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Co-Occurrence of Intimate Partner Violence and Child Abuse in Hong Kong Chinese Families

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Abstract

This study examines the prevalence of co-occurrence of intimate partner violence (IPV) and child abuse and neglect (CAN) in a cohort of Chinese parents drawn from a large representative sample in Hong Kong. It also investigates the risk factors for CAN with a special emphasis on the role of IPV. A subsample of 2,363 parents was invited to complete the Conflict Tactics Scale and a demographic questionnaire examining the risk factors for CAN. Results show that among the perpetrators of child maltreatment, 37% and 36%, respectively, admitted they had been perpetrators and victims of IPV over their lifetime. Physical and psychological violence between spouses were the characteristics most significantly associated with child maltreatment. This suggests that intervention for CAN should include an assessment of IPV history. Integrative treatment for children suffering from CAN and interparental violence may be considered in intervention programs to combat CAN and IPV.

Keywords

co-occurrence, child abuse and neglect, partner violence, Chinese

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Studies of the relationships between child abuse and partner violence usually focus on child abuse and neglect (CAN) as a predictor of intimate partner violence (IPV) in adulthood (Bank & Burraston, 2001; Heyman & Slep, 2002). There can be other forms of this relationship, depending on whether CAN and IPV happen within the same nuclear family. The way to describe the coexistence or co-occurrence of these two phenomena is to consider the probability of one type of abuse being present in a family when the other occurs (O'Leary, Smith Slep, & O'Leary, 2000). Research shows that there is a significant overlap between CAN and IPV. Reviews of the rates of co-occurrence of child maltreatment and IPV range from 30% to 60% (Edleson, 1999). Similar results have been found in previous studies, with a median co-occurrence rate of 40%, ranging from a high of 100% to a low of less than 10%, depending on the criteria used to determine the presence of child abuse (Appel & Holden, 1998). However, studies using community samples have found lower rates of somewhere between 5.6% and 19.4% (Casanueva, Jonathan, & Zolotor, 2007). Community samples may differ from clinical samples in terms of numerous variables (such as poverty, unemployment, stress, substance abuse, and other indices of family dysfunction) that can confound the results.

Patterns of Co-Occurrence

Existing studies allow us to make an estimate of the overlap of CAN and IPV. However, little has been known about the interrelationship of different forms of abuse within the family. Co-occurring abuse can take place with different patterns, each of which may be explained by its own mechanisms and interventions. Research studies have shown that the perpetrator of CAN can be a victim of IPV (Casanueva et al., 2007; Coohey, 2004; Margolin, Gordis, Medina, & Oliver, 2003), a perpetrator of IPV (Lutenbacher, 2002; Shipman, Rossman, & West, 1999), or both (Dixon, Hamilton-Giachritsis, Browne, & Ostapuik, 2007). Other research studies have failed to state the identity of the perpetrator clearly (Kohla, Edleson, English, & Barth, 2005; Nelson et al., 2005). Reports in these studies are usually based on self-reports made by female victims to government agencies, the police, and social services organizations. As research evidence has supported that a high proportion of child abuse is perpetrated by fathers (Dixon et al., 2007) and that women's reports of both nonphysical and physical partner abuse are treated as more valid than men's (Edleson & Brygger, 1986), these reports are regarded as a reliable source of information on men's perpetration of violence against their partners and children. Overall, it is apparent that interparental and parent–child aggression may co-occur.

Explanations for the Patterns of Dual Violence

Current models of family violence tend to adopt a multifactorial, ecological, and transactional approach to explain the occurrence of such behavior in spousal and parent–child relationships (O'Keefe, 1995). Research has suggested that families where both IPV and CAN are present may share problems (such as life stressors, neighborhood violence, and parental history of severe punishment) that are similar in nature but greater in magnitude compared to families exhibiting only one of these forms of violence (Shipman et al., 1999). If more than one risk factor is present within the family, the likelihood of abuse and several other forms of victimization will also increase. Children exposed to both IPV and CAN demonstrate a higher degree of developmental difficulties, behavioral problems, and emotional dysregulation (Jaffee, Caspi, Moffitt, Polo-Tomas, & Taylor, 2007; Shen, 2005).

