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## Does the gender of parent or child matter in child maltreatment in China?

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### Abstract

Child maltreatment is a public health problem worldwide, and China is no exception. However, the pattern of child maltreatment remains unknown, including whether the gender of children and their parents has an impact on the occurrence of maltreatment. This study aims at examining the rates and frequency of child maltreatment, including physical abuse, psychological abuse and neglect perpetrated by mothers and fathers. We also test whether the interaction between parents' gender and their child's gender affects the occurrence of child maltreatment in China. 997 children from the China Jintan Child Cohort Study participated in the present study and reported their maltreatment experience perpetrated by their mothers and fathers using the questionnaire, Parent–Child Conflict Tactics Scale (CTSPC\_CA). Generalized linear model analyses show that boys were more likely than girls to report physical abuse, and, in particular, boys were more likely than girls to be physically abused by their fathers. On the other hand, mothers were more likely than fathers to exhibit psychological aggression and use corporal punishment for both boys and girls. There was no difference based on the child's or parent's gender in the occurrence of neglect. The findings present empirical evidence that enhances the understanding of the pattern of child maltreatment in China, provide implications for social workers and health professionals to identify children at risk of child maltreatment, and shed light on future research studies.

### Keywords

Child maltreatment; Parent; Gender; China

### Introduction

Child maltreatment is a public health problem worldwide (Butchart, Harvey, Mian, & Furniss, 2006; Oates, 2013; Stoltenborgh, Bakermans-Kranenburg, van IJzendoorn, & Alink, 2013), including in China. It is estimated that 1 in 4 children has experienced some type of physical abuse during childhood or neglect (Fang et al., 2015; Ji & Finkelhor, 2015), and 1 in 5 children have experienced some form of psychological aggression (Fang et al., 2015). In

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Conflict of Interest

There is no conflict of interest for the authors.

particular, the rate of physical abuse is higher than the international estimate (22.6%) from a meta-analysis of the 111 studies conducted in Africa, Asia, Australia, Europe, North America and South America, and the estimate (16.7%) for Asian studies only (Stoltenborgh et al., 2013). Child maltreatment is associated with psychological and behavioral problems in childhood and early adulthood, such as depression, anxiety disorders, smoking, alcohol and drug abuse, aggression and violence toward others, risky sexual behaviors and post-traumatic stress disorder, in later life (Anda et al., 2006; Dube et al., 2001; Gershoff, 2002; Gilbert et al., 2009; Lansford et al., 2002; MacKenzie, Nicklas, Waldfogel, & Brooks-Gunn, 2013; Scott, Smith, & Ellis, 2010; Thornberry, Henry, Ireland, & Smith, 2010). Findings from studies in China show that child maltreatment also negatively impacts children's health outcomes as well (Gershoff et al., 2010; Kwok, Chai, & He, 2013; Wong, Leung, Chow, Kam, & Tang, 2010). It has been reported that child gender (especially boys) is a risk factor of child maltreatment in China (Liao, Lee, Roberts-Lewis, Hong, & Jiao, 2011). Few studies, however, have explored the role of parents' gender and the interaction of the gender-specific parent-child dyad that play in the occurrence of child physical maltreatment, psychological aggression and neglect among Chinese children.

### Gender of Parents as a Factor

The majority of Chinese studies on child maltreatment reveal an overall rate of child maltreatment perpetrated by either parent (Ji & Finkelhor, 2015); few studies have compared the differences between mothers and fathers in the rates of maltreatment toward children. Research in Western countries and Hong Kong shows that mothers report higher rates and more frequent use of corporal punishment toward their children than fathers do (Lansford et al., 2002; Tang, 2006). Wang and Liu (2014) found that more Chinese mothers reported psychological aggression and corporal punishment in Mainland China. A large study that was conducted in nine countries, including Mainland China, in which parents reported information about their use of corporal punishment with their children, also reveals the same usage pattern for mild corporal punishment, while the results regarding severe corporal punishment show that fathers are more likely to be the perpetrators (Lansford et al., 2010).

