



Harsh Parental Discipline, Parent-Child Attachment, and Peer Attachment in Late Childhood and Early Adolescence

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Abstract

This research aimed to examine the relations among harsh discipline (including psychological aggression and corporal punishment), parent-child attachment, and peer attachment. More specifically, two mediation models (one for psychological aggression, one for corporal punishment) were investigated in which father-child attachment and mother-child attachment were hypothesized to mediate the relations between both paternal and maternal harsh discipline and peer attachment. In addition, differences across gender of the mediation model were examined. Participants were 668 children in grades four to eight and both their parents in China. The Chinese version of Parent-Child Conflict Tactics Scale (CTSPC) and the Inventory of Parent and Peer Attachment (IPPA) were used as the main assessment tools to measure parental use of harsh discipline, parent-child attachment, and peer attachment. Findings revealed that the direct path from neither fathers' nor mothers' harsh discipline to peer attachment was significant. Harsh discipline by one parent was indirectly related to peer attachment through the attachment between this parent and the child, but not through the attachment between his/her spouse and the child. In addition, the direct and indirect relations between harsh parental discipline and peer attachment did not differ across child gender. The findings provided an important supplement and extension to previous examinations of the factors associated with peer attachment and its mechanisms. In addition, the results also suggested the need for intervention programs aiming at improving children's peer relationships to take the parenting and parent-child relationships into account.

Keywords Harsh parental discipline · Parent-child attachment · Peer attachment · Gender differences · Late childhood and early adolescence

Highlights

- The direct effects of harsh parental discipline on peer attachment were not significant.
- Harsh discipline by one parent was indirectly related to peer attachment through the attachment between this parent and the child, but not through the attachment between his/her spouse and the child.
- The direct and indirect relations between harsh parental discipline and peer attachment did not differ across child gender.

Peer attachment is generally defined as an enduring affectional bond that individuals form with peers, and it is thought to serve numerous functions, including the

provision of intimacy, security, trust, closeness, and communication (Collins and Repinski 1994). Peer attachment is an indicator of the quality of peer relationships (Engels and Bogt 2001; Rassart et al. 2012) and the importance of peer attachment has been verified by a body of literature. Specifically, secure peer attachment has been found to be correlated with prosocial behavior (Laible et al. 2004; Oldfield et al. 2016), a high level of self-esteem (Laible et al. 2004), and long-term benefits for psychological well-being (Nickerson and Nagle 2005). On the contrary, insecure peer attachment has been found to be correlated with delinquency (Choon et al. 2013), cyber aggression involvement (Wright et al. 2015), and depression (Millings et al.

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2012). Thus, it is necessary to investigate the relative factors of peer attachment. Recently, an increasing number of studies have emphasized the important role of family on peer attachment (An et al. 2013; Kim and Jo 2016; Lim and Lee 2017). In the present study, we explored the influences of two important family system factors, i.e., harsh parental discipline and parent-child attachment, on peer attachment. It is of theoretical importance to study this research question, which can expand the previous literature by examining the effects of family system factors on peer attachment and supplement and add to previous examinations of the mechanisms underlying those relations. In addition, this study also has important practical implications for clinical workers aiming to improve children's peer relationships, providing empirical evidence for improving peer attachment by intervening family factors.

This issue is particularly important to discuss regarding the period of late childhood to early adolescence. Late childhood to early adolescence is a transitional period (Brenning et al. 2012), during which the attachment system and the social representations of people and relationships change drastically (Gorrese and Ruggieri 2012). As part of the challenge of autonomy development, reliance or dependence on parents decreases, the adolescent's social world expands to include peers, romantic partners, and social groups, and there is a progressive differentiation and diversification of the attachment behavioral system (Allen 2008). Studies have found that peer attachment formed during this period plays a highly important role in children's psychological health (Armsden and Greenberg 1987; Lapsley et al. 1990; Nickerson and Nagle 2004; Wilkinson 2004) and the intimate relationships of adulthood (Sroufe and Waters 1977). Thus, it is necessary to explore the influencing factors of peer attachment in this period.