Several family factors are associated with the co-occurrence of IPV and CAN. Poverty is one of the common factors associated with all forms of CAN (physical and sexual abuse, and neglect; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008) and IPV (Chang, Shen, & Takeuchi, 2009). It has also been well documented as a correlate of overlapping forms of domestic violence within the family (Gewirtz & Edleson, 2007; Lee, Kotch, & Cox, 2004). Herrenkohl and Herrenkohl's (2007) review of the Lehigh Longitudinal Study shows that family conflicts (including marital problems, marital conflict, poverty, and social isolation) and other negative aspects of family life, such as unemployment and insufficient income, are associated with all forms of CAN and IPV. In addition to these family-related risk factors, families characterized by the co-occurrence of IPV and CAN share similar perpetrator-related risk factors. Examples include parents' psychological characteristics, mental illness, loneliness, alcohol or drug abuse, unemployment, parenting skills, crime history, and low levels of education (Cunradi, Caetano, & Schafer, 2002; Herrenkohl et al., 2008; Tajima, 2004).

IPV has been identified as a significant risk factor for verbal and physical abuse and physical punishment of children (Casanueva, Martin, & Runyan, 2009; Ross, 1996; Tajima, 2000). Other studies have found that IPV is correlated to all forms of CAN (Berger, 2005; Herrenkohl & Herrenkohl, 2007). Findings from several cross-sectional studies have also supported this relationship but without controlling for potential confounding risk factors (Kerker, Horwitz, Leventhal, Plichta, & Leaf, 2000; Parkinson, Adams, & Emerling, 2001). Existing studies of the co-occurrence of IPV and CAN have been based mainly on participants from battered women's refuges, clinical samples, or small community samples, which greatly reduces their generalizability to the

wider community. The lack of studies using community samples may limit our knowledge of confounding variables of co-occurrence of CAN and IPV. In addition, most previous research has been conducted in the American populations. Only a limited number of Asian studies have been carried out to examine CAN and IPV as well as their associated factors. The present study aims at investigating the rate of co-occurrence of IPV and CAN and examining whether IPV is a risk factor for CAN.

Method

Study Design and Sample

This study used a subsample of the data from a representative population study conducted in Hong Kong in which the prevalence rate of, and risk factors for, IPV as well as CAN were studied. A complete description of the research design and sampling has been documented in a previous article (Chan, Brownridge, Tiwari, Fong, & Leung, 2008). The procedures were approved by the ethics committee of the University of Hong Kong. All respondents provided informed consent prior to their interviews and were informed that they could refuse to answer any of the questions. Confidentiality of the data was guaranteed.

The data employed in this analysis were a subsample of the household survey which was conducted in 2004. A total of 4,347 valid quarters were randomly sampled from the Register of Quarters maintained by the Census and Statistics Department of the Government of Hong Kong using a stratified sample design. Of these 3,049 quarters were successfully enumerated, representing a response rate of 70%. Nonparticipation included both refusals to respond (20%) and failure to contact potential respondents (10%). All family members who met the inclusion criteria during the study period were invited to participate. The inclusion criteria were being a Chinese person aged 16 or above, having given informed consent, being married or cohabiting, and having children. The participants were interviewed face-to-face by research assistants who had been trained to conduct household research interviews. Once respondents were identified as having been abused, they were encouraged to seek help and provided with necessary information for referral. The study resulted in a representative sample with a response rate of 71%.

A total of 2,363 participants, 1,128 of whom were fathers and 1,235 were mothers, successfully participated in the study. Table 1 shows the demographic information of these participants. The mean age of the male participants was 45, which was significantly higher than that of the female participants ($M_F = 41$). About 43.7% had received high school (equivalent to Grade 10 or above in

Table 1. Demographic Characteristics of Respondents

Characteristics	*N*	Total	Father	Mother	χ^2/*t* Test
Age					110.647***
20-39	737	31.2%	21.9%	39.7%	
40-54	1,491	63.2%	69.3%	57.5%	
55 or above	133	5.6%	8.8%	2.8%	
Educational attainment					8.152*
F3 or below	1,330	56.3%	55.3%	57.2%	
F4-F7	790	33.4%	32.5%	34.3%	
Tertiary or above	243	10.3%	12.2%	8.6%	
No. of children living with parents		1.9	1.8	1.9	–0.967
Being newly arrived in Hong Kong	131	5.6%	1.1%	9.8%	83.482***
Unemployment	135	5.7%	8.2%	3.5%	23.912***
Income					421.109***
Without income	688	29.5%	10.8%	46.3%	
US$4,999 or below	222	9.5%	6.9%	11.9%	
US$5,000 or above	1,426	61.0%	82.3%	41.8%	
Receiving social security	178	7.8%	6.7%	8.8%	3.379
Chronic illness	216	9.2%	9.1%	9.2%	0.001
Indebtedness	170	7.4%	7.9%	6.9%	0.897
Alcohol abuse	193	8.2%	11.9%	4.8%	39.646***
Drug abuse	49	2.1%	2.1%	2.0%	0.86*

