Child physical abuse and the related PTSD in Taiwan: The role of Chinese cultural background and victims’ subjective reactions

Chia-Ying Chou, Yi-Jen Su, Ho-Mao Wu, Sue-Huei Chen
Department of Psychology, National Taiwan University, Taipei, Taiwan

ABSTRACT

Objective: This study aimed to investigate child physical abuse (CPA) while taking into account the more rigorous definitions of CPA in the Chinese societies. The prevalence of CPA and CPA-related PTSD were estimated, together with the examination of peri-traumatic subjective reactions and their impacts on PTSD.

Methods: In a Taiwanese sample of 1966 4th to 8th graders, the Chinese version of UCLA PTSD Reaction Index for DSM-IV (Steinberg, Brymer, Decker, & Pynoos, 2004) was used to investigate the lifetime exposure to CPA. A sub-sample of 236 traumatized CPA victims was examined with respect to related PTSD symptoms.

Results: Thirty-four percent of the children had been exposed to CPA. The estimated current prevalence of full and partial PTSD was 13.6% and 16.9%, respectively.

Conclusions: The current CPA prevalence was found to be higher than the Western countries, but lower than the previous findings in other East Asian societies. The full PTSD prevalence was close to the findings in the Western countries, whereas sub-clinical PTSD was less observed in Taiwan. Peri-traumatic subjective reactions, that is, Criterion A2 and perceived threat, were shown to be major predictors of PTSD symptom severity. The role of attitudes of child discipline in the Chinese societies in the prevalence of CPA and CPA-related PTSD is discussed.

Practice implications: By providing explicit epidemiological information of CPA and CPA-related PTSD in Taiwan, the current study extends our understanding of CPA and CPA-related PTSD more broadly from Western countries to the Eastern societies. By separately investigating CPA relating to different perpetrators, cross-study comparison is enhanced. In the current study, the significance of considering cultural background in defining CPA and examining CPA-related PTSD was pointed out. Meanwhile, the role of victims’ subjective reactions in the psychopathology of PTSD is highlighted. The findings and discussions could contribute for generating a more sophisticated clinical practice, especially with Asian or Chinese cases.

© 2011 Elsevier Ltd. All rights reserved.

Introduction

Child physical abuse (CPA) is one of the most prevalent of traumatic experiences among children (Stith et al., 2009; Swenson & Spratt, 1999). In Europe and the US, the lifetime prevalence of CPA ranged from 3.6% to 15.8% (e.g., Cawson, William, Brooker, & Kelly, 2000; Elklit, 2002; Hetzel & McCanne, 2005; Schaaf & McCanne, 1998). In East and South Asian
societies, the prevalence of CPA proved much higher. The lifetime prevalence among Indian, Japanese, Singaporean, and Asian American populations was between 33.3% and 65.0% (e.g., Back et al., 2003; Lau, Takeuchi, & Alegría, 2006; Marker, Shah, & Agha, 2005; Segal, 1995; Yamamoto et al., 1999). Regarding Chinese societies, in China and Hong Kong, 1-year prevalence between 52.6% and 70.6% was found, which is notably higher than the lifetime prevalence in most other countries (Kim et al., 2000; Tang, 1998, 2006). As for Taiwan, the lifetime prevalence among fifth and sixth graders was reported to be 40.4% (Shen, 2005), closer to other East and South Asian countries. As can be seen, the prevalence rates ranged widely. One main reason for this diversity may lie in the lack of consensuses for the definition of CPA and its perpetrators. The other reason, relating to the great discrepancy among different countries, may be the failure to define CPA with careful consideration paid to cultural contexts.

**Debates on the definition of CPA**

The major problem concerning CPA-related studies was the diversity of operational definitions. Previous studies had investigated CPA via use of different definitions. Some were general descriptions, such as “physical abuse;” others were more specific acts of violence, such as “slapping” (Miller-Perrin, Perrin, & Kocur, 2009). Beyond the diversity of terminology, heated debate raged on the issue of whether CPA should be restricted only to actions resulting from observable harm, or also include mistreatments that endangered, but had yet to cause injuries to victims (Cawson et al., 2000). It was found that previous researchers mainly defined CPA by the occurrence of violent actions, such as when someone was slapped, hit, and punched (e.g., Cawson et al., 2000; Ellkit, 2002; Giaconia et al., 1995; Marker et al., 2005; Schaaf & McCanne, 1998; Segal, 1995; Shen, 2005; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998; Yamamoto et al., 1999). Very few authors had considered the consequential physical injuries resulting from mistreatment when defining CPA. Such negligence to take bodily injury into account fails to exclude many milder cases and thus results in CPA prevalence inflation, especially in societies where physical punishment is quite common (Kwok & Tam, 2005; O’Brian & Lau, 1995).

