

Full title: Children Exposed to Child Maltreatment and Intimate Partner Violence: A Study of

Co-occurrence Among Hong Kong Chinese Families

**Author:** Ko Ling Chan, Ph.D.

Assistant Professor, Department of Social Work and Social Administration, University of Hong Kong, Hong Kong SAR, China.

## **Abstract**

*Objective.* This study assessed the co-occurrence of child maltreatment and intimate partner violence (IPV) and examined the association between them.

*Method.* The cross-sectional study recruited a population-based sample of 1,094 children aged 12-17 years in Hong Kong. Structured questionnaires were used to collect data from the children. The prevalence of occurrence of child abuse and neglect by parents and exposure to IPV in both the past year and lifetime was examined, and their correlates were assessed using univariate and multivariate logistic regression.

*Results.* The results show that 26% and 14.6% of child participants had been exposed to IPV physical assault, and 44.4% and 22.6% had been subjected to a parent's corporal punishment or to physical maltreatment from a parent in their lifetime and the year preceding the study, respectively. Among those families characterized by IPV, 54.4% and 46.5% were involved in child physical maltreatment over the child's lifetime and in the preceding year, respectively.

*Conclusions.* Multivariate logistic regression analyses revealed that children exposed to IPV were at higher risk of being victims of neglect, corporal punishment, and physical maltreatment or severe physical maltreatment by their parents than children who were not exposed to IPV, even when child and parent demographic factors were controlled for.

*Practical implications.* The higher risk of child physical maltreatment associated with IPV highlights the need for an integrated assessment to screen for the presence of multiple forms of family violence within the family, and for intervention to assess effective responses to both IPV and child maltreatment by child protective service workers and domestic violence agencies.

**Keywords:** Child Maltreatment, Corporal Punishment, Intimate Partner Violence, Co-occurrence

Cross-cultural research has shown that child maltreatment is an issue throughout the world that cuts across culture, class, education, income, and race (Pineiro, 2006). To better understand the problem, it is important to study the context and the background of the family in which child maltreatment occurs. Recent articles have called attention to the context in which intimate partner violence (IPV) and child maltreatment coexist within a family (Casanueva, Kotch, & Zolotor, 2007; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). Reviews of overlapping of child maltreatment and IPV have shown a rate of co-occurrence ranging from 4% to 100% in studies using battered women samples, 26% to 50% among children involved in reports to child protection agencies, and 6% to 21% for the general public (Appel & Holden, 1998). In a review examining 25 studies, Edleson (1999) reported a co-occurrence rate ranging from 30% to 60%. Many scientific studies employ shelter samples, clinical samples, or small community samples as their participants, which greatly reduces the generalizability of results to the larger community. On the other hand, studies using community samples as their participants are also prone to methodological limitations that confound the results. For example, a study based on representative samples has reported a co-occurrence rate of 6.9%, which is likely to be underreported since families with children under age 3 were not included (Gelles, 1997). A review of five representative community samples reported a co-occurrence rate between 5.6%

and 19.4% (Casanueva et al., 2007). But despite the different methodology and samples adopted across studies, the co-occurrence of IPV and child maltreatment has been widely documented.

Research findings concerning whether the prevalence of IPV varies as a function of gender have not yet allowed researchers to reach a solid conclusion. Some revealed gender differences between the prevalence of violence which, specifically, involve male perpetrators and female victims (Rennison & Welchans, 2000; Tjaden & Thoennes, 1998); whereas others demonstrated that women are as violent as men and most violent acts are actually mutual and bidirectional (Archer, 2000; Straus, 2008; Straus & Ramirez, 2007). Possible reasons for the mixed research findings can be the failure of measures to capture the contexts, motives, and consequences of IPV (Dutton, 1994); the use of different samples (e.g. clinical or representative) across studies (Archer, 2000); and even the disparity of definitions of IPV. Cultural factors may also contribute to the difference of findings across study. For example, Chinese societies place high values on Confucianism which emphasizes gender roles and hierarchy within family. Chinese women were often expected to be a virtuous wife and obedient to her family and husband, and therefore may be at higher risk for IPV victimization when compared to Western populations (Tiwari et al., 2009). As another example, the Latino concept of machismo, which can be defined as values and behaviors associated with masculinity, invulnerability, and bravery (Whitaker & Reese, 2007), may also encourage men to be controlling and aggressive to their wives who are believed

to have the obligation of serving and being available for men.