*$p < .05$. **$p < .01$. ***$p < .001$.

the United States) or tertiary education, with a higher percentage of men having been educated to tertiary level or above. In addition, significantly more men had a higher income than women, although more men than women were unemployed or abusing alcohol or drugs. Nearly all participants were living with their children, with a mean of 1.9 children per household. New immigrants from mainland China were mostly female (9.8%) rather than male (1.1%). About 7.8% of participants were dependant on social security, had some level of indebtedness, and reported they were suffering from chronic illness at the time of interview.

Measures

Dependent Variables

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 measure child maltreatment in terms of lifetime and preceding-year prevalence. The participants were asked to respond to items that measured child maltreatment. These included items concerning nonviolent discipline (4 items), psychological aggression (5), corporal punishment (5), physical maltreatment (8), neglect (5), and weekly discipline (4). The psychometric characteristics of the instrument, including its reliability and discriminant and construct validity, have been well documented (Straus et al., 1998). The CTSPC was translated into Chinese using back-translation method and examined by a group of experts including a psychologist, a sociologist, and several social work scholars. The Chinese version of the CTSPC has been validated and demonstrated to have satisfactory reliabilities for nonviolent discipline ($\alpha = .76$), psychological aggression ($\alpha = .76$), corporal punishment ($\alpha = .79$), physical maltreatment ($\alpha = .76$), neglect ($\alpha = .66$), and weekly discipline ($\alpha = .71$).

Independent Variables

Intimate partner violence. The Revised Conflict Tactics Scale (CTS2) was employed to measure physical violence in terms of lifetime and preceding-year prevalence. The CTS2 includes five aspects of spousal conflict: negotiation, physical assault, psychological aggression, physical injury, and sexual coercion. With its well-documented psychometric characteristics (Straus, 1990) and high cross-cultural reliability (Straus, 2004), it has been widely adopted to measure different types of spousal conflicts. The internal consistency reliability of the CTS2 scales is generally high, with alpha coefficients ranging from .79 to .95 (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). With respect to the criterion validity, an increasing severity of tactics has been shown to correlate with increasing injury severity (Coben, Forjuoh, & Gondolf, 1999). The CTS2 has been translated into Chinese and validated using a data set in Hong Kong (Chan, 2004). In this study, the Chinese translation of the CTS2 demonstrated a satisfactory reliability (α ranged from .88 to .96).

In the present study, partner violence was defined as acts of physical assault, psychological aggression, physical injury, and sexual coercion perpetrated by a current married or cohabiting partner, as measured by the CTS2, within a specified timeframe preceding the interview. This timeframe was confined to the preceding year and the lifetime of the relationship. Respondents who reported any of the aforementioned acts by their partner in the preceding year and in the lifetime of their relationship were coded as having experienced IPV.

Childhood-witnessed parental violence. Childhood-witnessed parental violence was measured by an item asking respondents to recall if they had witnessed their parents' use of physical abuse and injury caused by violence

in childhood. The physical assault and injury scales of the CTS2 were listed for their reference.

In-law conflict. One question was used to measure the frequency of in-law conflict. In-law conflict has been found to be associated with IPV in Chinese families (Chan et al., 2008). Participants were asked at the interview about the number of incidences of conflict with their parents-in-law over the preceding year. The responses included never, once, twice, 3-5 times, 6-10 times, 11-20 times, 20 times or more, and none in the past 12 months but it has happened before then.