The Effects of Harsh Parental Discipline on Peer-attachment

The model of family-peer linkages (McDowell and Parke 2009) suggests that parental behaviors toward their children (i.e., parenting) can affect the children's social competence directly and then have an influence on the children's positive as well as negative social interactions with peers. According to this model, harsh parental discipline may lead to poor peer attachment. To date, several studies have found that harsh parental discipline (including psychological aggression, corporal punishment, abuse, and severe abuse) is positively related to interpersonal problems, including poor peer attachment (Kim and Jo 2016; Lim and Lee 2017). For example, using a sample of Korean school-aged children and their parents, Kim and Jo (2016) found that parental abuse had negative effects on peer attachment.

Similarly, An et al. (2013) also found that emotionally abused children had difficulties in forming secure attachment with peers. However, two other studies failed to find a significant relation between parental abuse and peer attachment (Bolger et al. 1998; Lim and Lee 2017).

Despite such progress, the prior research on the relations between parenting and peer attachment has primarily focused on only abuse or has reported combined data of abuse, corporal punishment, and psychological aggression (Bolger et al. 1998; Lim and Lee 2017); however, the unique effects of psychological aggression and corporal punishment on peer attachment have not been investigated. Psychological aggression and corporal punishment are the most common forms of harsh parental discipline in both Western and Chinese societies (Straus et al. 1998; Wang and Liu 2014). According to Straus et al. (1998), psychological aggression is defined as the use of psychological force, such as verbal and symbolic acts, with the intention of causing a child to experience psychological pain (i.e., the feeling of psychological or emotional rejection), whereas corporal punishment refers to parental use of physical force to inflict pain but not injury when disciplining children. Several studies have revealed that harsh parental discipline, such as corporal punishment, can undermine children's attachment to their parents (Barnett et al. 1998; Devet 1997; Larzelere et al. 2017). However, little research has investigated the relationship between parental psychological aggression and parent-child attachment. It should be noted that psychological aggression is less intrusive and aggressive but more commonly used than corporal punishment (Straus and Field 2003). Several studies have demonstrated that psychological aggression has a greater negative impact on individuals than that of corporal punishment (Miller-Perrin et al. 2009). Full consideration of psychological aggression and corporal punishment can lead to a more comprehensive understanding of the effect of harsh parental discipline on children's peer attachment, and also can contribute important supplement information to the parenting literature. Given the above considerations, the current study examines the relations between psychological aggression and corporal punishment and children's peer attachment.

Mediation Effect of Parent-child Attachment

To further understand the possible negative effects of harsh discipline on peer attachment, it is necessary to examine the potential mechanism underlying this association. Attachment theory may provide a rich heuristic platform from which to explore the mechanisms of parenting behavior and peer attachment relationships (Bowlby 1969/1997; Bowlby 1988). The heart of Bowlby's (1969/1997, 1988)

attachment theory proposes that children's early disruptive experiences with their parents sets into motion processes in children and their relationships, which can be carried forward in development and thus influence later relationships. Accordingly, harsh parental discipline may have an indirect effect on peer attachment through the quality of parent-child attachment.