Recent research shows that parents, more often fathers, can serve as the perpetrators of both IPV and child maltreatment (Dixon, Hamilton-Giachritsis, Browne, & Ostapuik, 2007; Lutenbacher, 2002; Shipman, Rossman, & West, 1999; Straus & Gelles, 1996). Men often commit a more severe type of family violence and child maltreatment (Casanueva et al., 2007). However, not only will the perpetrators of IPV initiate child maltreatment, the victims of IPV may also abuse their children. Mothers battered by intimate partners are more likely to physically abuse their children than non-abused mothers (Casanueva, Foshee, & Barth, 2005; Cooney, 2004; Margolin, Gordis, Medina, & Oliver, 2003). A model explaining the directionality of abusive relationships has shown that a woman suffering from IPV might respond to her victimization by physically abusing her child (Appel & Holden, 1998). Such behaviors may be explained by the abused mother's efforts to protect her children from a more aggressive father, as well as by the possibility that the battered mother may have learned to use violence to take control over her children under stressful conditions (Casanueva & Martin, 2007). Studies have also indicated that the rates of child abuse by father and mother are similar in families where IPV occurs (Dixon et al., 2007). Thus, both the perpetrators and victims of IPV can be perpetrators of child maltreatment. Parents using violence to solve spousal disputes are more likely to use aggressive tactics towards their children; thus, negative marital interactions

may spill over into the parent-child relationship, resulting in child abuse (O'Keefe, 1995).

The relations between child maltreatment and IPV may be understood by examining the risk factors commonly associated with them, including family-related factors such as poverty, life stressors, neighborhood violence, parental history of severe punishment, marital problems, marital conflict, poverty, social isolation, and other negative aspects of family life, including unemployment and insufficient income (Gewirtz & Edleson, 2007; Herrenkohl & Herrenkohl, 2007; Herrenkohl et al., 2008; Kantor & Jasinski, 1998; Lee, Kotch, & Cox, 2004). Perpetrator-related risk factors such as parental mental health, chronic illness, loneliness, educational level, criminal history, unemployment, alcohol or drug abuse, and parental skills are also reported to be associated with child maltreatment and IPV (Dube et al., 2001; Hartley, 2002; Herrenkohl et al., 2008; Kessler, Molnar, Feurer, & Appelbaum, 2001; Tajima, 2004). Most empirical studies to date have suggested that IPV is a risk factor for child maltreatment, with some variance based on different samples, characteristics of the perpetrators, and different types of violence. Current research has also demonstrated that families in which IPV occurs report a much greater rate of physical punishment (Berger, 2005; Casanueva, Martin, & Runyan, 2009; Lee et al., 2004; Tajima, 2000). Studies using representative samples have also verified the connections between IPV and psychological aggression (Zolotor, Theodore, Coyne-Beasley, & Runyan, 2007) and neglect (Casanueva et al., 2009). The association between IPV and child sexual abuse has been

established as well (Rumm, Cummings, Krauss, Bell, & Rivara, 2000).

A major shortfall of existing studies concerning the co-occurrence of child maltreatment and IPV is that nearly 90% of the existing data are collected from a single informant, often based on the mother's report (Appel & Holden, 1998). On one hand, research based on battered women may result in an underreporting of co-occurrence rates because of fears of the perpetrator, worry over legal actions against the batterer, and the social desirability effect (Appel & Holden, 1998). On the other hand, battered women may overreport by exaggerating the perpetrator's abusive behavior under stressful conditions (Bourassa, 2007). In a sample of college students, women reported a higher rate of parental IPV (21%) than did men (14%) (Silvern et al., 1995). In consequence, studies using self-reports by battered women may show different results in the rates of IPV and child maltreatment from those using children's reports and hence produce a different picture of overlapping abuse within the family.

In most studies involving children as participants, children have been asked for demographic information (Graham-Bermann & Seng, 2005; Kaslow & Thompson, 2008; Shipman et al., 1999) or about the consequences of polyvictimization (Graham-Bermann & Seng, 2005; Grych, Jouriles, Swank, McDonald, & Norwood, 2000; Hughes, Parkinson, & Vargo, 1989; McCabe, Lucchini, Hough, Yeh, & Hazen, 2005; Shen, 2009). Only a few studies have involved children as informants to report on IPV and child maltreatment using community