Personal and Relationship Profile (PRP). PRP (Straus, Hamby, Boney-McCoy, & Sugarman, 1999) is a self-report measure used in clinical screening and research on family violence. PRP items are theoretically related to the etiology of IPV by measuring individual and relationship factors along 21 subscale items. The PRP scales demonstrated satisfactory reliability and validity. The mean alpha coefficient for the PRP subscales was .74 (Straus et al., 1999). Participants rate their agreement with each item on a scale of 1 (*strongly disagree*) to 4 (*strongly agree*) and item scores were summed to create subscale scores. All the items in the PRP were translated into Chinese suing back-translation. The definitions and the reliability alphas of the PRP subscales selected for this study are shown in Table 2.

Social support. A social support scale from the Family Needs Screener (FNS; Kantor & Straus, 1999), which is a short version of the PRP, was employed to measure social support within the family. Items in the scale included "having only a few friends/family to help with baby/children," "feeling very isolated, having someone who makes me feel confident," "having someone whom I can talk to openly," "having someone whom I can talk to about my relationship problems," "having someone to borrow money from in an emergency," "having someone to take care of my children," "having someone who helps me around the house," "having someone whom I can count on in times of need," and "having insufficient money for my daily needs." The alpha coefficient of the Social Support Scale is .72.

Self-esteem. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) was adopted to measure participants' self-esteem. It consists of 10 items, each using a 4-point Likert-type scale ranging from *strongly agree* to *strongly disagree*. The scores for the 10 items were summed, and the higher the score, the higher the respondent's self-esteem. In this study, the alpha coefficient of the Self-Esteem Scale is .67.

Demographic characteristics. The demographic questions were used to collect the demographic and socioeconomic characteristics of the participants and to estimate their correlations with IPV and CAN. It included items asking for

Table 2. Definitions and Reliability of Selected Subscales of the PRP

PRP Subscales	Items	*N*	Reliability Alpha	Brief Description
Stressful conditions	8	1,854	.71	Stress or hassles experienced in daily living
Dominance	9	2,134	.71	Dominance describes relationships that are hierarchical and in which the person with greater advantage uses that advantage to gain status, privilege, or control over his or her partner
Jealousy	8	2,095	.87	Extreme concern about the possible sexual and social exclusiveness of the current partner
Relationship distress	8	2,072	.84	Areas of dissatisfaction with the relationship, characterized by high conflict and few positive interactions
Negative attribution	4	2,182	.73	Blame/negative intentions attributed to partner of respondent
Anger management	6	2,154	.44	Recognizing signs of anger, self-talk, and behavioral self-soothing
Violence approval	9	2,133	.73	The extent to which use of physical force is acceptable in a variety of interpersonal situations
Depressive symptoms	8	2,170	.73	Disturbances in mood, dysphoric cognitions, and somatic disturbances
Social desirability	13	2,109	.61	The degree to which a respondent will tend to avoid admitting undesirable behavior, such as partner assault and other forms of crime
Substance abuse (including alcohol and drug abuse)	7	1,257	.95	Excessive use of alcohol or other mind-altering drugs

Note: PRP = Personal and Relationship Profile.

the participants' age, education level, work status and income, as well as whether they had chronic illness, were indebted, were new immigrants to Hong Kong, were living with their children, were receiving social security, and were alcoholics or drug abusers.

Statistical Analyses

Descriptive statistics were used to examine the gender differences between lifetime and preceding-year perpetration and victimization in terms of IPV and CAN. The co-occurrence rate was computed and tested. The demographic, psychological, and relationship characteristics of the abusive groups were summarized and compared to the nonabusive groups through the use of crude odds ratios. An odds ratio greater than one indicates that an increase in the independent variable is associated with an increase in the odds of the dependent variable. An odds ratio below one indicates that an increase in the independent variable is associated with a decrease in the odds of the dependent variable. Logistic regression is an appropriate technique for predicting a dichotomous dependent variable from a set of independent variables. Multiple logistic regressions were performed using the demographic, relationship, and perpetrator factors to assess the impact of IPV on CAN. The nominal level of significance was taken as 5%, and SPSS Version 17 was used to carry out the statistical analysis.

