precision is needed in linking parenting dimensions or domains with specific child outcomes. In addition, research should focus more on developmental competencies and positive outcomes, not just maladjustment. Research also should consider how different social contexts interact (*e.g.*, the influence of parents versus peers).

Furthermore, research on parenting has been limited by its heavy reliance on questionnaires. Although parenting becomes more difficult to observe in naturalistic settings as children grow older, surveys should be supplemented by observations of family interactions in the lab and at home. Research on parenting also often relies on parent reports, especially of young children, or adolescents' (but not parents') reports, as teens are seen as acting on their perceptions of parenting. Although studies employing multiple reporters indicate that agreement between different family members is modest at best, new research shows that discrepancies between parents' and children's ratings are meaningful and deserving of study, particularly with new statistical methods designed to overcome problems associated with using difference scores [61^{••}, 62^{••}]. Additionally, studying how parenting differs by children's birth order, gender, and personality facilitates our understanding of child-driven effects of parenting and challenge researchers to go beyond one-child-per-family research.

Finally, research on parenting styles, dimensions, and beliefs has successfully grappled with contextual variations due to culture, race/ethnicity, SES, and neighborhood conditions. Other important social and societal trends require further investigation. Migration and immigration are on the rise around the world [63^{••}], and political conflict and war have led to huge numbers of refugees, many of whom are children [64]. These situations pose enormous challenges for parenting and must be addressed in future research.

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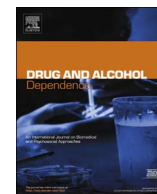
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Full Length Article

Gradient of association between parenting styles and patterns of drug use in adolescence: A latent class analysis

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ARTICLE INFO

Keywords:

Prevention

Adolescence

Drug use

Substance use

Latent class analysis

ABSTRACT

Background: To identify different patterns of drug use in adolescence and determine if these are associated with parenting styles and other sociodemographic factors.

Methods: A latent class analysis was conducted using baseline data collected in a sample ($n = 6381$) from a randomized controlled trial conducted to evaluate the effectiveness of the #Tamojunto drug-use prevention program, carried out with 7th- and 8th-grade public school students in six Brazilian cities.

Results: Three latent classes were identified among the students: 1) abstainers/low users (81.54%), 2) alcohol users/binge drinkers (16.65%), and 3) polydrug users (1.80%). A gradient of inverse association was found between parenting styles (authoritative, authoritarian, and indulgent, with the neglectful style as a reference point) and the classes “alcohol users/binge drinkers” ($aOR = 0.36$, 95%CI = 0.27–0.47; $aOR = 0.56$, 95%CI = 0.43–0.72; and $aOR = 0.64$, 95%CI = 0.51–0.80, respectively) and “polydrug users” ($aOR = 0.09$, 95%CI = 0.03–0.24; $aOR = 0.23$, 95%CI = 0.11–0.52; and $aOR = 0.24$, 95%CI = 0.08–0.74, respectively). Associations were also revealed between the latent classes and the adolescent's age and socioeconomic status.

Conclusion: The results suggest that activities to develop parenting skills should be included in school programs aimed at the prevention of drug use among adolescents in order to reduce neglectful practices and thereby possibly reduce drug use among the children.

1. Introduction

Global concern with the damage caused by drug use among adolescents is visibly growing (Bonomo et al., 2001). In Brazil, teenagers begin by consuming licit drugs; in this country, experimentation with alcohol is most prevalent among 12- to 14-year-olds (Malta et al., 2011). These data are worrisome because the risks of beginning drug consumption at an early age are well known (James et al., 2013).

In low of this situation, it is important to develop preventive campaigns that focus on the most significant risk and protective factors associated with the onset of early consumption of drugs by adolescents (Cleveland et al., 2008). The theory of social development suggests that teenagers learn behavior patterns, such as drug use, through their first models of socialization (Catalano and Hawkins, 1996). Consistent with this hypothesis, the influence of parental attitudes on drug use among adolescents is already well documented in the literature (Becoña et al., 2013).