These findings can be explained by the Chinese traditional gender-linked child rearing practice. Due to the influence of Confucianism and the patriarchal social and family structure, Chinese fathers are viewed as instrumental providers, and are culturally empowered to use physical force or other forms of harsh strategies to discipline children and train their obedience (Ho, 1987; Ng, Bhugra, McManus, & Fennell, 2011). On the other hand, Chinese mothers play a more caring role in child rearing, such as feeding, dressing and providing emotional support (Jankowiak, 1992). As the primary caregivers, mothers spend more time with children, and therefore they are more likely to conflict with their children and practice more minor form of disciplinary strategy such as psychological aggression and corporal punishment to handle the conflicts and correct children's misbehavior. This gender-linked parenting style is consistent, to some extent, with findings from the western society that mothers demonstrate more authoritative (e.g. emotionally supportive and responsive) parenting styles and fathers exhibit more authoritarian (e.g. less supportive and high-control) parenting styles (Russell, Hart, Robinson, & Olsen, 2003; Tein, Roosa, & Michaels, 1994).

### Gender of Child as a Factor

The gender of a child is also associated with the occurrence of child maltreatment perpetrated by parents. Studies in the Chinese context find that boys are more likely than girls to be physically abused (Liao et al., 2011), while girls are more likely than boys to be neglected (Hua et al., 2014). This phenomenon reflects the parental gender-linked expectations for children. Chinese boys, as compared to girls, face higher expectations from parents with respect to their abilities, educational investment and success, and old-age support (Hannum, Kong, & Zhang, 2009). Corporal punishment and even physical abuse have been used as a child-rearing practice to enhance parents' strict discipline for children (particularly for boys), to train their moral behavior and obedience, and to correct misbehavior. Due to the higher value and expectations of boys, they are less likely to be neglected than girls by their parents.

The disparity of child abuse between boys and girls may be also due to gender-linked behavior characteristics. Disobedience is one of the main reasons why Chinese parents practice corporal punishment (Qiao & Xie, 2015). Boys demonstrated more aggressive and delinquent behavior (Xing, Wang, Zhang, He, & Zhang, 2011), which may be regarded as misconduct that disturbs interpersonal harmony or being unfilial to their parents. Therefore, they are at higher risk of being disciplined by minor or severe forms of harsh discipline to regulate their behaviors. In contrast, girls are socialized as more obedient, considerate and less aggressive in the Chinese context and are less likely to elicit parental harsh discipline (Xing & Wang, 2013).

### Interplay between Parents' Gender and Child's Gender

The interplay between the parents' gender and the child's gender in the occurrence of child maltreatment in the Chinese context remains poorly understood. Traditionally, father-son relationship is the most important relationship in the Chinese kinship, and fathers are often more demanding with their sons (Ho, 1987; Jankowiak, 1992). However, researchers found that there is no significant gender interaction in child abuse—both parents are more likely to mistreat boys than girls (Lansford et al., 2010; Wang & Liu, 2014), indicating that in spite of the traditional gender-linked role in child rearing, both mothers and fathers are equally involved in disciplining children, especially for boys.

It should be noted that these findings should be explained cautiously due to limitations. For example, the survey instrument used in Lansford et al. (2010) is a self-developed tool, and it has not been validated; therefore, the reliability and validity of the findings is unclear. With respect to Wang and Liu (2014), although they collected data from both mothers and fathers using an established instrument, they failed to consider the dyadic nature of the data in the analysis and to address the possible interaction between parental gender and child gender because they treated maternal and paternal child abuse separately. In addition, it is found that paternal involvement in child discipline increases with children growing up (Jankowiak, 1992), however, the children sample aged from 3 to 15 years old were treated as a homogenous group in Wang and Liu (2014), which may be inappropriate to reveal the dyadic parent-child relationship specific to an early adolescent population. Third, in Wang and Liu (2014), researchers collected child abuse information from parents. However,

studies suggested that parents tend to underreport child abuse especially severe forms such as physical abuse and child reports is relatively more accurate and informative in estimating the occurrence of child maltreatment (Chan, 2012; McGee, Wolfe, & Wilson, 1997; Winegar & Lipschitz, 1999). Last but not least, to our knowledge, no study has attempted to examine the parent-child gender interaction in neglect.

To fill in the gaps, the present study aims to (1) describe the prevalence and frequency of child maltreatment including psychological aggression, corporal punishment, physical abuse (severe physical abuse and very severe physical abuse) and neglect, and (2) examine the pattern of the role of parents' and child's gender role in the occurrence of child maltreatment, among a Chinese community sample of early adolescents. We measured the self-report child maltreatment using a validated and widely used tool—the Parent–Child Conflict Tactics Scale (CTSPC) (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998)—to decrease the rate of inaccurate responses (Bifulco, Brown, & Harris, 1994).