Results

Prevalence of IPV

Table 3 shows that psychological aggression was reasonably pervasive in these families. More than half of the respondents reported having been a perpetrator or victim of psychological aggression at some point in their lifetime. Similarly, about 40% reported having been a victim whereas 43% admitted having been a perpetrator of psychological abuse in the year preceding the study. The lifetime prevalence rates of victimization and perpetration for physical assault, injury, or sexual coercion were 15.7% and 16.6%, respectively. For the preceding year, the prevalence rates of victimization and perpetration were 8.6% and 9.9%, respectively. Gender difference was found in the lifetime prevalence of victimization for physical assault, injury, and sexual coercion but not in their corresponding preceding-year figures. More mothers (17.7%) than fathers (13.6%) reported having been abused ($p = .01$). Gender differences were also found in both lifetime

Table 3. Lifetime and Preceding-Year Prevalence of IPV

	N	Prevalence (%)	Father (%)	Mother (%)	χ^2
Lifetime prevalence					
Physical—victimization	245	10.7	10.6	10.8	0.035
Physical—perpetration	273	11.7	11.0	12.3	0.927
Injury—victimization	100	4.3	3.5	5.0	3.205
Injury—perpetration	88	3.9	3.7	4.0	0.157
Psychological—victimization	1,231	54.2	52.7	55.6	1.897
Psychological—perpetration	1,360	58.2	57.3	59.0	0.752
Sexual—victimization	181	8.0	5.2	10.5	21.936***
Sexual—perpetration	189	8.2	8.8	7.6	0.975
Physical/injury/sexual—victimization	355	15.7	13.6	17.7	7.286**
Physical/injury/sexual—perpetration	377	16.6	16.4	16.7	0.041
Preceding-year prevalence					
Physical—victimization	120	5.3	5.4	5.2	0.035
Physical—perpetration	153	6.6	6.1	7.0	0.735
Injury—victimization	43	1.8	1.5	2.1	1.184
Injury—perpetration	43	1.9	1.8	2.0	0.196
Psychological—victimization	913	40.2	39.8	40.5	0.129
Psychological—perpetration	995	42.6	42.8	42.3	0.072
Sexual—victimization	97	4.3	3.1	5.4	7.510**
Sexual—perpetration	102	4.4	4.9	4.0	1.093
Physical/injury/sexual—victimization	194	8.6	7.7	9.4	2.066
Physical/injury/sexual—perpetration	225	9.9	9.7	10.1	0.099

Note: IPV = intimate partner violence.
*$p < .05$. **$p < .01$. ***$p < .001$.

(10.5%; $p = .00$) and preceding-year prevalence of being a victim of sexual coercion (5.4%; $p = .01$).

Prevalence of CAN

Table 4 shows that although the majority of parents were practicing nonviolent discipline, some CAN was taking place. Psychological aggression (68.5%)

Table 4. Lifetime and Preceding-Year Prevalence of Child Abuse

	N	Prevalence (%)	Fathers (%)	Mothers (%)	χ^2
Lifetime prevalence					
Nonviolent discipline	1,903	80.5	79.6	81.4	1.174
Psychological aggression	1,618	68.5	66.8	70.0	2.947
Neglect	490	20.7	18.4	22.8	6.926**
Weekly discipline	532	22.5	19.2	25.5	13.279***
Corporal punishment	1,034	43.8	39.9	47.3	13.096***
Physical maltreatment	237	10.0	9.4	10.6	0.957
Corporal punishment + Physical maltreatment	1,043	44.1	40.2	47.8	13.860***
Preceding-year prevalence					
Nonviolent discipline	1,759	74.4	73.2	75.5	1.667
Psychological aggression	1,445	61.2	58.7	63.4	5.512*
Neglect	425	18.0	16.3	19.5	4.098*
Weekly discipline	532	22.5	19.2	25.5	13.279***
Corporal punishment	774	32.8	30.1	35.2	7.153**
Physical maltreatment	139	5.9	5.4	6.3	0.878
Corporal punishment + Physical maltreatment	780	33.0	30.1	35.6	8.023**

*$p < .05$. **$p < .01$. ***$p < .001$.

was the most common type, followed by physical violence (44.1%), weekly discipline (22.5%), and neglect (20.7%) in terms of lifetime prevalence. The same pattern was found in preceding-year prevalence. With regard to physical violence, corporal punishment was the most common type used by parents both over lifetime and in the preceding year. In addition, there were significant gender differences in the preceding-year prevalence rates of CAN, with more mothers reporting the use of psychological aggression, neglect, weekly discipline, and corporal punishment. The same gender differences were found in the lifetime prevalence rates, except for psychological aggression. Overall, more mothers than fathers committed various forms of abuse, probably because mothers are often the ones who provide guidance in taking care of children within the family.