Maccoby and Martin (1983) proposed a typological model that classifies the styles of relationships among parents and their children,

referred to as “parenting styles.” This theoretical model is based on two fundamental aspects of parents' educational practices: demandingness and responsiveness. Authoritarian parents (high demandingness and low responsiveness) require obedience to rules and offer environments that are not very warm, limited communication, and regular physical punishment. Indulgent parents (low demandingness and high responsiveness) impose few rules, eschew punishment, and adopt extreme tolerance toward their children by avoiding controlling behavior. The authoritative parenting style (high demandingness and high responsiveness) is characterized by reciprocity in family relationships. Children must obey their parents' demands, but parents also accept their obligation to respond, insofar as possible, to the children's points of view and reasonable demands. Parents with a neglectful style (low demandingness and low responsiveness) show little willingness to take on the responsibilities and tasks of parenthood.

Many studies show that the authoritative parenting style is associated with lower consumption of drugs (Berge et al., 2016) by adolescents than other styles. Many studies associate the neglectful parenting style with higher rates of drug use by adolescents (Chassin,

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2005). However, the results for the indulgent parenting style have been mixed, as some findings indicate a positive association with drug use (Calafat et al., 2014), whereas other studies show a negative association with drug use (Cerezo et al., 2013).

It is noteworthy that these studies fail to consider the association that risk and protective factors have with the multiple patterns of drug use among adolescents (Lanza et al., 2010). The studies tend to examine the relationships between parenting styles and a single type of substance (Čablová et al., 2014). However, simple associations between parenting styles and various drugs fail to capture the complexity involved in the pattern of drug use itself, as they overlook the fact that a teenager can be consuming multiple substances simultaneously. Patterns of drug use are features underlying the various types of drugs being used, which most studies treat in a dichotomous manner. Youths with similar patterns of drug use can be grouped together to form what are called latent groups. These underlying *unobserved* groups of adolescents are inferred from a set of measured dichotomous questions about use (or not) of alcohol, tobacco, marijuana, and inhalants and could be treated as homogeneous, and the benefits and drawbacks of various parenting styles could then be tested in a more methodologically robust manner (Percy and Iwaniec, 2007).

Latent class analysis (LCA) is a mixture model (Collins and Lanza, 2009; Lazarsfeld and Henry, 1968) that allows to better understanding profiles of behavior outcomes such as substance use profiles (Anderson et al., 2010; Scheier et al., 2008). The breakthrough of LCA is the use of an analytical methodology focused on the person, in contrast to past data analysis techniques that have focused on the variables (Lanza and Rhoades, 2013), where for each observed outcome, a regression was build up and as consequence and increasing in the false discovery rates might occur (Simmons et al., 2011). LCA makes it possible to analyze the simultaneous use of different types of substances and different patterns of use, seeking the risk factors associated with each specific pattern (Cho et al., 2015).

In low of this, this study aims to identify different patterns of drug use in early adolescence and fill this gap in the literature by determining whether these patterns are associated with certain parenting styles and other sociodemographic factors among Brazilian students.

2. Material and methods

This study presents the results of the baseline data collection of a randomized controlled trial to evaluate a school drug-use prevention program. Thus, the original design of the study is a controlled parallel-group randomized trial among 7th- and 8th-grade public school students in six Brazilian cities. In partnership with the Brazilian branch of the United Nations Office on Drugs and Crime (UNODC), the Brazilian Ministry of Health decided to undertake a culturally adapted version of the European drug prevention program *Unplugged*, renamed #Tamojunto, to be applied in Brazilian public schools (Pedroso et al., 2015).

This article examined the data from this cross-sectional sample from the baseline data collection, prior to the application of the intervention (that is, from the pre-test). The study was registered in the Brazilian Ministry of Health's Brazilian Registry of Clinical Trials (Registro Brasileiro de Ensaios Clínicos – REBEC) under the number RBR-4mnv5g. The study protocol was approved by the Federal University of São Paulo's research ethics committee (protocol #473,498).