## Methods

### Participants and Procedures

The present study is part of the Wave II of the Jintan Child Cohort Study (Liu, McCauley, Zhao, Zhang, & Pinto-Martin, 2010; Liu, McCauley, et al., 2011; Liu et al., 2015). The cohort was built in 2004–2005 in Jintan City, China. Using a two-step cluster sampling method (details were described in Liu et al., 2010), 1,656 children who were representative of the children aged 3–5 years old in Jintan city were invited to participate. During Wave I of data collection in 2005–2007, 1,385 children and their parents and teachers responded to the study with a response rate of 83.6% (Liu, Ai, et al., 2011). 1,110 out of the 1,385 children were followed up during Wave II of data collection in 2011–2013 with an attrition rate 19.8%. Children who were followed up did not differ significantly from those who were not in terms of sociodemographic characteristics, intelligence (i.e. IQ) and behavior problems (measured by Child Behavior Checklist, Liu et al., 2010, 2015) in Wave I. We distributed the Parent–Child Conflict Tactics Scale among these 1,110 children in 2013 and 1,021 of them (53.6% boys, mean age  $13.3 \pm 0.9$  years) returned the questionnaire. Out of the 1,021 children, 997 (97.6%) had completed data on CTSPC and were retained in the analysis. The sample characteristics are described in Table 1.

Informed consent was obtained from teachers, parents and children. The survey took place during the regularly scheduled class time. A teacher was in the classroom to maintain discipline, and two trained research assistants were in charge of the distribution and collection of the questionnaires, as well as explaining the objectives and confidentiality of the study and answering any questions the respondents had. This study was cross-sectional designed and was approved by the Institutional Review Board of University of Pennsylvania and the Ethics Committee of the Jintan Hospital.

### Measures

**Child Maltreatment.**—*The Parent–Child Conflict Tactics Scale* (CTSPC) (Straus et al., 1998) covered non-violent disciplinary behaviors (4 items; example: “[Mother/Father]

explained why something was wrong”) and three categories of child maltreatment: (a) psychological aggression (5 items; example: “[Mother/Father] swore or cursed at me”), (b) physical assault, including corporal punishment (6 items; example: “[Mother/Father] spanked me on the bottom with bare hand”), and physical abuse (7 items), including severe physical abuse (3 items; example: “[Mother/Father] hit me with a fist or kicked me hard”) and very severe physical abuse (4 items; example: “[Mother/Father] beat me up”), and (c) neglect (5 items; example: “[Mother/Father] left me home alone even when some adult should have been with me”). Children were asked to provide information regarding whether their parents (mother and father separately) displayed these behaviors in the preceding year and, if it had happened, the frequency of these behaviors on a scale 1–6. Similar to the scoring method in Straus et al. (1998), response categories were coded as 0 for “never,” 1 for “once,” 2 for “twice,” 3 for “3–5 times,” 4 for “6–10 times,” 5 for “11–20 times,” and 6 for “more than 20 times”. We dichotomized the responses into two categories to indicate whether a child had experienced child maltreatment in the previous 12 months: 0 “non-maltreated”, and 1–6 “maltreated”. Non-maltreated children were those with zeros on all items in that subscale. Otherwise, they were labeled as victims of such maltreatment. In addition, in order to obtain the frequency of child maltreatment, we recoded values from 3 through 6 to be the midpoint of each category (i.e. 3 = 4, 4 = 8, 5 = 15, and 6 = 25; 0–2 remains the same) (Straus et al., 1998). The sum of the item scores in each subscale produced the frequency of each type of child maltreatment. The Chinese version of CTSPC CA is available and showed satisfactory to good reliabilities (0.58–0.87) (Chan, 2012). For the present study, the internal reliability of non-violent discipline was 0.36 for mother and 0.38 for father; psychological aggression, 0.63 (mother) vs. 0.65 (father); corporal punishment, 0.73 (mother) vs. 0.77 (father); physical abuse, 0.69 (mother) vs. 0.65 (father); and neglect, 0.53 (mother) vs. 0.63 (father).

**Co-variables.**—Children completed a self-administered General Information Questionnaire to provide information about their gender, age, parents’ education level, marital status, and grade.