**Defining CPA under cultural contexts**

According to the aforementioned discussion, it is suggested that CPA should be defined with respect to cultural differences. The behaviors depicted in CPA definitions of Western studies may, in fact, not be considered child abuse in everyday settings of non-Western societies. For instance, Chan, Chun, and Chung (2008) found that only 65.8% and 37.2% of adult respondents in Hong Kong perceived battering and slapping, respectively, as child abuse. As the present study aimed to investigate CPA-related issues in Taiwan, Taiwanese cultural context should be taken into account to better grasp the entire picture of CPA under real-life circumstances.

To investigate CPA issues in Chinese societies, first distinguishing corporal punishment from physical maltreatment is crucial (Lee, Li, & So, 2006; Tang, 2006). According to Straus et al. (1998), corporal punishment refers to the infliction of pain on children for the purpose of discipline or behavioral control; physical maltreatment, on the other hand, is the use of physical violence to inflict not only pain but also serious injury on children. This differentiation is quite consistent with public perception toward corporal punishment in Chinese societies. In line with the above viewpoint, the present study distinguished CPA from corporal punishment by way of clear behavioral definitions. Studies in Hong Kong and China found that whether or not behavioral discipline was perceived as abusive was determined mainly by the intent of the perpetrator and the severity of the consequence to the child (Lau, Liu, Yu, & Wong, 1999; Qiao, 2009). Corporal punishment given by caregivers for “good intention,” and leading to minor wounds was regarded as excessive child discipline, whereas punishment causing severe injuries would be labeled as abuse (Kwok & Tam, 2005; O’Brian & Lau, 1995). Therefore, we defined CPA as physical violence resulting in severe injury to children.

To specifically determine the degree of injuries severe enough to be recognized as CPA, the definition of traumatic events in the Diagnostic and Statistical Manual of Mental Disorder (DSM) was consulted. In the PTSD section of DSM-III (American Psychiatric Association, 1980), trauma was defined as “a recognizable stressor that would evoke significant symptoms of distress in almost everyone... and is generally outside the range of usual human experience.” To integrate the concept of trauma into the current study, it was essential to reconsider the meaning of “usual human experience” under Chinese contexts. In Chinese societies, despite high tolerance toward physical punishment to children, severe injuries are by no means acceptable (Kwok & Tam, 2005). In Taiwan, strict child discipline accompanied by violent acts is not uncommon, but in most cases it leads only to mild red and swollen skin without consequential injuries. On the other hand, serious injuries in need of medical attention are relatively unusual and commonly perceived as abusive—that is, they can be seen as “outside the range of usual experiences” in Taiwan. As a result, in the current study, the presence of CPA could be identified when an individual below the age of 18 has experienced violent treatment resulting in “bruise, burn, wound, or broken bones,” since these injuries are recognizable stressors outside the normal range of experiences in Taiwanese society.

**Defining CPA with respect to the perpetrator**

The other debate dealing with the definition of CPA is that there exists a variety of perpetrator types. It has been argued that whether the perpetrators of CPA should be solely limited to parent(s) and parent-surrogate(s), or include
other perpetrators, such as siblings, relatives, teachers, and peers (Cawson et al., 2000). Current governmental studies mostly restrict surveys of CPA to parental perpetrators (e.g., Department of Statistics, Ministry of Interior, Taiwan, 2007; Horn, 2001; Wang & Daro, 1998). In contrast, community studies have covered a relatively broad range of perpetrators, including parental figures (e.g., Miller-Perrin et al., 2009; Tang, 2006) and anyone 5 years older than the victim (e.g., Hetzel & McCanne, 2005; Schaaf & McCanne, 1998). Noteworthy, here, is that, non-parental perpetration, such as violence from peers, siblings, and school teachers, has increasingly drawn the attention of community studies over the last decade (e.g., Balding, 2004; Cawson et al., 2000; Kim et al., 2000; Kurst-Swanger & Petcosky, 2003; Lin, 1992; Pritchard, 2004; Zhang et al., 2009). However, due to the great diversity among perpetrators that have been investigated, it is difficult to reach a consistent interpretation of the effect of perpetrators across different studies. Although a few studies have examined both parental and non-parental physical abuse in the same sample, they have failed to separate the various perpetrators, but investigated them in a collective fashion (e.g., Giaconia et al., 1995; Schaaf & McCanne, 1998). Therefore, the information concerning each perpetrator type has remained unclear. As a result, a multi-categorical design, one that respectively investigates the prevalence and influence of each different CPA perpetrator type, is of great importance.

Investigating CPA-related PTSD

CPA is important not only because its prevalent nature, but also because it highly correlates with the development of many psychological problems (Paul, Gray, Elhai, Massad, & Stamm, 2006). Posttraumatic stress disorder (PTSD) is one example among many major mental aftermaths of CPA (Hetzel & McCanne, 2005; Kilpatrick et al., 2003; Margolin & Vickerman, 2007; Rosenberg, 2001; Swenson & Spratt, 1999). Despite its negative impact, epidemiological studies of CPA-related PTSD are scarce in East Asian countries, especially among Chinese populations. Even in Western societies, PTSD studies concerning CPA are limited and have often aroused controversy on several issues. For example, many prevalence studies of PTSD made no attempt to distinguish CPA from other forms of child maltreatment, such as child sexual abuse, child neglect, and emotional abuse (e.g., Hillary & Schare, 1993). Such a mixture might hinder our understanding toward PTSD resulting from different forms of child maltreatment.