2.1. Sampling

The sample in this study consisted of 6391 students aged 11–15 in the 7th and 8th grades of 72 public schools in the cities of São Paulo, São Bernardo do Campo, Brasília, Florianópolis, Tubarão, and Fortaleza.

Based on Lwanga and Lemeshow (1991) calculation of sample sizes for longitudinal studies, for a power of 80%, a level of significance of

5%, and a difference between the groups of 1.5 percentage points (5%–3.5%), the sample size necessary for each group in this study was calculated to be 2835 participants. Taking into account a loss of 50%, the sample had to include 4253 participants in each group. The parameters used were based on a previous pilot study and the expected results for the randomized controlled trial. Details of the study design and a flowchart of the sampling were presented in a prior publication (Sanchez et al., 2017).

2.2. Questionnaires

The data were collected through an anonymous questionnaire completed by the participants and administered by researchers in the classroom, without the presence of the teacher. The questionnaire was developed and tested by the European Union Drug Abuse Prevention (EU-DAP) program and used in previous studies on the effectiveness of *Unplugged* (Faggiano et al., 2008). A version that had been translated into and adapted for Portuguese was used in Brazil, with some questions replaced by items from two questionnaires that have been widely used in various studies of Brazilian students: a World Health Organization questionnaire, used by the Brazilian Center for Information about Psychotropic Drugs (Centro Brasileiro de Informações Sobre Drogas Psicotrópicas – CEBRID), (Carlini et al., 2010) and the questionnaire of the National Survey of Student Health (Pesquisa Nacional de Saúde do Escolar – PENSE), used by the Brazilian Ministry of Health (IBGE, 2012).

The questionnaire assessed the use of the following drugs: alcohol, tobacco, marijuana, and inhalants. In addition, it assessed binge drinking (the consumption of 5 or more doses of alcohol during a two-hour period) and sociodemographic data. The students' socioeconomic class was assessed using the scale of the Brazilian Association of Research Companies (Associação Brasileira de Empresas de Pesquisa – ABEP) (ABEP, 2012), which takes into account the head-of-household's education and the goods and services used, with scores ranging from 0 to 46 or in categories from A to E; higher scores indicate better economic standing, and socioeconomic classes are ranked from A (highest) to E (lowest).

The data relating to parenting styles were collected through the scales of Demandingness and Responsiveness (Lamborn et al., 1991). This instrument was used to define four parenting styles (authoritarian, authoritative, neglectful, and indulgent) based on Maccoby and Martin's theoretical model (Maccoby and Martin, 1983). The instrument consists of two scales that refer to the orthogonal dimensions of demandingness and responsiveness. The scales are structured by six items on the demandingness dimension and ten items on the responsiveness dimension, assessed by means of a three-point Likert scale such that values closer to three indicate greater perceived demandingness and responsiveness.

Parents are classified as high or low in demandingness and high or low in responsiveness. The scale is corrected based on the median scores for each subscale, with the parents who score at or above the median for demandingness or responsiveness being classified as high in demandingness or responsiveness, respectively, whereas parents who score at or below the median were classified as low in demandingness or responsiveness. Parenting styles are defined in four categories, based on the combination of these two dimensions: authoritative (parents scoring high on demandingness and responsiveness), authoritarian (those scoring high on demandingness and low on responsiveness), indulgent (parents scoring low on demandingness and high on responsiveness), or neglectful (those scoring low on both demandingness and responsiveness) (Calafat et al., 2014).

The assessed outcome variables included whether the following had been used over the past 12 months: alcohol, tobacco, marijuana, or inhalants. In the case of alcohol, any pattern of binge drinking (BD) over the past year was also assessed. The explanatory variables analyzed were parenting style (neglectful, authoritative, authoritarian, or

indulgent), the ABEP score, city, gender, and age. All variables used in this study were collected at the initial (baseline) time and were therefore neither randomized nor influenced by the intervention.