samples (Simons, Wu, Johnson, & Conger, 1995), comparison groups (Salzinger, Feldman, Hammer, & Rosario, 1992), clinical samples (McGee, Wolfe, Yuen, Wilson, & Carnochan, 1995), and longitudinal clinical samples (Herrenkohl & Herrenkohl, 2007; Margolin et al., 2009). Studies have found that children report different views from those of their mothers or fathers on how witnessing violence affects them (O'Keefe, 1995). Adolescents reported more child physical maltreatment but less emotional maltreatment or neglect relative to professionals (McGee et al., 1995). Among youth victims of child physical abuse, 50% were exposed to IPV at home (Carlson, 1991). Moreover, a quarter of teen participants who had been exposed to domestic violence were also victims of child abuse (Bourassa, 2007). Using a sample of 119 families, a longitudinal study evaluating the effects of multiple forms of violence on the adjustment of youths reported that over half had experienced child maltreatment and had been exposed to IPV in their lifetime (Margolin et al., 2009). Recent studies of polyvictimization in a national sample of children and youths aged 2 to 17 found that 49% of all children and youth had experienced more than one type of direct or indirect victimization over the course of the year within and outside family context (Finkelhor, Ormrod, & Turner, 2007a, 2007b, 2009; Finkelhor, Ormrod, Turner, & Hamby, 2005). Children and youths having experienced any maltreatment were particularly likely to undergo further victimization (92%), especially by assault (76%) or by witnessing violence or being otherwise indirectly victimized (66%).

Thus, only a few studies have examined children's reports of child maltreatment in the context of IPV and its associated factors using a representative population sample. Moreover, all such studies have been conducted among non-Asian or non-Chinese populations, thus limiting generalizability to Chinese populations. The present study investigates the co-occurrence of exposure to IPV and child maltreatment in the Chinese population by using a large, representative sample collected in Hong Kong. Chinese populations in Hong Kong are heterogeneous. There are more than 19 ethnic groups in Mainland China, with the Han being the dominant ethnic group. Nearly 90% of the population of Mainland China and Hong Kong are Han Chinese (Chiu, 2001). They share similar origins in terms of traditional Chinese culture and values including gender roles, power hierarchy in the family, and face orientation (Chan, 2009). The Chinese culture is predominantly influenced by the traditional philosophies of Confucianism. Generally, Chinese people tend to believe in fatalism to account for life's misfortunes such as family violence (Shen, 2009). Research has supported that the acceptance of fatalism might decrease the maltreated child's motivation to seek help and hence these children exhibit greater behavioral problems and trauma symptoms (Shen, 2005). In addition, Chinese culture values family honor, face saving, and respect for parents. Thus, Chinese people tend to keep family matters private in order to minimize conflicts that might bring shame to the family (Ho, 1990). This may exacerbate the difficulties the families have in coping with violence at the earlier stage.

While accumulating more stress, these families may exhibit more forms of violence. Therefore, the impact of Chinese culture upon the co-occurrence of exposure to IPV and child maltreatment may be unique and different from previous Western samples. This study will contribute to the understanding of the issue in the Chinese population. The present study seeks to examine this gap by using children as participants to report on the co-occurrence of child maltreatment and IPV. It is hypothesized that IPV will be a salient factor in predicting the occurrence of child maltreatment within the family. The results of this study will point to the importance of identifying and addressing multiple types and sources of violence within the same nuclear family. Recognizing the association between IPV and child maltreatment has important implications for clinical practice and intervention.

## **Method**

### **Study Design and Sample**

The study surveyed a representative sample of children living in Hong Kong in 2004. This household survey was the first of its kind conducted in China to examine the prevalence of, and risk factors for, child abuse and partner violence experienced by children aged 12 to 17. A total of 4,347 valid households were randomly sampled from the Register of Quarters maintained by the Census and Statistics Department of the Government of Hong Kong, which is the most

up-to-date and complete sampling frame available in Hong Kong. A stratified sample design by geographical areas was adopted, and sampling units were selected using a systematic replicated sampling technique, with fixed sampling intervals and nonrepetitive random numbers. The use of replicated sampling facilitated the calculation of sampling errors and ensured that the required effective sample size would be met by adjusting the number of replicates used. Only about 6% of the sample was subject to a clustering effect, where more than one target participant came from a single household. Thus, the impact on the variances or sampling errors used in the statistical tests in the sample is likely to be negligible.