Many researchers have consistently demonstrated associations between harsh parental discipline and parent-child attachment (Dexter et al. 2013; Roskam et al. 2011). For example, Devet (1997) used a sample of 1452 adolescents and found that harsh parental discipline, such as corporal punishment during childhood, was linked to disruptions in subsequent parent-adolescent relationships. Similarly, Barnett et al. (1998) also found that the parents of children judged to be insecurely attached reported being more likely to use corporal punishment. Thus, it is reasonable to assume that children who experience high levels of harsh parental discipline are more likely to form insecure attachment with their parents. In addition, numerous attachment studies have also suggested a tight linkage between parent-child attachment and peer attachment (Allen et al. 2007; Dexter et al. 2013; Di Tommaso et al. 2005; Gorrese and Ruggieri 2012; Laible 2007). For instance, Gorrese and Ruggieri (2012) synthesized the results of 44 studies focusing on relationships between parent-child and peer attachments and indicated that overall, parent-child and peer attachments were positively related. In addition, using a sample of 347 Australian upper high school students, Wilkinson (2004) demonstrated that the quality of parent-child attachment was positively related to the quality of peer attachment reported by adolescents. Furthermore, other studies have found that secure parent-child attachment was significantly correlated with the development of secure peer attachment, while insecure parent-child attachment was related to poor peer attachment (Black and McCartney 1997; Elicker et al. 1992; Lapsley et al. 1990; Yang et al. 2016). Based on the above analyses, it is reasonable to expect that the indirect effect of harsh parental discipline on peer attachment is through parent-child attachment.

It should be noted that we considered both father's and mother's harsh discipline, father-child attachment and mother-child attachment on peer attachment when examining the above research question. In the traditional Chinese culture, the role of father as caregiver is emphasized. The Chinese believe that if a child is not adequately educated, it is the father's fault. It is further noted that China has undergone considerable social and economic changes. Increasing numbers of women have entered the workforce, and fathers have become more actively engaged in their children's lives in recent decades (Chuang and Su 2008). Thus, fathers acting as coparents rather than helpers may play as important a role as

mothers in their children's development in China, just as fathers' roles in child development have also been emphasized in other societies (Barker et al. 2017; Cabrera et al. 2018). However, previous studies on the relations between parenting and peer attachment have mainly included mothers, and fathers have been less investigated (Brenning et al. 2012; Zhao 2010). As family system theory indicates, families are systemic units in which fathers, mothers, and children engage in interconnected relations (Bronfenbrenner 1979; Burchinal et al. 2010). Thus, within a family system framework, the development of child peer attachment may be influenced not only by mothers but also by fathers. Several studies have indicated that fathers' parenting also makes a unique contribution to the formation of secure peer attachment (Emmanuelle 2009; Lindsey et al. 2009). Thus, simultaneously examining the effects of both fathers' and mothers' harsh discipline in the same model is meaningful.

In addition, the family system theory also suggests that all members of a family system are in constant interaction with each other (Cox and Paley 2003), which means that family members' behaviors and emotions are not independent but interdependent and interact with each other. Based on the family system theory, harsh discipline by one parent may have an effect on the attachment between this parent and the child as well as the attachment between his/her spouse and the child when simultaneously examining the effects of both fathers' and mothers' harsh discipline on father-child attachment and mother-child attachment. In the present study, we examined this hypothesis, and we hypothesized that harsh discipline by one parent may affect peer attachment not only through the attachment between this parent and the child but also through the attachment between his/her spouse and the child.

Differences across Gender in the Relations of Harsh Discipline, Parent-child Attachment, and Peer Attachment

Furthermore, differences across gender were considered when investigating the research questions. A study examining the link between parental corporal punishment and peer aggression has suggested that parental corporal punishment is more likely to predict a higher level of relational peer aggression in girls than in boys (Zulauf et al. 2018). In addition, evidence suggests that parental maltreatment can significantly predict lower parent-child attachment for females but not for males (Alto et al. 2018). Based on the previous studies, it is reasonable to infer that the direct and indirect effects of harsh parental discipline on peer attachment are conditional on gender.

The Current Study

Taken together, using a sample of children from late childhood and early adolescence, the current study expanded the previous literature by simultaneously examining the direct effects of fathers' and mothers' psychological aggression and corporal punishment on children's peer attachment. Moreover, the indirect effects of fathers' and mothers' psychological aggression and corporal punishment on children's peer attachment through parent-child attachment were also examined. We explored whether hypothesized paths were different for boys and girls.