## Data Analysis

We summarized the sample characteristics using descriptive statistics, including median, first and third quartile, frequency and percentage. Due to the dyadic nature of the data, McNemar’s chi-square test was used to compare differences in the reported occurrences of child maltreatment by father and by mother. The Wilcoxon signed rank test was used to compare the frequency of each type of child maltreatment between mother perpetrators and father perpetrators. We used the method proposed by Horton and Fitzmaurice (2004) of a generalized linear model (GLM) with robust standard error to test if the occurrence was dependent on both child and parent genders. First, we constructed a model (Model I) without any interaction terms; then, we added the interaction term of child–parent gender into Model I to create Model II. There is a small proportion (7%) of participants who had missing values on the covariates. Listwise deletion was used to handle this issue in GLM. The rationale for this method is that in the present study, missingness on the covariates (maternal education, paternal education and maternal marital status) was not significantly associated with non-violent discipline or any type of child maltreatment from a series of chi square tests and t

tests. Listwise deletion produces approximately unbiased estimates in regression analyses when “missingness on the predictors does not dependent on the dependent variable” (Allison, 2001, p. 75). The significance level was set at  $\alpha = 0.05$ . Analyses were performed using Stata 13.0 (College Station, TX).

## Results

### The Prevalence of Child Maltreatment

Children reported that non-violent discipline strategy was the most frequently used type of discipline by both fathers (85.8% for boys and 88.3% for girls) and mothers (88.8% for boys and 92.2% for girls). About two-thirds of the children experienced psychological aggression by mothers, and more than half of the children experienced psychological aggression by fathers. About half of boys reported experiencing corporal punishment from their parents, and this rate did not differ by parent’s gender. The rate of girls has experienced corporal punishment by mothers and by fathers were 47.1%, 39.9% respectively. About one third boys reported physical abuse by their parents and less girls reported physical abuse perpetrated by mothers (22.6%) and by fathers (15.2%). Approximately half of the sample reported neglect by their parents in the previous 12 months. About 8 out of 10 children had experienced at least one type of child maltreatment. These results are described in Table 2.

### Child Maltreatment by Parents among Boys and Girls: Bivariate Association

Table 2 summaries the results from McNemar’s chi-square tests and Wilcoxon signed rank tests. It shows that mothers than fathers were more likely to use more frequent strategies like non-violent discipline and psychological aggression with their boys or girls ( $p$  values  $<0.05$ ). Mothers more were reported to be perpetrators of physical abuse or any type of child maltreatment against girls ( $\chi^2 = 19.93, 19.69$  respectively  $p < 0.001$ ). In contrast, more fathers (31.7%) than mothers (28.2%) practiced physical abuse against boys ( $\chi^2 = 4.81, p < 0.05$ ). Boys were more likely to be neglected by their fathers than by their mothers ( $\chi^2 = 4.81, p < 0.05$ ). With respect to neglect with girls, there was no gender difference between mothers and fathers ( $\chi^2 = 0.04, p > 0.05$ ).

In terms of frequency of child maltreatment, mothers perpetrated more frequent maltreatment (all types except neglect) against girls than fathers did ( $p$  values  $<0.05$ ). Among boys, mothers also practiced more frequent non-violent discipline and psychological aggression ( $p$  values  $<0.05$ ), while the frequencies of perpetration of corporal punishment, physical abuse and neglect were higher for fathers than for mothers ( $p$  values  $<0.05$ ).

### The Influence of Gender of Parent–Child Dyads on Child Maltreatment

Table 3 shows the results from the generalized linear with binomial function. Model I shows that, when controlling for the covariates, the main effects were that boys were more likely to be either physically punished or abused. Fathers were less likely than mothers to practice psychological aggression (OR = 0.81, 95% CI: 0.72–0.91) and corporal punishment (OR = 0.88, 95% CI: 0.79–0.99). Neither child’s gender nor parent’s gender predicted the occurrence of neglect.

In Model II, the interplay between child's gender and parent's gender in predicting physical abuse was significant as a whole, as well as for the two subtypes of severe and very severe physical abuse separately. In comparison to the percent of girls that were physically abused by father, boys were 1.44 (95% CI: 1.12–1.87) times more likely to report an experience of physical abuse by their fathers. Similarly, boys were more likely to report fathers as the perpetrator of severe physical abuse (OR = 1.38, 95% CI: 1.06–1.80) and very severe physical abuse (OR = 1.47, 95% CI: 1.10–1.96) than girls.