The study adopted the household survey method involving face-to-face interviews. A total of 3,049 quarters were successfully enumerated, representing a response rate of 70%. Nonparticipation encompassed both refusals to respond (20%) and a failure to contact potential participants (10%). Research assistants trained to conduct household research interviews interviewed the participants. All family members who met the inclusion criteria during the study period were invited to participate. The inclusion criteria were being a Chinese child aged 12 to 17 whose parents were either married, cohabiting, single, or divorced. Children aged below 12 were not interviewed because it was considered inappropriate to do so, since they might not understand some of the questions asked. Informed consent was obtained from the children and their parents prior to the interviews, and all were informed that the children could refuse to

answer any question. The parents were also interviewed to provide demographic information about themselves and their children. Confidentiality of the data was guaranteed. Once identified as abused, participants were encouraged to seek help and provided with the necessary information for referral. The study was approved by the ethics committee of the University of Hong Kong.

Complete profiles of 1,094 children aged 12 to 17 and their parents were successfully collected. The child participants were about evenly split between boys and girls, and were more or less evenly spread across the various ages, with a mean age of 14.5 ( $SD = 1.7$ ). Most of the child participants (91%) were living in a small family as either an only child or with one sibling; only 9.1% had 2 or 3 siblings. The great majority (93.4%) of child participants were born in Hong Kong with an even distribution across gender. Slightly more than half the children were at the lower secondary education level, with the remainder at either primary level or upper secondary or higher.

For the parents, 79.8% of fathers were aged between 40 and 54, 10.8% were 55 or older, and 9.4% were between 20 and 39. The mothers' pattern of age distribution differed: although a large proportion (73.0%) fell between 40 and 54 years old, only 3.3% were 55 or older, while 23.7% ranged from 20 to 39 years. More than half the parents had received schooling at only the secondary 3 level or below, with a higher percentage of fathers having reached secondary 4-7

(30.7%) and the tertiary level or above (6.9%) compared with mothers. A great majority of the parents were married or cohabiting at the time of the interview (93.1%). New immigrants from mainland China were mostly female (7.0%) as opposed to male (0.9%). Around 7.2% of participants were dependant on social security, 8.7% had some level of indebtedness, and 16.2% reported they were suffering from a chronic illness at the time of the interview. Table 1 shows the demographic information for these participants. No gender difference in the characteristics has been reported.

[Table 1 about here]

## **Measures**

***Intimate partner violence.*** In the present study, partner violence was defined as acts of physical assault, psychological aggression, or injury perpetrated by a current marital or cohabiting partner, as measured by the revised Conflict Tactics Scale (CTS2), within a specified time frame preceding the interview. In this study, examples of physical assault include slapping, grabbing, pushing, shoving, twisting a partner's arm or hair, throwing something at a partner, kicking, burning or scalding, beating up, punching, choking, hitting a partner with an object, slamming a partner against a wall, or attacking with a knife or gun. Examples of psychological aggression include insulting, shouting or yelling, stomping out of the room or house, saying something to spite at a partner, calling a partner fat or ugly, destroying a partner's belongings,

accusing a partner, threatening to hit or throw something at a partner. Examples of injury include having a sprain, bruise, or small cut, feeling physical pain, passing out, having a broken bone, or having a need to see a doctor because of a fight between parents. Its psychometric characteristics and cross-cultural reliability have been well-documented and widely adopted to measure different types of spousal conflict (Straus, 1990, 2004). The internal consistency reliability of the CTS2 scales is generally high, with an alpha coefficient ranging from .79 to .95 (Straus, Hamby, BoneyMcCoy, & Sugarman, 1996). With respect to criterion validity, an increasing severity of tactics has been shown to correlate with an increasing severity of injury (Coben, Forjuoh, & Gondolf, 1999). The CTS2 has been translated and back translated into Chinese and validated using Hong Kong data with satisfactory reliability (Cronbach's alpha ranging from .88 to .96; Chan, 2004). Child participants who reported being exposed to the aforementioned acts by either one or both of their parents in the preceding year and in their lifetime were coded as having witnessed physical assault, psychological aggression, or injury. In this study, the internal consistency reliability of the child version of CTS2 scales was high, with an alpha coefficient ranging from .76 to .89. Physical assault and injury are combined as a variable when presenting the prevalence rates of IPV and also coded as an independent variable to be investigated in the multiple logistic regression. Injury is a consequence of physical assault. However, it may be possible that a participant responded positive to injury items but negative to

physical assault items. Injury may be caused by physical acts that were not reported by the physical assault subscale of the CTS2. Combining physical assault and injury subscales would be more accurate to reflect physical violence between intimate partners.