Method

Participants

The children in grades four to eight ($N = 685$) from two public schools in Jinan, Shandong Province, China, participated in the present study. Convenience sampling techniques were used. Because there were instances of many missing data, the final valid sample included 668 children (295 boys, 303 girls; 70 children did not report gender) aged nine to fifteen years ($M = 11.27$; $SD = 1.43$) who were enrolled in grades four to eight. With respect to parental education level, the majority of the parents had a high school education (22.5% for fathers, 26.7% for mothers) or a college education (51.2% for fathers, 47.3% for mothers), and approximately 16.4% of the fathers and 12.6% of the mothers had a postgraduate education. In terms of employment, 13.3% of the fathers and 12.8% of the mothers were employed in working-class jobs (e.g., factory workers), while 76.0% of the fathers and 54.9% of the mothers held a professional, managerial, or technical position (e.g., teachers, doctors, civil officials). The sample was, in large part, a middle-class sample.

Procedure

Prior to data collection, the trained research assistants introduced the study to the children in their classrooms and gave them informed consent forms to give to their parents. After obtaining the parental informed consent forms, the children were instructed to complete the study questionnaires independent of one another in the classroom. Finally, the research team assistants collected the questionnaires, and each student received a gift worth ¥15 when the completed questionnaires had been returned.

To ensure the data quality, the data in the current study were double entered into the computer using Epidata 3.1 software. SPSS version 19.0 was used for data management and analysis. The study was approved by the

Institutional Review Board at Shandong Normal University in advance of data collection.

Measures

Harsh parental discipline

The Chinese version of the Parent-Child Conflict Tactics Scales (CTSPC) was used to assess the parental use of harsh discipline in conflict situations (Straus et al. 1998). The 22 items of the CTSPC are grouped into the following five subscales: nonviolent discipline (four items, e.g., explain why a certain action was wrong), psychological aggression (five items, e.g., shouting, yelling, or screaming), corporal punishment (six items, e.g., using the hand to spank the bottom), severe physical abuse (three items, e.g., hitting with a fist or kicking hard), and very severe physical abuse (four items, e.g., intentional burning or scalding). The psychological aggression and corporal punishment subscales were the primary focus of the current study. The children rated how often their parents had used each discipline strategy during the past year. According to the scoring methods, as Straus et al. (1998) suggested, the midpoints of each response category for each CTSPC item represented the frequency scores: never (0), once (1), twice (2), three to five times (4), six to 10 times (8), 11–20 times (15), or more than 20 times (25). This measure calculated two scores, i.e., the prevalence rate and the frequency score, of the two types of harsh discipline occurring in the previous year. The prevalence rate of harsh discipline was the percentage of children who had experienced any harsh discipline in each subscale in the past year. The frequency rate of harsh discipline was the mean number of experience times, which was computed by summing the scores of the subscale items. The Chinese version of the psychological aggression and corporal punishment subscales have good internal consistency and have been used in previous studies (Tang 2006; Wang and Liu 2014). In the present study, the Cronbach's alpha values for the fathers' and mothers' psychological aggression reported by children were .76 and .74, respectively. The Cronbach's alpha values for the fathers' and mothers' corporal punishment reported by children were .84 and .81, respectively.

Attachment to parents

Parent-child attachment was measured by the Inventory of Parent and Peer Attachment (IPPA; Armsden and Greenberg 1987). This self-report measure of attachment assesses children's continuum of secure attachment with their parents and peers, as reported by the children. The scale includes the following three subscales that use a five-point scale ranging from 1 (never) to 5 (always): the mother-child