2.3. Statistical analysis

Latent class analysis was used for the purpose of identifying groups with similar patterns of drug use. The enumeration process extracted from 1 to 6 classes, and due to the study's multilevel sampling, the standard errors were corrected as described in Asparouhov (Asparouhov, 2006) taking the school (second level) as cluster indicator. Mplus version 7.4 was used for all analyses (Muthén and Muthén, 2010). The extraction of latent classes ceased when the inclusion of a class yielded little additional information. The model was adjusted based on the goodness of fit criterion and took into consideration the parsimony and interpretability of the classes; that is, in addition to the statistical indices presented below, the decision about the best solution and number of latent classes took into consideration the most consistent statistical and conceptual distinctions among the groups. The following fit indices used to decide statistically the best solution: the Akaike information criterion (AIC); the Bayesian information criterion (BIC); the sample-size-adjusted Bayesian information criterion (SSABIC); and the Vuong-Lo-Mendell-Rubin test (VLMR). Finally, to assess how well discriminated the latent classes underlying the best solution were, we used entropy, which is based on a posteriori probability and indicates the accuracy of the classification; values close to 1 indicate clear and very precise classifications. We emphasize that entropy, in itself, was not used to decide the best solution for the number of latent classes. Because large amounts of data relating to parenting styles were lost due to the fact that students left many responses blank, they were imputed in Mplus through the method of imputed regression (Muthén and Muthén, 2010). The following were used as variables in the non-restricted model: group, school, gender, age, drug use (alcohol, binge drinking, cigarettes, inhalants, marijuana), and ABEP classification. Five imputed data sets were generated. Subsequently, a multinomial logistic regression (Hosmer et al., 2013) was performed in Mplus following the 3RSTEP Mplus's *AUXILIARY* command (Asparouhov and Muthén, 2014). Descriptive statistics on Table 1 are weighted percentages (wgt%) based on random levels of the sample subjects and records of the expected population taken from official data from the Anísio Teixeira National Institute of Educational Studies and Research (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira – INEP). Inferential point estimates are given in odds ratios (ORs) with their respective 95% CIs and p-values. The adopted level of significance was 5%.

3. Results

Table 1 presents the demographic characteristics of the students participating in the study ($n = 6391$), drawn from the baseline data collected prior to the intervention. The obtained data show that the majority of students were girls (51.21%) between the ages of 11 and 12 (53.83%) who belonged to the middle socioeconomic class (53.98%). Moreover, the drug most used by these students over the last year was alcohol (30.94%), and the most prevalent parenting style was the neglectful style (37.84%).

The latent classes were identified based on the variables related to drug consumption over the past year (alcohol, binge drinking, cigarettes, inhalants, and marijuana). A total of five classes (classes 1–5) were examined (Table 2). The three-class model showed a lower BIC value, and the lowest SSABIC value was detected in the model with four classes. Moreover, the values of AIC decreased as the number of classes increased. For the three-class solution, the value of entropy was 0.89. Taking the BIC value as the most reliable measure, (Nylund et al., 2007) the model with three latent classes was chosen as the most parsimonious, as it presented values that were acceptable considering the

Table 1

Sociodemographic characteristics of students participating in the baseline data collection of a study evaluating the #Tamojuntó school-based program of drug-use prevention ($N = 6391$).

Variables	N	wgt%	wgt95%CI
Gender			
Male	3130	48.79	[47.03; 50.56]
Female	3261	51.21	[49.44; 52.97]
Age			
11–12 years	3343	53.83	[50.91; 56.72]
13–15 years	3048	46.17	[43.28; 49.09]
Average Age		12.61	[12.56; 12.67]
ABEP score			
A (35–42)	244	3.78	[2.80; 5.11]
B (23–34)	2467	36.64	[33.54; 39.85]
C (14–22)	3343	53.98	[50.41; 57.50]
D/E (0–13)	322	5.6	[4.60; 6.80]
Use in the past year			
Alcohol	2015	30.94	[28.67; 33.30]
Binge drinking	1006	16.50	[15.10; 18.01]
Tobacco	243	4.02	[3.31; 4.86]
Inhalants	525	8.22	[7.45; 9.07]
Marijuana	156	2.56	[2.05; 3.20]
Parenting Style ^a			
Authoritative	1447	28.69	[26.65; 30.83]
Authoritarian	960	19.66	[18.56; 20.80]
Indulgent	662	13.81	[12.72; 14.98]
Neglectful	1863	37.84	[35.66; 40.07]

* This variable showed 22% of data as missing and included imputed data in the inferential analyses.

criteria of “goodness of fit” and interpretability from the perspective of the event.