***Child maltreatment.*** The Parent-Child Conflict Tactics Scale (CTSPC; Straus & Hamby, 1997; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998; Straus, Hamby, & Warren, 2003) was used to obtain information on Child maltreatment in terms of lifetime and preceding-year prevalence in the questionnaire for the child participants. Participants were asked to respond to five subscales of the CTSPC: physical maltreatment and severe physical maltreatment like slapping, hitting, throwing and knocking and severe physical maltreatment such as beating, grabbing, burning and threatening with weapons (8 items), psychological aggression such as shouting, yelling, cursing and naming (5 items), corporal punishment like pinching and shaking (5 items), non-violent discipline such as time-out, taking away privileges, and explanation (4 items), and neglect like being left at home alone, not being given food and medical care when in need of them (5 items). These subscales were coded as dichotomous variables showing the presence of the violent behaviors against a child. The psychometric characteristics of the instrument, including its reliability and discriminant and construct validity, have been well documented (Straus et al., 1998). In this study, the CTSPC was translated and back translated into Chinese and examined to demonstrate satisfactory reliability for nonviolent discipline ( $\alpha$



= .78), psychological aggression ( $\alpha = .88$ ), corporal punishment ( $\alpha = .87$ ), physical maltreatment and severe physical maltreatment ( $\alpha = .87$ ), and neglect ( $\alpha = .82$ ). Corporal punishment, physical maltreatment and severe physical maltreatment are combined when presenting the prevalence rates of physical violence against a child.

**Socio-demographics.** A demographic questionnaire was used to collect demographic characteristics of the participants and estimate the co-occurrence rate of exposure to IPV and CAN among the children. It included items asking for information about child factors (such as child's age, education level, number of siblings, disability, and whether they were new immigrants to Hong Kong), and parent factors (such as parents' age, education level, marital and working status, income, and whether they had disability, had any debt during the study period (indebtedness), were new immigrants to Hong Kong, or were receiving social security). Some demographic characteristics are included in the analyses like disability and whether the participant is a new immigrant to Hong Kong because they have been shown to be associated with IPV (Brownridge, 2006; Raj & Silverman, 2002)

### **Statistical Analyses**

***Prevalence of IPV and child maltreatment.*** Lifetime and preceding-year prevalence rates of IPV and child maltreatment were computed. Gender differences for these prevalence rates were tested by chi-square tests.

***Co-occurrence of IPV and child maltreatment.*** Rates for children's families to have (a) no IPV or child maltreatment, (b) IPV only, (c) child maltreatment only, and (d) IPV and child maltreatment were calculated. The rates of having IPV among families with child maltreatment and having child maltreatment among families with IPV were also computed for reference.

***Associations between IPV and child maltreatment.*** To examine the associations between IPV and child maltreatment, multiple logistic regression analyses were conducted. The presence of child neglect, corporal punishment, and physical or severe physical maltreatment were dependent variables in the analyses, and four regression models were generated for each dependent variable. All models used IPV as the main predictor. The only difference was the control variables used in the analyses. Model 1 did not include any control variables; model 2 included child factors (child's age, educational attainment, number of siblings, and whether they were new immigrant to Hong Kong) as control variables; model 3 controlled for parent factors (parents' age, marital status, disability, indebtedness, receipt of social security, father's employment status, and whether mother was a new immigrant to Hong Kong); and model 4 were adjusted for child and parent factors. This approach resembled the analyzing method used in a recent study (Chan, Brownridge, Tiwari, Fong, Leung, & Ho, 2010), and was to test whether IPV was a factor having consistent associations with child maltreatment after controlling for various groups of factors. In this study, control factors were grouped as either child-related or parent-

related so that the effect of them on the association between IPV and child maltreatment could be investigated separately.

Multicollinearity was checked among all independent and control variables to see if they were highly correlated in a multiple regression model. The Variance Inflation Factor (VIF) measures how much the variance of a coefficient is increased because of collinearity. In this study, all VIFs were smaller than 2.5 which were lower than the rules of thumb for values of VIF, that is, 5 (O'Brien, 2007). No multicollinearity problem was identified.

For the regression models, an odds ratio (*OR*) greater than 1.00 indicated that the independent variable is associated with an increase in the odds of the dependent variable. The reverse was true if the *OR* was below 1.00. Nagelkerke  $R^2$  and the -2 log likelihood were computed for each model for comparison. The nominal level of significance was taken as 5%. SPSS version 17 was used for the statistical analysis.