Co-Occurrence of IPV and Child Physical Maltreatment

When considering the prevalence of both child physical maltreatment and IPV, a majority of parents reported that they had neither perpetrated nor inflicted on

Table 5. Co-Occurrence of IPV (Physical/Injury/Sexual) and Child Physical Maltreatment[AQ: 3]

	No Abuse (%)	IPV Only (%)	Child Abuse Only (%)	Co-Occurrence (%)	% of Child Abuse Among IPV (%)	% of IPV Among Child Abuse (%)
Lifetime prevalence						
Perpetration of IPV and child abuse	77.0	12.8	6.4	3.8	22.8	37.1
Victimization of IPV and perpetration of child abuse	77.8	12.0	6.5	3.7	23.7	36.4
Preceding-year prevalence						
Perpetration of IPV and child abuse	85.6	8.4	4.5	1.5	15.6	24.0
Victimization of IPV and perpetration of child abuse	86.8	7.1	4.5	1.5	17.5	25.0

Note: IPV = intimate partner violence.

their children and partner. This led to a low lifetime co-occurrence rate of around 4% as well as a low preceding-year co-occurrence rate of 1.5%.

Among those families who were characterized by the co-occurrence of IPV and child physical maltreatment, 22.8% and 15.6% of perpetrators who had assaulted their wives had also physically maltreated their children over their lifetime and in the preceding year, respectively. However, a proportion of victims of IPV also reported having physically maltreated their children over lifetime (23.7%) and in the preceding year (17.5%). The same phenomenon can be represented in different ways. A proportion of 37.1% and 24% of child physical maltreatment perpetrators had also abused their partners (physically or sexually, or in ways which caused injury) in their lifetime and in the preceding year, respectively. Conversely, 36.4% (lifetime) and 25% (preceding year) of child abuse perpetrators had been the victims of IPV in the form of physical or sexual abuse, or the infliction of injury.

Factors Associated With Child Abuse and Neglect

Tables 6 and 7 present the results of the univariate logistic regression analyses on the preceding-year prevalence of CAN including neglect, corporal punishment, and physical maltreatment. The results showed that family-related characteristics (such as being newly arrived in Hong Kong, receiving social security, living in stressful conditions, in-law conflict, negative attribution, and low levels of social support) and perpetrator characteristics (such as chronic illness, low self-esteem, depressive symptoms, jealousy, poor anger management, crime history, childhood-witnessed parental violence, violence approval, and low social desirability) significantly increased the odds of all forms of CAN.

Financial-related conditions like having no income and being female were associated with greater odds of neglect and corporal punishment. Characteristics such as relationship distress, dominance, and alcohol abuse also significantly elevated the odds of neglect and physical maltreatment. Only indebtedness (OR = 1.964; 95% CI = 1.383, 2.788) significantly increased the odds of neglect. Having one to two children and a young age of parents were associated with greater odds of corporal punishment. Parents' drug abuse and young age significantly increased the odds of physical maltreatment. Education level does not seem to produce consistent results in its association with neglect and corporal punishment.

Table 8 presents the results of the multivariate logistic regression models assessing the association between different forms of CAN and IPV. IPV posed a significant risk to all forms of CAN (OR = 3.186; 95% CI = 2.374, 4.276), corporal punishment (OR = 3.098; 95% CI = 2.34, 4.102), and physical maltreatment (OR = 3.542; 95% CI = 2.345, 5.349). The regression analyses were conducted by controlling for demographic and financial stress factors, relationship factors, and perpetrator-related characteristics. All results showed that IPV consistently increased the odds of neglect, corporal punishment, and physical maltreatment.