Fig. 1 shows the probability of drug use and binge drinking over the past year for each latent class in the model chosen for the best fit (i.e., 3 latent classes). The classes were denominated as “abstainers/low users” corresponding to 81.54% of the students, “alcohol users/binge drinkers,” representing 16.66% of the total sample, and “polydrug users,” accounting for 1.8% of the students. Students in the “abstainers/low users” class had an average likelihood of having used alcohol over the past year (12.4%) and a very low probability of having used other drugs ($< 5\%$); no cases of binge drinking (BD) were found in this group. Students in the “alcohol users/binge drinkers” class had a high probability of drinking (100%) and binge drinking (70.70%), an average likelihood of inhalant use (16.82%), a low likelihood of tobacco use (8.30%), and a very low probability of marijuana use ($< 3\%$). The students in the “polydrug users” class had a high probability of having used all drugs ($> 57\%$).

Table 3 shows the results of the multinomial logistic regression model (univariate and multivariate), using the class “abstainers/low users” as its reference. For every year of increasing age, the students had a 46% ($aOR = 1.46$, 95%CI = 1.32;1.61) greater probability of belonging to the “alcohol users/binge drinkers” class compared to the “low users” class. Every point on the scale of social class (which varied from 0 to 42) corresponded to an increase of 2% ($aOR = 1.02$, 95%CI = 1.00–1.03) in the probability that a student would belong to the “alcohol users/binge drinkers” class compared to the “low users” class. The adolescent of authoritative, authoritarian, and indulgent parents was progressively less likely to be in the “alcohol users/binge drinkers” class, rather than the “abstainers/low users” class, compared to the children of neglectful parents ($aOR = 0.33$, 95%CI = 0.25–0.44; $aOR = 0.55$, 95%CI = 0.42–0.72; and $aOR = 0.64$, 95%CI = 0.51–0.80, respectively). With each passing year of age, respondents were 2.58 times more likely to belong to the “polydrug users” group than to the “abstainers/low users” group (95%CI = 2.08–3.20). A student's chance of belonging to the “polydrug users” group, rather than to the “abstainers/low users” group, increased by 4% (95%CI = 1.02–1.06) with each additional point on the social class

Table 2

Goodness-of-fit statistics for the number of latent classes of drug use over the past year among students participating in the baseline data collection of a study to evaluate the effect of the #Tamojuntó school-based drug-use prevention program (N = 6381).

Models	Goodness-of-fit statistics					
	Free Parameters	Factor correction	AIC	BIC	ssaBIC	LMR-LR adjusted test
1 class	5	1.3978	20767.80	20801.60	20785.71	
2 classes	11	1.3573	16714.26	16788.63	16753.68	< 0.0001
3 classes	17	1.4054	16391.96	16506.90	16452.88	< 0.001
4 classes	23	1.3063	16338.12	16493.62	16420.54	0.001
5 classes	29	1.2373	16347.53	16543.60	16451.44	0.5773
						LMR-LR adjusted test
						0.5786

Legend: AIC = Akaike Information Criteria; BIC = Bayesian Information Criteria; ssaBIC = sample size adjusted; VLMR-LRT = Vong-Lo-Mendell-Rubin Likelihood Ratio Test.