Moreover, in reference to the diagnosis of PTSD, there have been growing debates on the measurement of Criterion A for PTSD in DSM-IV (American Psychiatric Association, 1994) among epidemiological studies (Rasmussen, Rosenfeld, Reeves, & Keller, 2007). Most CPA-related PTSD studies have not taken into account participants’ subjective reactions toward traumatic events. To be precise, they have neglected to examine whether survivors have perceived events with “a threat of serious injury” or whether they had suffered from “intense fear, helplessness, and horror” as specified in Criteria A1 and A2, respectively. Subjective distress was often presumed to be inevitable following traumatic experiences. However, this presumption may not always be true. Such negligence may, firstly, hinder our realization of victims’ subjective reactions to CPA and, secondly, interfere with further examination of its impacts on PTSD development. Moreover, it may also result in an overestimation of PTSD prevalence since Criterion A was commonly assumed for all traumatic events (Breslau & Kessler, 2001; Brunet et al., 2001; Rasmussen et al., 2007). Considering these limitations, we argued that further investigations for and clarification on CPA-related PTSD were necessary.

The present study

In order to provide the latest and most comprehensive epidemiological data concerning CPA and related PTSD in Taiwan, the goal of the current study was twofold: to conceptually include a culturally appropriate definition of CPA and to methodologically indicate CPA and PTSD with more precise measures. First, to estimate CPA prevalence, it is crucial to consider the nature and behavioral characteristics of physical abuse under each cultural context. In Taiwanese society, influenced greatly by Chinese culture, it is of great importance to include definitive criteria to help distinguish child discipline from “real” abusive violence. Therefore, by applying an observable and objective criterion, the current study has recognized the presence of CPA when an individual younger than the age of 18 had experienced violent treatment resulting in a bruise, burn, wound, or broken bones by any other person(s). That is, we exclude cases concerning mild injury without the intent of deliberate harm, which is conceptually distinct from physical abuse. Second, we aimed to provide more precise measure in examining CPA as well as PTSD.

Different from previous studies that mainly or exclusively focused on parental offenders, various types of perpetrators, such as school teachers, same-age peers, and strangers, were taken into consideration. Moreover, to provide more accurate information regarding CPA-related PTSD, in contrast with previous studies, the current study has been designed to fully examine PTSD Criterion A. To be specific, we targeted children who had experienced trauma involving serious injury (as specified in Criterion A1). Moreover, we investigated these participants’ perceived threat of life (also specified in Criterion A1) as well as emotional distress (as specified in Criterion A2) during CPA. By this examination, we intended to provide PTSD prevalence information with consideration to Criteria A1 and A2. The predictive power of peritraumatic subjective reactions, perceived threat, and Criterion A2 distress on PTSD symptom severity was also examined.
Methods

Participants

The original data in this survey were collected from 2,235 students between 4th and 8th grades. Two elementary and 2 junior high schools in the greater Taipei area were selected by convenience sampling method. All classes of the 4th, 5th, and 6th grades in the selected elementary schools and a majority of classes of the 7th and 8th grades in the junior high schools had participated in the study. Participants who did not follow the instruction or omitted more than 5 questions assessing PTSD symptoms (12.0% of the original sample) were excluded. Age and gender distribution of the sample remained statistically equivalent. The final sample consisted of 1,966 participants for the examination of the CPA prevalence. Gender distribution was quite even, including 50.7% male and 49.3% female students. The average age was 12.2 years ($SD = 1.4$), with a range of 9–15 years old. Among them, 67.6% were between 4th and 6th grades and the remaining 32.4% were 7th and 8th graders.

In examining CPA-related PTSD, we further restricted the subsequent analyses to a group of traumatized CPA victims, who considered the abusive experience as the most stressful event in life. This sub-sample was composed of 236 participants (12% of the total sample), including 58.1% male and 41.9% female students. Among them, 61.4% were between 4th and 6th grades, while the remaining 38.6% were 7th and 8th graders.

Procedure

First, the authors had provided a clear explanation regarding the research aims as well as methodology to obtain permission from the school principals and teachers of the participating classes beforehand. On the day of survey, the informed consent was received from all participating students and their teachers before the questionnaire was distributed. The whole process was administered in a classroom setting with the presence of the class teachers. The procedures were approved by the Ethical Review Board held by the Department of Psychology in National Taiwan University.