Discussion

The prevalence rates of both the perpetration and victimization of physical violence over lifetime and in the preceding year found in the present study were consistent with the previous research conducted in the Chinese societies (Chan, 2007). Findings showed that parental maltreatment of children is prevalent in Hong Kong. In the present study, mothers were more likely to be the abusers than fathers. This is consistent with previous findings which have

Table 6. Demographic and Financial Characteristics Associated With Child Abuse and Neglect as Reported by Regression Analyses

Characteristics	*N*	Crude OR (95% CI)		
		Neglect	Corporal Punishment	Physical Maltreatment
No. of children living with parents				
0	16	0.923 (0.257, 3.321)	0.885 (0.279, 2.805)	—
1-2	1,967	0.854 (0.647, 1.126)	1.359* (1.064, 1.734)	1.091 (0.677, 1.759)
3 or above	380	1.000	1.000	1.000
Being newly arrived in Hong Kong	131	1.899** (1.278, 2.821)	2.263*** (1.588, 3.224)	1.825* (1.001, 3.326)
Unemployment	135	1.451 (0.961, 2.189)	1.065 (0.738, 1.537)	0.868 (0.398, 1.896)
Income group				
Without income	688	1.359** (1.077, 1.715)	1.262* (1.042, 1.529)	1.079 (0.738, 1.577)
US$4,999 or below	222	1.404 (0.988, 1.995)	0.896 (0.656, 1.223)	0.684 (0.339, 1.381)
US$5,000 or above	1,426	1.000	1.000	1.000
Receiving social security	178	2.354*** (1.684, 3.291)	1.863*** (1.368, 2.536)	3.001*** (1.886, 4.776)
Indebtedness	170	1.964*** (1.383, 2.788)	1.243 (0.9, 1.717)	1.588 (0.907, 2.781)
Stressful conditions	2,340	3.714*** (2.526, 5.459)	2.098*** (1.538, 2.861)	5.166*** (2.946, 9.057)

Note: OR = odds ratio; CI = confidence interval.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 7. Relationship and Perpetrator Characteristics Associated With Child Abuse and Neglect as Reported by Regression Analyses

Characteristics	*N*	Crude OR (95% CI)		
		Neglect	Corporal Punishment	Physical Maltreatment
In-law conflict	103	2.247*** (1.464, 3.446)	1.629* (1.093, 2.429)	4.975*** (2.997, 8.256)
Relationship distress	2,294	1.713*** (1.266, 2.318)	1.122 (0.873, 1.441)	2.564*** (1.621, 4.055)
Dominance	2,293	2.395*** (1.654, 3.468)	1.054 (0.786, 1.413)	3.065*** (1.707, 5.506)
Negative attribution	2,257	1.828*** (1.364, 2.451)	1.937*** (1.516, 2.475)	3.019*** (1.914, 4.761)
Support	2,346	0.528*** (0.374, 0.747)	0.536*** (0.401, 0.715)	0.376*** (0.22, 0.643)
Gender				
Male	1,128	0.804* (0.651, 0.993)	0.79** (0.665, 0.939)	0.848 (0.6, 1.198)
Female	1,235	1.000	1.000	1.000
Age	2,361	0.997 (0.983, 1.011)	0.949*** (0.937, 0.961)	0.953*** (0.929, 0.977)
Educational attainment				
F3 or below	1,330	1.67* (1.119, 2.492)	0.742* (0.558, 0.985)	1.199 (0.643, 2.238)
F4-F7	790	1.384 (0.909, 2.108)	0.843 (0.625, 1.135)	1.273 (0.666, 2.434)
Tertiary or above	243	1.000	1.000	1.000
Alcohol abuse	193	1.624** (1.153, 2.287)	1.214 (0.894, 1.649)	2.989*** (1.908, 4.682)
Drug abuse	49	1.493 (0.772, 2.888)	1.197 (0.665, 2.153)	2.755* (1.214, 6.25)
Chronic illness	2,145	2.301*** (1.69, 3.134)	1.345* (1.008, 1.794)	2.084** (1.301, 3.339)
Self-esteem	2,344	0.428*** (0.281, 0.652)	0.673* (0.479, 0.945)	0.331** (0.168, 0.652)
Depressive symptoms	2,347	1.948*** (1.387, 2.736)	1.46** (1.102, 1.935)	2.365** (1.386, 4.034)
Jealousy	2,282	1.62*** (1.266, 2.073)	1.758*** (1.432, 2.159)	2.801*** (1.899, 4.13)
Anger management	2,346	0.498*** (0.366, 0.677)	0.614*** (0.476, 0.792)	0.24*** (0.149, 0.387)
Crime history	175	3.259*** (2.356, 4.509)	2.271*** (1.666, 3.095)	5.01*** (3.293, 7.621)
Childhood witnessed parental violence	133	3.071*** (2.128, 4.433)	1.988*** (1.398, 2.826)	2.91*** (1.731, 4.893)
Violence approval	2,343	1.746*** (1.269, 2.401)	1.821*** (1.406, 2.36)	5.472*** (3.085, 9.706)
Social desirability	2,341	0.631* (0.402, 0.99)	0.66* (0.456, 0.954)	0.214*** (0.102, 0.451)