## Discussion

In this cross-sectional study, we found a significant prevalence of psychological aggression, physical abuse and neglect in our sample. In addition, we found significant differences on rates of maltreatment according to child's and parent's gender. Boys were more likely than girls to report physical abuse, and, in particular, abuse perpetrated by their fathers. Furthermore, mothers were more likely than fathers to practice psychological aggression and corporal punishment against both boys and girls. There is no gender difference with respect to neglect after controlling confounders.

First of all, we found that non-violent discipline is the most common disciplinary method used by Chinese parents. Nevertheless, the prevalence of child maltreatment is also high. Psychological aggression is the most common type of child maltreatment, which is consistent with the report by Wong et al. (2009). Moreover, approximately 40% of children have experienced minor physical abuse in the preceding year, while 20% have experienced severe physical abuse, results which are similar to those reported in a meta-analysis of 47 studies on physical abuse conducted in the Mainland, Hong Kong and Taiwan (Ji & Finkelhor, 2015). However, with respect to very severe physical abuse, our result (8.9–20.9%) seems to be higher than that reported by Ji and Finkelhor (2015), who found a rate of 7.8% (95% CI: 5.0–10.5) in their meta-analysis. Nonetheless, since the prevalence of very severe physical abuse is much higher in Mainland China than among a non-Mainland Chinese population (Ji & Finkelhor, 2015), it is possible that the estimated rate of very severe physical abuse in the meta-analysis (Ji & Finkelhor, 2015) would be lower than the rate in the Mainland only. Therefore, the higher rate of very severe abuse is reasonable in the present sample. Furthermore, we also find the rate of neglect is as high as about 48% among both girls and boys, which is lower than previous findings in rural areas of China, which found a rate of 63.5% (Zhao et al., 2014), but is higher than that reported in Hong Kong (27.4%; Chan, 2012) and in the urban areas of China (28%; Pan et al., 2005).

We found that boys are more vulnerable than girls to being physically maltreated, which is consistent with previous research findings. Liao et al. (2013) reviewed 24 studies and found that gender plays an important role in the occurrence of child maltreatment in China: boys were more prone to be physically maltreated than girls, a result which aligns with the gender-linked expectations in Chinese culture as mentioned previously, and is consistent with findings in the review of risk factors of child physical abuse in China (Liao et al., 2011). There were no significant differences between boys and girls in the rates of psychological aggression and neglect. However, mothers were more likely to be reported to practice of psychological aggression and corporal punishment, which is consistent with

previous findings (Lansford et al., 2002; Tang, 2006). Straus and Field (2003) also reported that in some regions of the U.S., mothers used more psychological aggression than fathers. This may be because across culture, as the primary caregivers, mothers regard psychological aggression as a harmless strategy compared with corporal punishment and physical abuse, and are more likely to practice toward their children.

In addition, we found a significant interactive effect of parent–child gender on the prediction of severe and very severe physical abuse. Compared to mothers, fathers were reported as more likely to practice severe or very severe physical abuse against boys than against girls. The finding suggests that the traditional father–son relationship remains salient in Jintan City, a small county-level city in south-eastern coastal region of China. Chinese fathers, in comparison to mothers, hold higher gender-specific expectations for boys, and are the primary disciplinary providers. Although the typical view is that mothers are central to child rearing (Jankowiak, 1992), Chinese fathers are actively involved in the educating and disciplining of school age children (Jankowiak, 1992). In particular, it is more the fathers’ responsibility to correct children’s misbehavior and train their morality, while mothers are more responsible for household duties such as dressing, cooking, and feeding (Short, Zhai, Xu, & Yang, 2001). Therefore, Chinese fathers may practice harsher discipline that could develop into physical abuse on boys, who are expected to carry on the family’s name and achieve high academic performance. This is also supported by the finding that Chinese adolescents perceive their father’s parenting characteristics as being harsher than their mother’s (Shek, 1998). On the other hand, it is also possible that Chinese fathers are more protective of their daughters than of their sons, and therefore are less inclined to using brutal forms of physical force toward their daughters. This is also supported by the ethnographical observations by Jankowiak (1992) that Chinese fathers become more preferable to girls than boys because they increasingly realize that boys are “unreliable in fulfilling family obligations” (p. 358), while girls are easier to interact with in an open and warm way and are more loyal and considerate in taking care of them. However, it still lacks empirical evidence of why mothers and fathers practice maltreatment toward children respectively and whether the reasons are different between mothers and fathers and between boys and girls, which warrants future research.