Measures

The questions used to investigate CPA and CPA-related PTSD in this study were mainly adapted from the Chinese version of UCLA PTSD Reaction Index for DSM-IV (C-UCLA PTSD-RI; Chen, Lin, Tseng, & Wu, 2002; Pynoos et al., 1998). The first section of the UCLA PTSD-RI was adopted with some revision to measure the occurrence of CPA. The original data in this survey were collected from 2,235 students between 4th and 8th grades. Two elementary and 2 junior high schools in the greater Taipei area were selected by convenience sampling method. All classes of the 4th, 5th, and 6th grades in the selected elementary schools and a majority of classes of the 7th and 8th grades in the junior high schools had participated in the study. Participants who did not follow the instruction or omitted more than 5 questions assessing PTSD symptoms (12.0% of the original sample) were excluded. Age and gender distribution of the sample remained statistically equivalent. The final sample consisted of 1,966 participants for the examination of the CPA prevalence. Gender distribution was quite even, including 50.7% male and 49.3% female students. The average age was 12.2 years ($SD = 1.4$), with a range of 9–15 years old. Among them, 67.6% were between 4th and 6th grades and the remaining 32.4% were 7th and 8th graders.

In examining CPA-related PTSD, we further restricted the subsequent analyses to a group of traumatized CPA victims, who considered the abusive experience as the most stressful event in life. This sub-sample was composed of 236 participants (12% of the total sample), including 58.1% male and 41.9% female students. Among them, 61.4% were between 4th and 6th grades, while the remaining 38.6% were 7th and 8th graders.

First, the authors had provided a clear explanation regarding the research aims as well as methodology to obtain permission from the school principals and teachers of the participating classes beforehand. On the day of survey, the informed consent was received from all participating students and their teachers before the questionnaire was distributed. The whole process was administered in a classroom setting with the presence of the class teachers. The procedures were approved by the Ethical Review Board held by the Department of Psychology in National Taiwan University.

The Perceived threat in Criterion A1 was indicated by two yes-or-no questions in the second section of UCLA PTSD-RI, inquiring whether one was scared that he/she would die or be hurt badly. The occurrence of perceived threat was indicated by at least one positive answer to the questions, whereas the level of threat perceived by the participant was indicated by the summed score of these questions.

Criterion A2. The Criterion A2 distress was measured by six yes-or-no questions in the second section of UCLA PTSD-RI, inquiring whether one experienced peritraumatic distress, including intense fear, helplessness, and horror. The varying levels of Criterion A2 distress were indicated by the summed score of these questions, whereas PTSD Criterion A2 was satisfied when at least one positive answer was given to these questions.

PTSD symptom criteria. Both symptom severity and diagnosis of PTSD were measured by questions in the third section of UCLA PTSD-RI, based on PTSD criteria of DSM-IV. Questions for intrusion, avoidance, and arousal were scored on a 5-
Table 1
Gender difference of CPA by different perpetrators.

<table>
<thead>
<tr>
<th>Perpetrators</th>
<th>Total (N=1,966) (%)</th>
<th>Males (n=996) (%)</th>
<th>Females (n=970) (%)</th>
<th>χ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>22.0</td>
<td>23.5</td>
<td>20.6</td>
<td>2.45</td>
</tr>
<tr>
<td>Peers</td>
<td>10.6</td>
<td>13.9</td>
<td>7.1</td>
<td>24.01***</td>
</tr>
<tr>
<td>Adults*</td>
<td>7.7</td>
<td>9.0</td>
<td>6.4</td>
<td>4.54*</td>
</tr>
<tr>
<td>Strangers</td>
<td>1.6</td>
<td>2.3</td>
<td>0.8</td>
<td>7.01**</td>
</tr>
</tbody>
</table>

* Non-parent adults.
* p < .05.
** p < .01.
*** p < .001.

point Likert scale (0 = never, 1 = seldom, 2 = sometimes, 3 = much of the time, and 4 = most of the time). The severity of PTSD symptoms was indicated by a summed score, with a higher score indicating a severer level in the past month. In accord with the PTSD section of DSM-IV-TR (as seen in Appendix A), the diagnosis of PTSD was made when at least two items in intrusion (Criterion B), three items in avoidance (Criterion C), and one item in arousal (Criterion D) were present. An item was regarded as present when the victim experienced the symptom much or most of the time (endorsement of 3 or 4).

Analytic strategies

First of all, the total analytic sample (N=1,996) was used to estimate the lifetime prevalence of CPA. Chi-square analyses were performed to determine whether the occurrence of CPA varied with the participant’s age (in terms of school years) and gender. Descriptive information regarding the event-related and victim-related factors was reported.

Second, we focused the following analyses on the sub-sample of traumatized CPA victims (n=236) to examine the percentages of victims experienced perceived threat of life/injury and Criterion A2 distress. Since we suggested that Criterion A2 distress may not necessarily emerge after the occurrence of CPA, the percentage of participants experiencing CPA without Criterion A2 was calculated.

Third, the prevalence of full PTSD as well as sub-clinical PTSD was estimated among the CPA sub-sample. Diagnosis was made according to the PTSD section in DSM-IV-TR. A full PTSD was diagnosed when Criteria A1, A2, B, C, and D were all fulfilled. When all other criteria were met except Criterion C or D, a sub-clinical PTSD was diagnosed. Since the participants in the study were victims who suffered from serious injuries, they therefore automatically met Criterion A1.