Table 1 Correlations among the main study variables

	1	2	3	4	5	6	7	8	9	10
1 child gender	–									
2 child age	–0.09*	–								
3 Family SES	0.03	–0.12**	–							
4 FPA	–0.01	–0.03	–0.02	–						
5 MPA	0.00	–0.03	–0.06	0.71***	–					
6 FCP	–0.03	–0.04	0.02	0.64***	0.46***	–				
7 MCP	–0.03	–0.10*	0.00	0.59***	0.68***	0.75***	–			
8 Father-child attachment	0.00	–0.08	0.16***	–0.28***	–0.15***	–0.31***	–0.20***	–		
9 Mother-child attachment	–0.02	–0.11**	0.15***	–0.19***	–0.33***	–0.15***	–0.25***	0.32***	–	
10 Peer attachment	0.00	0.05	–0.09*	–0.14***	–0.11***	–0.14***	–0.15***	0.37***	0.35***	–
<i>M</i>	0.06	11.90	0.00	12.30	13.95	6.14	7.50	83.79	88.02	85.79
<i>SD</i>	0.23	0.06	0.11	0.79	0.82	0.72	0.75	0.52	0.50	0.60

SES socioeconomic status, *FPA* Father's psychological aggression, *MPA* Mother's psychological aggression; *FCP* Father's corporal punishment, *MCP* Mother's corporal punishment

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

attachment subscale (25 questions, e.g., my mother respects my feeling), the father-child attachment subscale (25 questions, e.g., my father respects my feelings), and the peer attachment subscale (25 questions, e.g., my friends understand me). The following three dimensions were contained in every subscale: trust, communication, and alienation (reverse scored). Each subscale score was calculated by summing the scores of the three dimensions. A higher score indicated that the children were more securely attached. The mother-child attachment subscale and the father-child attachment subscale were used to examine mother-child attachment and father-child attachment, respectively. The Chinese version of this scale has good internal consistency (Ju et al. 2011; Wu and Wang 2014). For the father-child attachment subscale and the mother-child attachment subscale, the Cronbach's alpha values were .80 and .81, respectively.

Attachment to peers

The Inventory of Parent and Peer Attachment (IPPA; Armsden and Greenberg 1987) was also used to assess peer attachment. The children were asked to rate their continuum of secure attachment with their peers. In this study, the Cronbach's alpha value for the children's reports of peer attachment was .88.

Data Analyses

The statistical analyses were conducted in SPSS 19.0 and Mplus 8.0. Prior to conducting the analyses, all data were examined for completeness. We used mean substitution to estimate missing data in SPSS given that the percentage of

respondents with missing items in the current study was only 2.48% (Sawilowsky 2007). Due to its skewed distribution ($M_{\text{skewness}} = 3.54$, range 2.20–5.00; $M_{\text{kurtosis}} = 15.91$, range 4.89–28.42), the frequency scores of parental psychological aggression and corporal punishment experiences were log transformed ($M_{\text{skewness}} = 0.84$, range 0.24–1.56; $M_{\text{kurtosis}} = -0.09$, range -1.18–1.59).

The data analyses proceeded in three stages. First, we computed the Pearson correlations for all the variables. Second, we used the structural equation modeling (SEM) to test the direct and indirect paths in Mplus 8.0 and conducted two structural equation models (one for parental psychological aggression and one for parental corporal punishment). The bias-corrected bootstrap method was performed to assess the significance of indirect paths in the current study. If the interval did not include zero, then the indirect paths were statistically significant (Shrout and Bolger 2002). Third, a multi-group analysis was used to examine differences across gender in the direct and indirect relations between harsh parental discipline and peer attachment.

Results

Descriptive Statistics and Correlations

Table 1 presents the means and standard deviations of all the study variables and the results of the correlation analyses of the study variables. The correlation matrix indicated that child age was negatively and significantly related to mothers' corporal punishment and mother-child attachment, i.e., the younger the children, the lower the levels of their mothers' corporal punishment toward them and the higher

the levels of their mother-child attachment. Family SES was positively related to father-child attachment and mother-child attachment and negatively related to peer attachment, indicating that the higher the level of family SES, the better the parent-child attachment and the worse the children’s development of emotional attachment. Both fathers’ and mothers’ levels of psychological aggression and corporal punishment were negatively and significantly related to parent-child and peer attachments, indicating that the higher the levels of the fathers’ and mothers’ psychological aggression and corporal punishment, the worse the children’s development of emotional attachment. Both father-child and mother-child attachment were positively and significantly correlated with peer attachment, indicating that the higher the parent-child attachment, the better the peer attachment.