## **Results**

Table 2 shows the prevalence of children exposed to IPV as reported by the child participants. Psychological aggression (54.9%, 73.2%) was the most common type, followed by physical assault (14.6%, 26.0%) and injury (6.6%, 13.1%) in terms of both preceding-year and lifetime prevalence, respectively. For the overall prevalence of IPV, fathers showed slightly

higher rates of physical assault and injury caused to a partner, though this was not significant.

No gender differences were found in reporting parents' use of injury or psychological aggression in the preceding year.

[Table 2 about here]

Regarding the prevalence of child maltreatment, the experience of nonviolent discipline was reasonably pervasive among the child participants. As Table 3 shows, most children reported experiencing nonviolent discipline at some point in their lifetime (81.7%) and the preceding year (68.9%). But the high rates of nonviolent discipline did not guarantee the nonuse of violent discipline, involving corporal punishment and physical maltreatment. The children reported physical violence by their parents at a rate of 44.4% and 22.6% in their lifetime and the preceding year, respectively, of which corporal punishment was the most common type, followed by physical maltreatment and severe physical maltreatment. Additionally, 70.9% and 54.6% of children reported psychological aggression by their parents in their lifetime and the preceding year, respectively, while 32.3% and 24.6% experienced child neglect by their parents in the same time frames, respectively. No gender differences appeared in the lifetime and preceding-year prevalence of child maltreatment as reported by the children.

[Table 3 about here]

Table 4 shows the rates of co-occurrence of IPV (physical or injury) and child physical

maltreatment. Among the sample of 1094 children, 58% reported experiencing no violence, 9.3% were exposed to IPV only, and 14.6% experienced child physical maltreatment only. Another 18.1% experienced dual violence in their lifetime, with a lower rate of co-occurrence of IPV and child physical maltreatment in the preceding year (7.3%). To present the figures differently, among those families characterized by IPV, 54.4% and 46.5% were involved in child physical maltreatment over the child's lifetime and in the preceding year, respectively. Similarly, 55.3% (lifetime) and 51.3% (preceding year) of children being physically maltreated by parents were also exposed to IPV.

[Table 4 about here]

Table 5 shows the results of the multiple logistic regression analyses. IPV was consistently a factor associating to all forms of child maltreatment, including neglect ( $aOR = 3.35$ , 95%  $CI [2.38, 4.72]$ ), corporal punishment ( $aOR = 6.12$ ,  $[4.27, 8.75]$ ), and physical maltreatment or severe physical maltreatment ( $aOR = 9.71$ ,  $[6.62, 14.24]$ ). After child factors, parent factors, or both were controlled for, IPV consistently increased the odds of neglect ( $aOR = 2.88$ ,  $[1.84, 4.51]$ ), corporal punishment ( $aOR = 5.41$ ,  $[3.36, 8.72]$ ), and physical maltreatment or severe physical maltreatment ( $aOR = 8.85$ ,  $[5.19, 15.08]$ ).

[Table 5 about here]

## Discussion

According to the findings, 26% and 14.6% of child participants had been exposed to IPV physical assault, while around 44.4% and 22.6% had been subjected to parental corporal punishment or physical maltreatment from a parent in both their lifetime and the year preceding the study, respectively. The findings also show that 18.1% and 7.3% of the child participants had been both exposed to IPV and were victims of physical maltreatment by their parents in both their lifetime and the year preceding the study, respectively. The co-occurrence rate of IPV and child physical maltreatment was also slightly lower than the previously suggested rate range of 24.9%-66%; the current study, however, provides an estimate of this rate as reported by children from a representative sample. Children who had witnessed IPV were also at greater risk of experiencing neglect, corporal punishment, physical maltreatment or severe physical maltreatment after controlling for child and parent factors, confirming previous general findings that IPV is associated with child maltreatment among local or clinical samples (Bourassa, 2007; Salzinger et al., 2002). The significant and high correlation between IPV and child maltreatment revealed in this study is furthermore consistent with studies based on other informants, mainly from battered women (Casanueva et al., 2009; Kerker, Horwitz, Leventhal, Plichta, & Leaf, 2000) or from child protection services (Herrenkohl & Herrenkohl, 2007; Lee et al., 2004).

Several limitations must be noted in interpreting the study's findings. Its cross-sectional

approach is unable to draw directionality between the types of exposure to violence and associated factors. Additionally, all variables were based on self-reports from children and may be susceptible to an underreporting of IPV and child maltreatment due to recall bias. This potential limitation may result in an underestimation of the actual relationship between IPV and child maltreatment. Future research may seek to collect a more complete profile of family aggression that employs longitudinal prospective design. Additionally, physical violence from a parent was the only form of abuse used to evaluate the association between IPV and child maltreatment. Other forms of child abuse such as emotional and sexual abuse, which may also be associated with IPV, might be assessed in future study.