Finally, a hierarchical linear regression was performed to examine the predictors of PTSD symptom severity. In the first step, a regression model including the control variables, gender, age, CPA frequency, and time elapsed was constructed. In the second step, three independent dummy variables of perpetrators were added to test the effects of different perpetrators on PTSD. Strangers as perpetrators were excluded from the analysis due to the small percentages of response. In the third step, subjective reactions of perceived threat and Criterion A2 distress, the central variables of the study, were introduced to the model. The explained variance increased in latter steps was examined.

Results

Prevalence of CPA

Across different perpetrators, the overall lifetime prevalence of CPA was found to be 34.0% among the total sample. Significant difference was not found between students in the elementary and secondary schools [33.5% vs. 35.0%, χ² (1, 1,965) = .45, p = .50]. Boys appeared to be more exposed to CPA than girls by 8% [38.1% vs. 29.8%, χ² (1, 1,965) = 14.94, p < .001]. To examine the CPA prevalence by different perpetrators, three quarters of children exposed to CPA were abused by a single type of perpetrator (75.9%, excluding missing values); 16.7% and 7.4% had been abused by 2 or more than 2 types of perpetrators. As shown in Table 1, the most common perpetrator of was parental figures, followed by peers, non-parent adults, and strangers. Higher percentages of boys than girls had experienced CPA conducted by peers, non-parent adults, and strangers. However, concerning the parental CPA, gender difference was not significant. With respect to CPA frequency, a mean score of 2.95 (SD = 2.02) on the 6-point scale suggested that an abused child on average may have been violently assaulted for 3 times so far in life, although the average frequency was likely to be underestimated since CPA frequency above 5 times was all indicated by the value of 6. It was noted that 1-time abuse was most observed (35.9%), followed by a frequent abuse of more than 5 times (25.3%), suggesting that a fourth of abused children may have been exposed to such physical violence on a regular basis.

Prevalence of peri-traumatic subjective reactions and PTSD

The sub-sample of traumatized CPA victims (n=236) was focused to investigate the prevalence of PTSD. Since all participants in this study had been seriously injured according to our definition, they were assumed to fulfill Criterion A1 spontaneously. Among them, 66.5% perceived the abuse as a threat to life or injury, whereas 88.6% experienced Criterion A2
Table 2
Gender effects on CPA-related PTSD.

<table>
<thead>
<tr>
<th>PTSD prevalence (%)</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
<th>χ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full PTSD</td>
<td>13.6</td>
<td>15.3</td>
<td>11.1</td>
<td>0.87</td>
</tr>
<tr>
<td>Sub-clinical PTSD</td>
<td>16.9</td>
<td>17.5</td>
<td>16.2</td>
<td>0.08</td>
</tr>
<tr>
<td>Full + sub-clinical PTSD</td>
<td>30.5</td>
<td>32.8</td>
<td>27.3</td>
<td>0.84</td>
</tr>
</tbody>
</table>

distress during the event. A slightly higher percentage of girls perceived CPA with a threat of life/injury than boys [72.7% vs. 62.0%, χ² (1, 235) = 2.95, p < .10]. However, gender difference was not found in Criterion A2 satisfaction [89.9% for girls vs. 87.6% for boys, χ² (1, 235) = .30, p = .58]. Along with Criterion A, Criteria B, C, and D together determine the diagnosis of PTSD. As seen in Table 2, 13.6% of the victims suffered from full PTSD, whereas 16.9% fulfilled a diagnosis of sub-clinical PTSD of Criteria A, B, C or A, B, D. Gender difference was not found in both full and sub-clinical PTSD.

Predictors of PTSD symptom severity

Finally, the hierarchical regression provided inclusive analysis about risk factors attributing to the development of PTSD symptoms. As seen in Table 3, the model in Step 1 showed that gender and the frequency of CPA were important predictors of PTSD severity before other explanatory variables were introduced, and the effects of age and elapsed time were only marginally significant. The four control variables together explained 10.4% of total variance in PTSD severity. In Step 2, since none of the perpetrators (i.e., parents, non-parent adults, and peers) was able to explain PTSD, the model did not improve significantly [ΔR² = .02, F(3, 228) = 1.43, p = .24]. The results suggested that it is more about the frequency of CPA rather than the type of perpetrator that determines the severity of PTSD the victim experiences. In the last step, the model indicated the significance of victims’ subjective reactions. The level of Criterion A2 distress and the perceived threat of life/injury both had positive effects on the severity of PTSD symptoms. In addition, it was noted that the effect of gender was no longer significant after adding these two factors. By introducing the Criterion A2 distress and the perceived threat, the model showed significant improvement than the previous step [ΔR² = .20, F(2, 226) = 33.39, p < .001], with the explained variance increased to 32% accordingly. Descriptive statistics of all variables in the regression model can be found in Table 4.

Table 3
Hierarchical regression models predicting the severity of PTSD symptoms (n = 236).