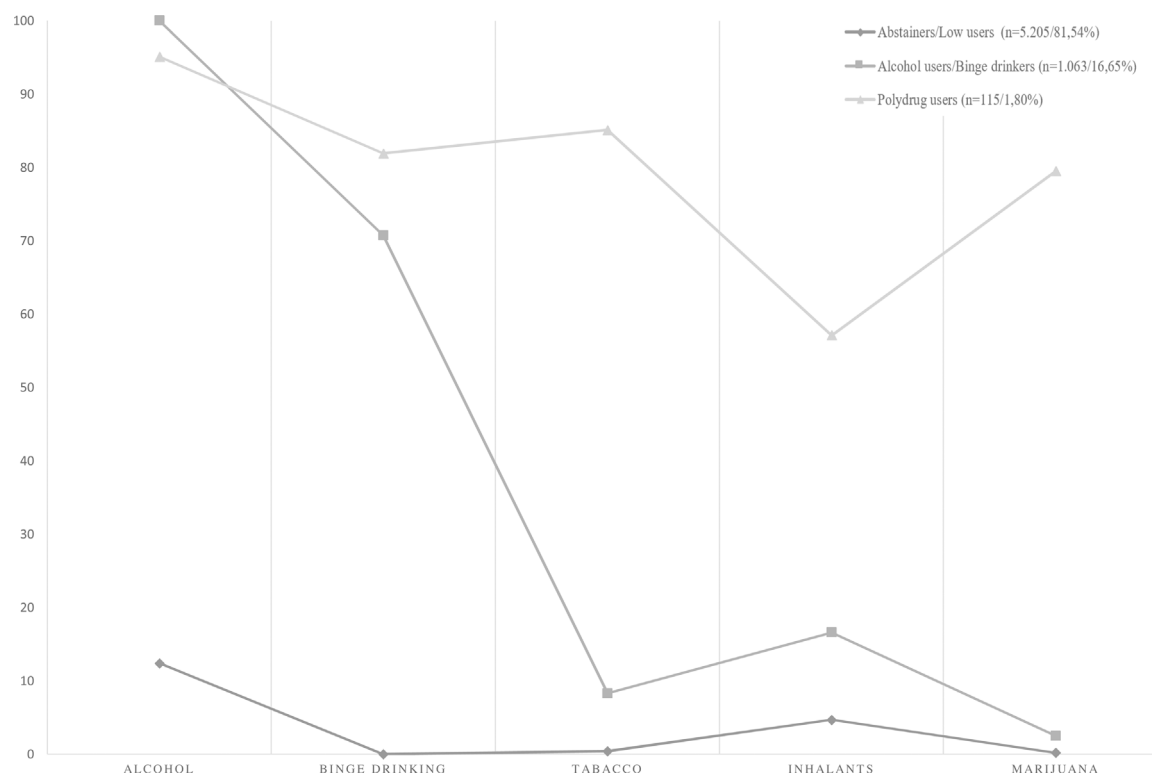


Fig. 1. Weighted probabilities associated with occurrence over the past year of alcohol use, binge drinking, tobacco use, inhalant use, and marijuana use given the model of the three latent classes among adolescents who participated in the collection of baseline data in the study evaluating the #Tamojuntó program, 2014 (n = 6381).

scale. With regard to parenting styles, it was found that students whose parents adopted authoritative, authoritarian, and indulgent styles were progressively less likely to belong to the “polydrug users” group, rather than to the “abstainers/low users” group, compared to the adolescents of neglectful parents (aOR = 0.08, 95%CI = 0.03–0.22; aOR = 0.23, 95%CI = 0.11–0.53; and aOR = 0.27, 95%CI = 0.10–0.72, respectively).

4. Discussion

This study’s significant contribution revolves around bringing the established knowledge about latent class formation to the understanding of the association between adolescent drug use and parenting styles to which adolescents are exposed. A solution of 3 latent classes (“abstainers/low users”, “alcohol users/binge drinkers,” and “polydrug users”) provided the best explanation for the patterns of drug use among those adolescents surveyed. This study found differences between the “abstainers/low users” class and the two other classes (“alcohol users/binge drinkers” and “polydrug users”) with regard to parenting style, age, and social class. Of particular note were the inverse associations found between parenting styles and classes of drug use

among Brazilian students.