Despite these limitations, this study is the first to confirm the connection between IPV and child maltreatment in a Chinese population. The use of a representative sample enhances the external generalizability of the findings to the rest of the population. Chinese culture values family honor and face saving. Face orientation has been proven to be a risk factor of domestic violence as well as a factor prohibiting disclosure of violence and help seeking behavior from social services (Chan, 2009). Chinese people tend to keep socially undesirable family matters private to minimize the shame brought to the family. This would accumulate more stress and conflicts, and these families may exhibit more forms of violence. This study reveals that IPV and child maltreatment co-exist in Chinese families, and the association between IPV and child

maltreatment is supported. However, the context for the co-occurrence of IPV and child maltreatment may be unique in Chinese culture. Future study may put more emphasis on the model in explaining the association between IPV and child maltreatment in Chinese context.

The study also examined the phenomenon of co-occurrence of family violence by using children as the participants. Child self-reports permit us to better estimate the prevalence and impact of experiencing dual violence than is possible with parent reports. Children's reports of violence in a family are influenced by their perceptions and evaluations, whereas results derived primarily from parent reports may be biased owing to social desirability, fear of arrest of the perpetrators, and various forms of recall and response biases. Thus, child reports of exposure to violence may be better indicators of the true occurrence of family violence.

The present study moreover indicates that a significant proportion of children both witness IPV and experience child abuse in the same family. Such observation and experience of violence within the family is likely to interrupt the normal development of children. Children who are both victim of child abuse and witness of IPV demonstrate more severe and diverse behavioral and emotional problems than those exposed to just one type of violence (Finkelhor et al., 2009; Grych et al., 2000; Shen, 2009). Thus, in light of the prevalence and influence of the experience of dual violence, examining factors associated with this interrelationship between the witnessing of IPV and child maltreatment could be useful for screening and handling multiple



forms of family violence present in the family. Unless the full extent of violence across different types is evaluated, practices focusing on only a single type of violence exposure will be neither efficient nor effective in intervening in the cycle of violence. It is thus essential for child protective service workers, clinicians, researchers, and police officers to be aware of the interconnections among types of violence and the variables that exacerbate those connections if the environment for abused children is to be improved. Intervention by checking for the simultaneous existence of multiple forms of violence within the same nuclear family should therefore be implemented. Finally, children being treated for child abuse should also be screened to see if they are witnessing IPV (Shen, 2005). To go further, child abuse welfare services and services for IPV should screen for all other forms of family violence and collaborate to provide a more effective and integrated intervention and prevention program. Training for assessing effective responses to both IPV and child maltreatment is necessary for both child protective service workers and domestic violence agencies who should also be aware of the interconnections among types of violence. Intervention with the consideration of co-existence of multiple forms of violence within the same nuclear family should therefore be implemented.

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Table 1

*Demographic Characteristics of Respondents*

Characteristics	%			$\chi^2/t$
	Total ( <i>N</i> = 1,093)	Boys ( <i>n</i> = 546)	Girls ( <i>n</i> = 547)	
<b>Child factors</b>				
Age (mean, <i>SD</i> )	14.5 (1.7)	14.6 (1.7)	14.4 (1.7)	0.06*
Educational attainment (children)				0.15
Primary	11.3	9.5	13.2	
Lower secondary	55.5	55.6	55.4	
Upper secondary or above	33.2	34.9	31.5	
No. of siblings				0.09*
0	47.3	50.8	43.7	
1	43.7	41.0	46.4	
2-3	9.1	8.2	9.9	
New arrival from Mainland China	6.6	6.0	7.1	0.46
<b>Parent factors</b>				
Age (father)				0.13
20-39	9.4	8.9	9.9	
40-54	79.8	82.3	77.4	
55 or above	10.8	8.9	12.7	
Educational attainment (father)				0.19
Secondary 3 or below	62.4	62.9	61.9	
Secondary 4 – 7	30.7	28.9	32.5	
Tertiary or above	6.9	8.2	5.6	
Age (mother)				0.58
20-39	23.7	23.3	24.1	
40-54	73.0	72.9	73.2	
55 or above	3.3	3.9	2.7	
Educational attainment (mother)				0.97
Secondary 3 or below	67.0	66.9	67.1	
Secondary 4 – 7	28.0	28.2	27.8	
Tertiary or above	5.0	4.8	5.1	
Marital status of parents				0.15
Separated/divorced	5.4	6.2	4.6	
Widowed	1.5	2.0	0.9	
Married/cohabiting	93.1	91.8	94.5	
New arrival from Mainland China (father)	0.9	0.4	1.3	0.16
New arrival from Mainland China (mother)	7.0	5.9	8.0	0.18
Unemployment (father)	7.8	6.9	8.6	0.33
Unemployment (mother)	3.2	2.7	3.7	0.36
Income (father)				0.95
Without income	10.7	10.5	10.9	
\$4,999 or below	7.8	7.6	8.0	
\$5,000 or above	81.5	81.9	81.1	
Income (mother)				0.75
Without income	47.6	48.0	47.2	
\$4,999 or below	15.2	15.8	14.5	
\$5,000 or above	37.3	36.3	38.3	
Receiving social security (family)	7.2	5.7	8.7	0.09*
Chronic illness or disability (parent)	16.2	16.3	16.0	0.92
Indebtedness (parent)	8.7	9.6	7.7	0.33