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE b</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>27.08***</td>
<td>7.95</td>
<td>.14</td>
</tr>
<tr>
<td>Gender</td>
<td>3.67**</td>
<td>1.74</td>
<td>.13</td>
</tr>
<tr>
<td>Age</td>
<td>−1.09†</td>
<td>.64</td>
<td>−.10</td>
</tr>
<tr>
<td>CPA frequency</td>
<td>1.90**</td>
<td>.40</td>
<td>.25</td>
</tr>
<tr>
<td>Time elapsed (in years)</td>
<td>−0.06†</td>
<td>.37</td>
<td>−.01</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>24.71**</td>
<td>8.20</td>
<td>.13</td>
</tr>
<tr>
<td>Gender</td>
<td>3.40†</td>
<td>1.77</td>
<td>.06</td>
</tr>
<tr>
<td>Age</td>
<td>−1.02†</td>
<td>.64</td>
<td>−.01</td>
</tr>
<tr>
<td>CPA frequency</td>
<td>1.58***</td>
<td>.44</td>
<td>.19</td>
</tr>
<tr>
<td>Time elapsed (in years)</td>
<td>−0.14†</td>
<td>.38</td>
<td>−.03</td>
</tr>
<tr>
<td>Abused by parent</td>
<td>2.67</td>
<td>.20</td>
<td>.09</td>
</tr>
<tr>
<td>Abused by non-parent adult</td>
<td>3.65†</td>
<td>2.05</td>
<td>.12</td>
</tr>
<tr>
<td>Abused by peer</td>
<td>0.23</td>
<td>.21</td>
<td>.01</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.84</td>
<td>7.70</td>
<td>.06</td>
</tr>
<tr>
<td>Gender</td>
<td>1.58</td>
<td>1.58</td>
<td>.06</td>
</tr>
<tr>
<td>Age</td>
<td>−0.05</td>
<td>0.58</td>
<td>−.01</td>
</tr>
<tr>
<td>CPA frequency</td>
<td>1.42†</td>
<td>0.39</td>
<td>.23</td>
</tr>
<tr>
<td>Time elapsed (in years)</td>
<td>0.06</td>
<td>0.34</td>
<td>.01</td>
</tr>
<tr>
<td>Abused by parent</td>
<td>0.42</td>
<td>1.83</td>
<td>.02</td>
</tr>
<tr>
<td>Abused by non-parent adult</td>
<td>2.89</td>
<td>1.82</td>
<td>.09</td>
</tr>
<tr>
<td>Abused by peer</td>
<td>1.11</td>
<td>1.87</td>
<td>.04</td>
</tr>
<tr>
<td>Emotional distress</td>
<td>2.96***</td>
<td>0.54</td>
<td>.36</td>
</tr>
<tr>
<td>Perceive threat</td>
<td>3.62**</td>
<td>1.20</td>
<td>.19</td>
</tr>
</tbody>
</table>

Note. R² = .10 for Step 1; ΔR² = .12 for Step 2 (p = .235); ΔR² = .20 for Step 3 (p < .001).

† p < .1.
* p < .05.
** p < .01.
*** p < .001.
Table 4
Descriptive statistics for variables in the hierarchical regression (n = 236).

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity of PTSD symptoms</td>
<td>20.93</td>
<td>13.41</td>
<td>0</td>
<td>59</td>
</tr>
<tr>
<td>Age</td>
<td>12.39</td>
<td>1.33</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Female victim</td>
<td>0.42</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CPA frequency</td>
<td>3.12</td>
<td>2.14</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Elapsed time (in years)</td>
<td>2.23</td>
<td>2.35</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Abused by parents</td>
<td>0.69</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Abused by non-parent adults</td>
<td>0.25</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Abused by peers</td>
<td>0.27</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Emotional distress</td>
<td>2.74</td>
<td>1.62</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Perceive threat</td>
<td>0.85</td>
<td>0.70</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Discussion

The aim of this research was to examine child physical abuse under a culturally appropriate definition. Considering the fact that corporal punishment, as a means of discipline, is widely accepted and well-justified in Taiwan as well as other Chinese societies, arriving at an agreement for a general definition for physical abuse, among the masses, is necessary. Despite the gray area between corporal punishment and physical abuse, when a child is violently attacked to the point of being bruised, wounded, burned, or having their bones broken, the occurrence of abuse is clear and indisputable. By adopting a more rigorous definition of CPA, the current study shows that the lifetime prevalence of CPA in Taiwan is 34.0%. That is, about a third of Taiwanese children have experienced physical violence by somebody in their lives. After being mistreated, 13.6% of victims later developed significant symptoms meeting the DSM-IV diagnostic criteria of PTSD. Such a high percentage of prevalence resonates with the issues the present study endeavors to explore: (1) the possible cultural factors that contribute to the varying levels of CPA prevalence between Chinese and Western societies; (2) the resilient and/or protective factors that may prevent abused children from serious posttraumatic disturbances; (3) the relation of victims’ Criterion A2 distress and perceived threat to their PTSD symptom severity. To better understand the meanings of CPA and its consequences, a series of cross-cultural comparisons are provided to further probe these questions.