The present study has several limitations. First, we only collected information from the perspective of children. Since the agreement between child reporting and parent reporting of child maltreatment is low (Chan, 2012), the present study is limited on whether children’s reports of child maltreatment are consistent with parents’ reports. We suggest that further research use a multi-informant approach to further explore the pattern of child maltreatment in China. Second, we collected the information by asking children to recall their experience in the preceding 12 months. Thus, recall bias is inevitable (Tang, 1998). Third, our sample was from a small county-level city on the eastern coast of China, and the present findings may be not generalizable to rural or metropolitan areas of China. Fourth, some covariates may be omitted in the present study. For example, socioeconomic status, unmeasured in the study, shows correlation with child maltreatment (Liao et al., 2011). Gender desirability may also confound the relationship between parent–child gender and child maltreatment. A desired boy/girl may be less likely to be maltreated. Further studies are needed to explore the effect of gender desirability on child maltreatment in the Chinese context.



Last but not least, sexual abuse was not included in the present study. The participants' parents and teachers informed the researchers that questions about child sexual abuse were too sensitive and inappropriate for the children to answer. In addition, the present study focuses on child maltreatment practiced by parents; however, due to Chinese culture, victims of child sexual abuse are usually very unlikely to report such experience, especially when the perpetrators were their family members (Finkelhor, Ji, Mikton, & Dunne, 2013; Ji, Finkelhor, & Dunne, 2013; Stoltenborgh, van IJzendoorn, & Euser, 2013). In order to maintain adequate response rate and decrease report bias, we did not measure child sexual abuse experience in the present study. However, sexual abuse is an important type of child maltreatment and shows association with negative health and developmental outcomes in the Chinese context (e.g. Chen, Dunne, & Han, 2004, 2006). However, the existing studies of child sexual abuse in China fail to clarify the perpetrators' relationship with victims. We suggest future research explore the situation of child sexual abuse perpetrated by family members and the interaction of parent-child gender in the occurrence of child sexual abuse in the Chinese context.

In spite of these limitations, the present study contributes to the literature by revealing an interactive pattern of parent's and child's gender in the occurrence of child maltreatment, and, in particular, the occurrence of severe and very severe physical abuse. The knowledge gained from the present study will enhance the understanding of gender equity in China in the area of child maltreatment. The findings of how child physical abuse depends on both parents' and child's genders also can help the Chinese social workers and health professionals to better identify vulnerable children at risk. The present study also can shed light on identification of target of intervention to prevent child maltreatment. For example, interventional programs targeting more at paternal parenting with boys could be effective to prevent physical abuse, while programs targeting at mothers could focus more on corporal punishment and psychological aggression. Both parents should be involved in the prevention of neglect.

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**Table 1**Sample characteristics ( $n = 997$ ).

	Mean $\pm$ standard deviation	Frequency (%)	By mother (%)	By father (%)
Age	12.79 $\pm$ 0.96			
Gender				
Boys		536 (53.8)		
Girls		461 (46.2)		
Grade				
6		328 (32.9)		
7		287 (28.8)		
8		382 (38.3)		
Mother's education <sup>b</sup>				
Middle school or lower		394 (41.3)		
High school		226 (23.7)		
College or higher		335 (35.1)		
Father's education <sup>a</sup>				
Middle school or lower		284 (29.7)		
High school		287 (30.0)		
College or higher		386 (40.3)		
Parents' marital status <sup>a</sup>				
Married		891 (95.9)		
Divorced		38 (4.1)		
Non-violent discipline			90.4	87.0
Child maltreatment				
Psychological aggression			66.3	58.1
Corporal punishment			50.1	45.8
Physical abuse			25.6	24.1
Severe physical abuse			22.9	21.4
Very severe physical abuse			16.8	15.3
Neglect			47.9	49.8
Any type of child maltreatment <sup>b</sup>			80.4	76.3

<sup>a</sup>System missing data.<sup>b</sup>Any type of child maltreatment includes at least one of the following: psychological aggression, corporal punishment, physical abuse, and neglect.