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

Table 2

*Lifetime and Preceding-Year Prevalence of Intimate Partner Violence of Parents Witnessed by Children*

Intimate partner violence by parents	Prevalence (%)			<i>p</i> value
	Total ( <i>N</i> = 1,093)	Boys ( <i>n</i> = 546)	Girls ( <i>n</i> = 547)	
Over lifetime				
Physical assault				
By father	21.9	22.4	21.4	0.71
By mother	19.3	18.5	20.1	0.50
By either parent	26.0	25.9	26.0	0.98
Injury				
Caused by father's violence against mother	10.2	9.9	10.6	0.70
Caused by mother's violence against father	10.3	10.7	9.9	0.65
By either parent	13.1	13.1	13.0	0.94
Psychological aggression				
By father	68.7	68.8	68.7	0.98
By mother	68.3	68.3	68.2	0.97
By either parent	73.2	72.6	73.8	0.65
Physical assault /Injury				
By father	23.8	24.0	23.6	0.87
By mother	22.0	21.4	22.5	0.67
By either parent	27.4	27.4	27.5	0.98
During the preceding-year				
Physical assault				
By father	11.6	11.8	11.4	0.81
By mother	10.3	10.1	10.6	0.77
By either parent	14.6	14.6	14.7	0.99
Injury				
Caused by father's violence against mother	5.1	5.3	4.9	0.78
Caused by mother's violence against father	4.9	5.0	4.8	0.86
By either parent	6.6	7.0	6.2	0.59
Psychological aggression				
By father	49.4	49.0	49.8	0.78
By mother	50.1	48.9	51.4	0.41
By either parent	54.9	54.0	55.9	0.54
Physical assault /Injury				
By father	12.8	13.4	12.2	0.58
By mother	11.5	11.3	11.7	0.82
By either parent	15.7	15.9	15.4	0.81

Note. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

Table 3

*Lifetime and Preceding-Year Prevalence of Child Maltreatment*

Child Maltreatment	Prevalence (%)			<i>p</i> value
	Total ( <i>N</i> = 1,093)	Boys ( <i>n</i> = 546)	Girls ( <i>n</i> = 547)	
<b>Over lifetime</b>				
Nonviolent discipline	81.7	81.1	82.2	0.64
Psychological aggression	70.9	69.1	72.7	0.19
Neglect	32.3	31.1	33.4	0.42
Corporal punishment	39.5	40.7	38.3	0.42
Physical maltreatment	26.6	26.7	26.6	0.98
Severe physical maltreatment	8.3	9.3	7.3	0.25
Physical maltreatment /Severe physical maltreatment	27.0	27.0	27.0	0.98
Corporal punishment /Physical maltreatment /Severe physical maltreatment	44.4	45.7	43.1	0.39
<b>During the preceding year</b>				
Nonviolent discipline	68.9	67.6	70.3	0.34
Psychological aggression	54.6	54.1	55.0	0.75
Neglect	24.6	23.9	25.3	0.58
Corporal punishment	18.1	17.8	18.3	0.81
Physical maltreatment	13.6	11.9	15.4	0.09*
Severe physical maltreatment	3.8	3.1	4.4	0.28
Physical maltreatment /Severe physical maltreatment	14.2	12.6	15.8	0.13
Corporal punishment /Physical maltreatment /Severe physical maltreatment	22.6	22.8	22.4	0.88

*Note.* \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.