The Direct and Indirect Effects

We used SEM to test the model using Mplus 8.0 (Muthén and Muthén 2013). Child age and family SES were included as covariates in the model. The model fit index of the two research models demonstrated adequate goodness-of-fit statistics. For the parental psychological aggression model, $\chi^2 = 29.10$, $df = 11$, $RMSEA = 0.03$, $CFI = 0.99$, $TLI = 0.99$, $SRMR = 0.02$; for the parental corporal punishment model, $\chi^2 = 45.29$, $df = 11$, $RMSEA = 0.04$, $CFI = 0.99$, $TLI = 0.98$, $SRMR = 0.03$.

As shown in Fig. 1, the direct paths from parental psychological aggression to peer attachment were not significant for either fathers or mothers ($\beta_{father} = -0.01$, $\beta_{mother} = 0.01$, $ps > 0.05$). Some significant effects of psychological aggression on parent-child attachment were found. Specifically, fathers’ psychological aggression significantly and negatively predicted father-child attachment ($\beta = -0.39$, $p < 0.001$), and mothers’ psychological aggression significantly and negatively predicted mother-child attachment ($\beta = -0.40$, $p < 0.001$). These results indicated that a higher frequency of exposure to parental psychological aggression was linked to lower level of parent-child attachment. However, neither fathers’ nor

mothers’ psychological aggression were significantly related to the attachment between their spouse and the child. In addition, both father-child attachment and mother-child attachment significantly and positively predicted peer attachment ($\beta_{father} = 0.34$, $\beta_{mother} = 0.18$, $ps < 0.001$), i.e., the lower the level of parent-child attachment, the lower the level of peer attachment. The indirect impact of parental psychological aggression on peer attachment was indicated by a bias-corrected bootstrap 95% confidence interval (CI). The results indicated that psychological aggression by one parent was indirectly related to peer attachment only through the attachment between this parent and the child (95% CI_{father} : $-0.144 - -0.064$; 95% CI_{mother} : $-0.090 - -0.026$).

As shown in Fig. 2, the direct paths from corporal punishment to peer attachment were not significant for either fathers or mothers ($\beta_{father} = 0.07$, $\beta_{mother} = -0.06$, $ps > 0.05$). Some significant effects of corporal punishment on parent-child attachment were found. Specifically, fathers’ corporal punishment significantly and negatively predicted father-child attachment ($\beta = -0.39$, $p < 0.001$), and mothers’ corporal punishment significantly and negatively predicted mother-child attachment ($\beta = -0.34$, $p < 0.001$). These results indicated that a higher frequency of exposure to parental corporal punishment was linked to lower level of parent-child attachment. However, neither fathers’ nor mothers’ corporal punishment were significantly related to the attachment between their spouse and the child. In addition, both father-child attachment and mother-child attachment significantly and positively predicted peer attachment ($\beta_{father} = 0.35$, $\beta_{mother} = 0.17$, $ps < 0.001$), i.e., the lower the level of parent-child attachment, the lower the level of peer attachment. The indirect impact of parental corporal punishment on peer attachment was also indicated by a bias-corrected bootstrap 95% confidence interval. The results indicated that corporal punishment by one parent was indirectly related to peer attachment only through the attachment between this parent and the child (95% CI_{father} : $-0.212 - -0.082$; 95% CI_{mother} : $-0.113 - -0.023$).