Note: OR = odds ratio; CI = confidence interval.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 8. IPV and Its Association With Child Abuse and Neglect as Reported by Regression Analyses

	OR (95% CI)		
	Neglect	Corporal Punishment	Physical Maltreatment
Model 1: IPV	OR = 3.186*** (2.374, 4.276)	OR = 3.098*** (2.34, 4.102)	OR = 3.542*** (2.345, 5.349)
Model 2: IPV—Controlled for demographic and financial stress factors (e.g., no. of children living with parents, being newly arrived in Hong Kong, unemployment, income, receiving social security, indebtedness, stressful conditions)	aOR = 2.761*** (2.006, 3.801)	aOR = 2.883*** (2.138, 3.887)	aOR = 2.876*** (1.833, 4.515)
Model 3: IPV—Controlled for relationship factors (e.g., in-law conflict, relationship distress, dominance, negative attribution, support)	aOR = 2.725*** (1.994, 3.723)	aOR = 2.957*** (2.199, 3.977)	aOR = 2.518*** (1.607, 3.947)
Model 4: IPV—Controlled for perpetrator-related characteristics (e.g., gender, age, educational attainment, alcohol abuse, drug abuse, chronic illness, self-esteem, depressive symptoms, jealousy, anger management, crime history, childhood witnessed parental violence, violence approval, social desirability)	aOR = 2.479*** (1.791, 3.43)	aOR = 2.549*** (1.876, 3.463)	aOR = 1.721* (1.065, 2.779)

Note: OR = odds ratio; CI = confidence interval; IPV = intimate partner violence.

revealed a greater number of women involved in the cases of physical abuse and neglect (Chaffin, Kelleher, & Hollenberg, 1996) but contrasts with Dixon and affiliates' (2007) results showing a high proportion of

abuse being perpetrated by fathers. Cultural differences in parents' involvement in discipline and the use of corporal punishment may be a possible explanation for this discrepancy.

The rates of co-occurrence of IPV and CAN in the present study are comparable to those in previous studies (Casanueva et al., 2007). About one third of child physical maltreatment perpetrators were also involved in IPV. The findings provide supportive evidence for the claim that IPV is the strongest correlate with CAN after controlling for covariates (Berger, 2005; Kerker et al., 2000; Parkinson et al., 2001).

The present study is among the first to support an association between CAN and IPV in the Chinese population. Findings from this exploratory study has supported our hypothesis that IPV is a risk factor for CAN; however, the cross-sectional data used in this study do not permit us to provide insights into the mechanism by which these variables are linked. Without the use of longitudinal prospective design, we can neither conclude that IPV or the covariates can lead to the occurrence of CAN nor conclude the reverse. In addition, all variables were based on self-reports from parents and therefore may be susceptible to an underreporting of CAN. This potential limitation may result in an underestimation of the actual relationship between CAN and its risk factors. Future research may seek to collect a more complete profile of family aggression which includes reports from the children involved.

Despite these limitations, this study has strengths that are worth noting. The sample used is population-based and representative of the Hong Kong Chinese. Results may be more easily generalized than those of previous studies whose samples have been derived primarily from shelter users or social services department reports, of which the base rates of violence may be different from those in general public. The results of this study also 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 CAN has important implications for clinical practice and intervention. Given the considerable overlap between the two types of violence, interventions catering for only one may not be sufficient. The efforts of child welfare services in treating CAN could be sabotaged where IPV is also happening within the same family. Moreover, 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.

In conclusion, an integrative intervention is called for to end CAN and IPV. Treatment for children suffering from CAN as well as witnessing interparental violence should be considered. Children who experienced both child

abuse and IPV are likely to report more severe behavioral and emotional problems than those exposed to just one type of violence (Finkelhor, Ormrod, & Turner, 2009; Shen, 2005). Training for assessing effective responses to both IPV and CAN 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 coexistence of multiple forms of violence within the same nuclear family should therefore be implemented.

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