The findings related to the best solution for the latent classes were consistent with previous studies carried out in the United States and Australia, which also found the same three latent classes of drug use in adolescents (“non-users or abstainers/low users of drugs,” ‘pre-dominant use of alcohol’ and “polydrug users”) as the best model to describe the patterns of drug use (Chung et al., 2013; Kelly et al., 2015). The great majority of students in this study fell into the class of abstainers/low users (81%). A systematic review showed that the class of “non-users” or “low users” tends to be the most prevalent and that the class of “polydrug users” is the least prevalent. The intermediate classes usually use isolated substances, such as the “use of alcohol alone” (Tomczyk et al., 2016).

This analysis identified a clear and consistent gradient of an inverse association between parenting styles and patterns of adolescent drug use, when controlling for gender, age, and social class. The evidence that the authoritative parenting style is a protective factor (Berge et al., 2016) and that the neglectful style is a risk factor (Chassin, 2005) for the use of drugs in adolescence corroborates previous studies that assessed the use of drugs in a one-dimensional manner. On the other hand, the association between

Table 3
 Characteristics of polysubstance drug use and binge drinking (BD) identified through LCA in a sample of students participating in the baseline data collection of a study to evaluate the effect of the #Tamojunt school-based drug-use prevention program (N = 6381).

	Latent Classes			Univariate analysis				Multivariate analysis					
	Abstainers/ Low users w%	Alcohol users/ Binge drinkers w%	Polydrug users w%	p	Abstainers/Low users vs. Alcohol users/Binge drinkers cOR	95%CI	P	Abstainers/Low users vs. Polydrug users cOR	95%CI	p	Alcohol users/Binge drinkers vs. Abstainers/Low users aOR	95%CI	p
Sex				0.223									
Girl	48.93	52.81	42.58		0.96	[0.82;1.12]	0.599	0.80	[0.50;1.28]	0.346	1.00	[0.85;1.17]	0.995
Boy	51.07	47.19	57.42										
Age				<0.001									
	12.54 ± 1.1	12.83 ± 2.6	13.41 ± 8.2		1.51	[1.37;1.67]	0.584	2.76	[2.23;3.40]	<0.001	1.46	[1.32;1.61]	<0.001
ABEP				<0.001									
	27.7 ± 36.9	28.94 ± 23.4	29.4 ± 72.1		1.01	[1.00;1.02]	0.023	1.04	[1.01;1.06]	0.004	1.02	[1.00;1.03]	0.005
Parenting Style ^a				0.408				1			1		
Neglectful	37.14	39.73	46.23		1								1
Indulgent	13.96	13.77	6.63		0.61	[0.46;0.80]	<0.001	0.24	[0.09;0.65]	0.008	0.64	[0.51;0.80]	<0.001
Authoritarian	19.82	19.45	16.87		0.53	[0.40;0.69]	<0.001	0.19	[0.08;0.43]	<0.001	0.55	[0.42;0.72]	<0.001
Authoritative	29.08	27.05	30.27		0.31	[0.23;0.42]	<0.001	0.06	[0.02;0.19]	<0.001	0.33	[0.25;0.44]	0.009

* This variable was imputed.

indulgent or authoritarian parenting styles and drug use is still open to debate (Garcia and Gracia, 2009) showing that cultural and ethnic differences vary the optimal parenting style (but now, in Brazil) (Chao, 2001; Dwairy et al., 2006; Garcia, 2015; Garcia and Gracia, 2009; Garcia and Gracia, 2014, 2010). This study showed that both the authoritarian and indulgent parenting styles serve as protective factors against adolescents' involvement with drugs. It is not clear if authoritarian parenting was associated with best benefit for the prevention of consumption than indulgent parenting once there is an overlap of the confidences intervals in respect to belonging to "alcohol users/binge drinkers (aOR = 0.55, 95%CI = 0.42–0.72; and aOR = 0.64, 95%CI = 0.51–0.80, respectively) and 'polydrug users' (OR = 0.23, 95%CI = 0.11–0.53; and aOR = 0.27, 95%CI = 0.10–0.72, respectively).