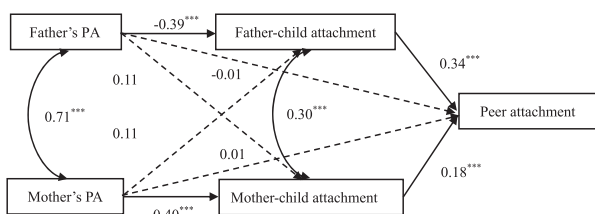


Fig. 1 The model testing the direct impacts of parental psychological aggression (PA) on peer attachment, and the indirect impacts of parental psychological aggression (PA) on peer attachment via parent-child attachment. Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

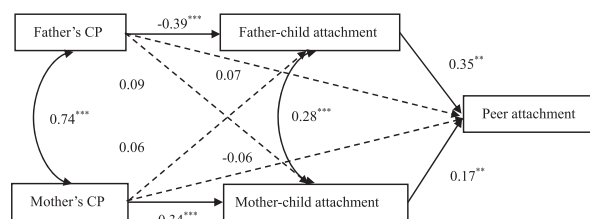


Fig. 2 The model testing the direct impacts of parental corporal punishment (CP) on peer attachment, and the indirect impacts of parental corporal punishment (CP) on peer attachment via parent-child attachment. Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Differences across Gender

Furthermore, a multi-group analysis was used to examine differences across gender in the direct and indirect relations between harsh parental discipline and peer attachment. An unconstrained model (Model 1) allowing the parameters to vary between boys and girls was then compared with a constrained model (Model 2) constraining the parameters to be equal across the groups. The results of this multi-group analysis revealed that the χ^2 difference was not significant ($\Delta\chi^2_{\text{corporal punishment}} = 1.44$, $\Delta\chi^2_{\text{psychological aggression}} = 2.56$, $df = 1$, $ps > .05$), indicating no significant differences across gender in the direct and indirect relations between harsh parental discipline and peer attachment.

Discussion

The present study used a sample of children from late childhood and early adolescence to examine the direct and indirect effects of harsh parental discipline (i.e., parental psychological aggression and corporal punishment) on peer attachment. It was found that the direct path from neither fathers' nor mothers' harsh discipline to peer attachment was significant, but significant indirect paths were observed from both father's and mother's harsh discipline to peer attachment. Specifically, the effects of harsh discipline by one parent on peer attachment through the attachment between that parent and the child but not through the attachment between their spouse and the child. These results emphasize the critical role of parent-child attachment in the relations between harsh parental discipline and children's peer attachment. Moreover, no significant differences across gender were found in the direct and indirect relations between harsh parental discipline and peer attachment.

The results showed that the effect of harsh parental discipline on peer attachment was through parent-child attachment. Specifically, fathers' and mothers' psychological aggression and corporal punishment were negatively and significantly associated with father- and mother-child attachment, respectively, which in turn were positively associated with peer attachment. Previous studies suggested that the painful nature of harsh parental discipline can evoke children's feelings of helpless, anxiety, and fear (Gershoff 2002), which may result in children communicating and interacting less with their parents, and further damage the parent-child attachment. In addition, after being punished, children also feel a sense of humiliation and resentment (Ramsburg 1997). Such feeling might trigger children's disapproval of harsh parental discipline and evoke their psychological revenge, which can increase the parent-child conflict, and therefore reduce the child's attachment to their parent. Thus, children who experienced psychological

aggression and corporal punishment are likely to establish insecure parent-child attachment. Meanwhile, such insecure parent-child attachment may further influence children's later psychosocial functioning, such as peer attachment (Gorrese and Ruggieri 2012; Lindsey et al. 2009; Nickerson and Nagle 2005; Wilkinson 2004). Children's emotion regulation may play an important role in determining the relation of parent-child attachment and peer attachment. Emotion regulation refers to the processes by which individuals monitor, evaluate, and modify emotional reactions for accomplishing social goals (Thompson 1994). Children develop emotion regulation styles largely within parent-child relationships and these modes of dealing with emotions in parent-child relationships are thought to generalize to other interpersonal situations, such as relationships with peers, and thus influence the quality of children's relationships with peers (Contreras et al. 2000). Thus, it is understandable that parent-child attachment has an influence on children's peer attachment. Based on the above analysis, it is reasonable that harsh parental discipline was indirectly related to children's peer attachment through parent-child attachment.