**Table 2**  
The prevalence and frequency of non-violent discipline and child maltreatment in the previous 12 months.

	Boys (n = 536)						Girls (n = 471)					
	Prevalence (%)		Frequency (Median (Q1-Q3))		Signed rank test		Prevalence (%)		Frequency (Median (Q1-Q3))		Signed rank test	
	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father
Non-violent discipline	88.8	85.8	7.55**	9 (2-25)	8 (2-23)	2.70**	92.2	88.3	8.10**	13 (4-27)	8 (2-25)	5.61***
Child maltreatment												
Psychological aggression	66.3	57.7	15.07***	2 (0-9)	1 (0-7)	3.77***	68.5	59.1	24.60***	2 (0-11)	1 (0-6)	7.06***
Corporal punishment	53.5	50.9	2.65	0 (0-5)	0 (0-5)	-0.81	47.1	39.9	13.44***	0 (0-4)	0 (0-2)	6.22***
Physical abuse	28.2	31.7	4.81*	0 (0-1)	0 (0-2)	-3.05**	22.6	15.2	19.93**	0 (0-0)	0 (0-0)	4.65***
Severe physical abuse	25.4	28.4	3.46	0 (0-1)	0 (0-1)	-2.38*	20.0	13.2	17.47***	0 (0-0)	0 (0-0)	4.20***
Very severe physical abuse	18.	20.9	2.57	0 (0-0)	0 (0-0)	-2.16*	14.5	8.9	17.79***	0 (0-0)	0 (0-0)	3.85***
Neglect	48.1	51.7	5.13*	0 (0-4)	0 (0-4)	-3.79***	48.5	48.2	0.04	0 (0-4)	0 (0-4)	-1.51
Any type of child maltreatment <sup>b</sup>	79.4	77.5	1.67	8 (1-26)	7 (1-27)	-0.87	81.6	74.6	19.69***	8 (1-27)	5 (0-24)	6.53***

<sup>a</sup>McNemar's Chi<sup>2</sup> test compares the rates of different type of child maltreatment between mother perpetrators and father perpetrators; Q1, the first quartile; Q3, the third quartile; the negative sign of Signed rank test indicates that fathers perpetrated more frequent child maltreatment than mothers did.

<sup>b</sup> Any type of child maltreatment includes at least one of the following: psychological aggression, corporal punishment, physical abuse, and neglect.

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

\*\*\*  $p < 0.001$ .

**Table 3**

The Generalized Linear Models of the parent–child gender in the occurrence of non-violent discipline and child maltreatment.

	Psychological aggression OR (95% CI)	Corporal punishment OR (95% CI)	Physical abuse OR (95% CI)	Severe physical abuse OR (95% CI)	Very severe physical abuse OR (95% CI)	Neglect OR (95% CI)
Model I						
Child gender						
Boys ( <i>n</i> = 548)	0.92 (0.81, 1.03)	<b>1.22 (1.09, 1.37)</b>	<b>1.41 (1.24, 1.61)</b>	<b>1.41 (1.24, 1.62)</b>	<b>1.42 (1.23, 1.64)</b>	1.04 (0.93, 1.17)
Parent gender						
Father	<b>0.81 (0.72, 0.91)</b>	<b>0.88 (0.79, 0.99)</b>	0.96 (0.84, 1.09)	0.94 (0.82, 1.08)	0.91 (0.71, 1.18)	1.05 (0.94, 1.17)
Model II						
Child gender						
Boys ( <i>n</i> = 548)	0.88 (0.75, 1.05)	1.15 (0.98, 1.36)	<b>1.18 (1.00, 1.41)</b>	<b>1.21 (1.01, 1.46)</b>	1.16 (0.96, 1.41)	0.99 (0.84, 1.16)
Parent gender						
Father	<b>0.78 (0.66, 0.93)</b>	<b>0.83 (0.70, 0.99)</b>	<b>0.77 (0.63, 0.94)</b>	<b>0.79 (0.64, 0.99)</b>	<b>0.73 (0.59, 0.92)</b>	0.99 (0.84, 1.17)
Boys*father	1.06 (0.84, 1.35)	1.12 (0.89, 1.41)	<b>1.44 (1.12, 1.87)</b>	<b>1.38 (1.06, 1.80)</b>	<b>1.47 (1.10, 1.96)</b>	1.10 (0.88, 1.38)

*Notes.* The reference level for child's gender and parents' gender are girls and mothers respectively. Model adjusted grade, maternal and paternal education, and marital status. Bolded OR (95% CI) are OR with  $p < 0.05$ .