High CPA prevalence in relation to the Chinese philosophy of education

In comparison to previous CPA studies concerned with other Chinese societies (e.g., Kim et al., 2000; Tang, 1998, 2006), the prevalence rate of parental CPA in the current study (22.0%) is much lower than previous studies of parental violence conducted in Taiwan (lifetime prevalence as 40.4%), and China and Hong Kong (1-year prevalence 52.6–70.6%). Such difference highlights the necessity of reexamining the definition of CPA present in previous studies. Considering the widely accepted nature of physical punishment in Chinese societies, the current study defines CPA not only by the occurrence of violent conduct (e.g., slapping, hitting, kicking), but also by the severity of consequential injury. This modification helps distinguish CPA from corporal punishment among Chinese populations.

In terms of cross cultural CPA prevalence comparison, overall, the lifetime prevalence of CPA in our sample was obviously higher than most Western surveys (34% vs. 3.6–15.8%) (e.g., Hetzel & McCanne, 2005; Schaaf & McCanne, 1998). When focusing on caregivers as perpetrators, the difference is still pronounced: while more than a fifth of Taiwanese children have been physically assaulted by their parents (22%), only around 3.6–7.0% of children in Western studies have had similar experiences (e.g., Cawson et al., 2000; Elklit, 2002). The numbers reveal that children living in Chinese societies have a higher probability of experiencing physical abuse.

This relatively higher prevalence rate may correlate to educational attitudes found in Chinese cultural tradition. Cultural influence can be seen in sayings such as: “You cannot shape a piece of jade without carving” and “A filial child is cultivated under the stick.” Following such philosophy in administration of education, Chinese-style parenting emphasizes control and discipline over children (Kwok & Tam, 2005; O’Brien & Lau, 1995). It still remains, however, a personal choice whether or not to raise a rod to a child. Nevertheless, physical punishment is generally considered an efficient and legitimate means for correcting childhood misbehaviors among Chinese families (Kwok & Tam, 2005; Lin, 1992; Lin & Fu, 1990; O’Brien & Lau, 1995). As suggested in previous studies, adults with higher acceptance of physical punishment are more likely to exhibit abusive behavior toward children (Marker et al., 2005; Zhai & Gao, 2009). Taking corporal punishment as a useful disciplinary method, parents who frequently practice this child-rearing technique are more likely to blur the boundary between corporal punishment and physical abuse. For example, they may originally use physical violence to inflict pain, but unexpectedly step beyond the line to a place where a child is caused injury. Moreover, no matter the original purpose of the mistreatment, adults regarding physical punishment as an acceptable means of education possess a higher tendency to justify their violent treatment as a righteous means of education. As a result, Taiwanese parents may therefore be more likely to engage in abusive behavior than their Western counterparts. A comparison among similarly-aged perpetrators is in agreement with this argument. Since this attitude concerning child discipline does not apply to peers, the cultural difference no longer
exists when it comes to peer bullying. Specifically, in the current study, 10.6% of children have been violently assaulted by perpetrators of similar age, a figure close to that of physical bullying (14–17.2%) in Western societies (e.g., Cawson et al., 2000; Guckin, Cummins, & Lewis, 2009).

Similar prevalence of CPA-related PTSD: The buffering effect of Chinese culture

CPA victims in Taiwan show a lower percentage of sub-clinical PTSD (16.9%), with Criteria B, C, and D being 41.9%, 19.5%, and 37.3%, respectively. In comparison, previous findings in Western countries have reported the prevalence of partial PTSD as being around 34.4%, in which Criteria B, C, and D were 72.0%, 28.0%, and 56.0%, respectively (i.e., Elklit, 2002; Giaconia et al., 1995). However, in terms of full PTSD, the prevalence rate of the present sample was similar to those found in Western studies (13.6% vs. 12.0–18.8%) (i.e., Elklit, 2002; Giaconia et al., 1995).

The mixed findings of cultural difference in sub-clinical and full PTSD may relate to the buffering effect unique to Chinese viewpoints of CPA. In the current study, most CPA perpetrators were those older than their victims. In Chinese societies, physical discipline undertaken by elder family members is generally accepted as a means of discipline. Children consider administered punishment as modification to their behaviors. Therefore, despite their severe physical injuries, many victims continue to justify their “CPA” experience as merely a harsh, yet reasonable punishment to their misconducts. Through such rationalized attribution, abused children may regain their sense of control; that is, they may come to believe that as long as they behave well, such harsh punishments can be avoided in the future. As a buffer, this culturally-specific attribution of adult violence may help some children, mostly less severe cases, adapt to the negative impact of CPA to certain degree, and as they behave well, such harsh punishments can be avoided in the future. As a buffer, this culturally-specific attribution of adult violence may help some children, mostly less severe cases, adapt to the negative impact of CPA to certain degree, and protect them from being overwhelmed by uncertain punishment. Considering predictability and sense of control as the core factors of many post-traumatic psychological problems, including PTSD (Horowitz, 1986), the current study attempted to propose the possibility that the cultural-specific attribution of abuse could be a protective factor, lowering the percentage of sub-clinical post-traumatic distress in Chinese abused. Future studies are encouraged to explore participants’ perceptions and attributions of CPA in different cultures to further examine this imperative issue.