These results confirm other previously works with samples of the American white majority (Lamborn et al., 1991; Steinberg et al., 1992). This study's findings reinforce the protective function that parents' monitoring (Shin et al., 2015) of their children plays in preventing alcohol consumption in adolescence and emphasize the need for school-based drug prevention programs to include training in parenting skills in their curricula. However, on the other hand, the benefit for the prevention of consumption that supposes the component of affection and involvement, which share indulgent and authoritative parents, also you should indicate it. There is previous research that has found similar results analyzing drug (Calafat et al., 2014; Fuentes et al., 2015; Fuentes et al., 2011; Martínez et al., 2013) and other outcomes, in both Brazil (Martínez et al., 2007; Martínez and García, 2008) and other countries (Garcia and Gracia, 2009; Rodrigues et al., 2013). Affection and involvement of parents is key for reasoning and bidirectional communication between parents and children. Although monitoring is generally beneficial, it is not the same that be done by imposition, that the child himself, on his own initiative, informs his parents (Ahn and Lee, 2016; Álvarez-García et al., 2016; Calafat et al., 2014; Holdsworth et al., 2017; McLaughlin et al., 2016).

With respect to sociodemographic factors, the association between drug use and increasing age among teenagers is already well known in the literature (Tomczyk et al., 2016). This can be explained by the fact that the older the teenager is, the more access he or she has to the use of drugs, and the more extensive is his or her repertoire and experience with drug use (White et al., 2013). Moreover, it was shown that higher social class is associated with an increased likelihood of belonging to the "alcohol users/binge drinkers" class and an even greater likelihood of belonging to the "polydrug users" class, which potentially corroborates previous Brazilian data suggesting that Brazilian students with higher socioeconomic standing are at greater risk of binge drinking (Sanchez et al., 2013). However, this association runs counter to observations in developed countries, such as the United States and Europe, where drug use is generally associated with lower socio-economic status (Baumann et al., 2007; Helasoja et al., 2007).

This study has some limitations that should be considered, the primary one being the fact that adolescents' perceptions provided the only measure by which parenting style was assessed. Studies that assess the perceptions of both parents and children simultaneously tend to provide more reliable data on parenting styles and drug use, as children tend to have a more negative perception of their relationship with their parents (Shek, 1998). Moreover, it is important to underscore that because this is a cross-sectional study, it is not possible to assign causal inference between the factors analyzed and the outcome. Besides, adolescents' perceptions of parenting style were used as a categorical observed covariate as normally conducted (Berge et al., 2016; Garcia and Gracia, 2009). More robust model might use such perception in a latent solving likely problems of misclassifications increasing its incremental validity (Simmons et al., 2011; Westfall and Yarkoni, 2016).

Our findings suggest that parenting style is associated with different patterns of drug use by students in early adolescence, as are age and socioeconomic status. In low of the known risks of early drug consumption, these results indicate that school-based drug prevention

programs should include activities in their curricula directed exclusively at the parents to reduce neglectful practices and thus possibly reduce drug use among adolescents.

Conflict of interest

No conflict declared.

Funding

This study was funded by the Brazilian Ministry of Health through the TED 89-2014 (PI: Dr. Sanchez) and Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) through the grant number 2016/11971-5 (M.S. Juliana Y Valente). The study was registered in the Brazilian Ministry of Health Brazilian Registry of Clinical Trials (Registro Brasileiro de Ensaios Clínicos – REBEC) under the number RBR-4mnv5g.

Contributors

The submitted manuscript has been read and approved by all authors. All authors acknowledge that they have exercised due care in ensuring the integrity of the work. JYV was responsible for drafting the article, literature review and wrote the manuscript. HCM helped with the analysis, interpretation and results. ZMS designed the original study (RCT), wrote the grant protocol and was responsible for the final approval of the version to be published. None of the original material contained in the manuscript has been submitted for consideration nor will any of it be published elsewhere.

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