However, the influence of harsh parental discipline may not be as widespread as expected. Psychological aggression and corporal punishment by one parent only predicted the low attachment between themselves and the child but not the low attachment between their spouse and the child. Children's perception of harsh discipline could explain this result. Children may interpret harsh discipline as an indication of hostility or rejection from the parent who engages harsh discipline toward them, which, in turn, only creates a barrier between this parent and themselves. This means that children's negative perception of harsh discipline by one parent do not affect the perception of another parent and thus do not have an influence on the relationships with another parent. Thus, harsh discipline by one parent only has negative effects on the attachment between this parent and the child but not on the attachment between his/her spouse and the child. For this reason, it is reasonable that the effects of harsh discipline by one parent on peer attachment are only through the attachment between themselves and the child but not through the attachment between their spouses and the child.

In addition, this study detected no significant differences across gender in the direct and indirect effects of both paternal and maternal harsh discipline on peer attachment. At a more general level, the lack of moderation by gender obtained in the current study suggested that harsh parental discipline is equally predictive of children's attachment with both parents and peers for boys and girls. This finding may be explained by the rejection sensitivity, which is a social cognitive processing style characterized by anxious expectations of rejection and the tendency to readily

perceive and overreact to rejection (Downey and Feldman 1996). A previous study found that children's and early adolescent's rejection sensitivity did not differ by gender (Mclachlan et al. 2010). Because this social cognitive processing style was the same for both genders in the period of childhood and early adolescence, the effects of harsh parental discipline on parent-child attachment and peer attachment may be equivalent in boys and girls. Thus, the direct and indirect effects of both paternal and maternal psychological aggression and corporal punishment on peer attachment are equivalent for boys and girls.

Limitations and Implications for Interventions and Future Research

As with any study, there were several limitations in the current study. First, the current study was a cross-sectional study, and the assessment of harsh parental discipline was retrospective. Thus, the findings of this study may be subject to retrospective inaccuracies. In addition, this design limits interpretation to associations rather than causality. Second, this study relied only on self-report data. Although children's perceptions of parental discipline have a stronger prediction of peer relationships compared to parental perceptions of their discipline (Gaylord et al. 2003), such a single-informant design may have caused common method bias that could have inflated some of the associations among the variables and threatened the validity of the conclusions of the present study. Third, our analysis of two parenting constructs (psychological aggression and corporal punishment) with one child outcome (peer attachment) was limited in that the potential contributions of other parenting behaviors (such as parental warmth and neglect) were not considered. Future studies need to examine the broader parenting context in which parental psychological aggression and corporal punishment occur and to explore the potential moderators of parent-child mutual influences. Finally, we only examined the unique effects of father's and mother's harsh discipline, and father-child attachment and mother-child attachment on peer attachment, but the combined effect of father's and mother's harsh discipline, and father-child attachment and mother-child attachment on peer attachment were not tested. Thus, it is not clear whether these factors act single or together to influence peer attachment, and future study is needed to address this question.

More importantly, this study also has important practical implications for improving children's peer relationships. Our findings demonstrated that discipline from both fathers and mothers can affect children's development of peer attachment through parent-child attachment. Thus, to improve the quality of peer attachment, not only mothers but also fathers should reduce the use of harsh discipline

and adopt more nonviolent and appropriate alternative disciplinary strategies. Nonviolent and appropriate disciplinary strategies may contribute to the high quality of parent-child attachment and thus improve the quality of peer attachment. In addition, interventions aimed at enhancing the parent-child relationship is also of benefit to peer attachment. Specifically, enhancing parental ability to create a safe and nurturing environment for their children is a good way to improve the quality of parent-child attachment, which in turn may improve peer attachment.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed involving human participants were in accordance with the ethical standards of the institutional and national research committee.

Informed Consent Informed consent was obtained from all parents and children included in the study.

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