Roles of PTSD Criterion A2 and perceived threat of life

In addition to findings concerning CPA and PTSD, the regression analysis suggested that victims’ PTSD Criterion A2 distress and perceived threat of life/injury are able to predict the severity of PTSD symptoms. The findings are in accordance with previous studies, in which peritraumatic distress, as well as threat of life/injury, were positively associated with PTSD (Breslau & Kessler, 2001; Pietrantoni, Prati, & Lori, 2009; Silva & Kessler, 2004; Voges & Romney, 2003).

Furthermore, we explore the relationship between Criterion A2 and gender, as well as their impact on PTSD. Although the present study found no significant gender difference in the prevalence of Criterion A2 or PTSD, previous studies often reported that female victims were more susceptible to Criterion A2 distress, and that, compared to men, they had a higher PTSD prevalence (e.g., Voges & Romney, 2003). Breslau and Kessler (2001) argued that a higher prevalence of PTSD among female victims may actually result from their higher susceptibility to Criterion A2 distress compared to their male counterparts. In other words, rather than being a woman, it is the Criterion A2 that the victim experiences that makes her more vulnerable to PTSD. Our analyses also showed that after Criterion A2 was introduced to the regression model as an explanatory variable, the gender effect no longer remained significant. In summation, contrasted with the effect of gender, Criterion A2 may be a more influential risk factor for the development of PTSD.

In addition, Criterion A2 is conventionally assumed for all traumatic exposure in previous studies. However, despite slight discrepancies in sample and event characteristics, the prevalence of Criterion A2 distress was found to be similar (88.6% vs. 78.1%) across studies (Breslau & Kessler, 2001). The results suggested that at least a small percentage of CPA victims (e.g., 11.4% in the current study) may be immune to emotional distress. Moreover, it is worth noting that the present study focused on relatively severe cases. When cases of mild injuries or events with less subjective distress are also included, there may be even higher percentages of victims who do not fulfill Criterion A2. As a result, a diagnosis of PTSD on the presumption of Criterion A2 may overestimate its prevalence.

Other than Criterion A2, victims’ perceived threat of life/injury also predicted the severity of PTSD symptoms (e.g., Silva & Kessler, 2004; Voges & Romney, 2003). Despite severe physical injuries, it is worth noticing that only 66.5% of abused victims perceived a threat against life or injury when exposed to violent assault. In consideration of the findings of both Criterion A2 and perceived threat in the current study, although most Taiwanese children perceive intense fear, helplessness, or horror in face of CPA, at least a third of them do not believe that the perpetrators would cause them serious bodily harm or even threaten their lives. However, to know whether this phenomenon is unique to Chinese societies is difficult. At present, only one study reported that children in Hong Kong tend to consider discipline and physical force by parents less harsh than Latinos and Caucasians (Hong & Hong, 1991). Little research has examined perceived threat of life/injury among CPA victims, whether in Asian or Western studies. Only Briere and Elliott (2000) reported the prevalence of perceived threat of life/injury to natural disaster among the US sample (66.5%), which is very close to what is reported in the present study (64.0%). It is strongly recommended that future studies examining the perceived threat among CPA victims in different cultures help people better understand the relationship between cultural attitude toward CPA and the level of perceived threat, as well as the impacts of these two factors on the development of PTSD.
Contributions, limitations, and future research

The present study is among the first to provide epidemiological data on CPA-related PTSD from East Asian societies, especially when PTSD studies focusing on CPA remain sparse in Western countries. Above all, it defined CPA by specifying injury severity and investigating CPA prevalence in relation to different perpetrators. Based on these considerations, the present study provides community-based epidemiological data, which highlights the influence of Chinese culture on the high prevalence of CPA. Furthermore, this study also provides valuable prevalence data of CPA-related PTSD. The influential roles of Criterion A2 distress and victims' perceived threat of life on PTSD development were also addressed. This study sheds light on the importance of cultural influence on the occurrence of CPA in addition to victims' reactions and psychological aftermath.

Limitations to this work are mainly in relation to its methodology. First, convenient sampling method was undertaken, which may hinder the current study from generalizing the findings to the whole population. Second, only those victims who identify CPA as their most stressful life event (35.3%) were included in the analysis of PTSD symptoms. In other words, victims experiencing CPA along with other trauma of comparable devastation were excluded. As a result, the percentages of PTSD sufferers could be slightly overestimated, and interpretations of the results should be made conservatively. Third, the current study only examined PTSD symptomatology from victims who identified CPA as their most stressful life event; some participants may also have experienced other forms of maltreatment or traumatic events. Therefore, we cannot rule out the possibility that the posttraumatic consequence may result from other traumatic events other than CPA, despite their relatively weak impact.

Overall, the current findings point out the necessity of further cross-cultural studies on children’s trauma and related psychopathology. Future research is essential to investigate whether the gray area between corporal punishment and physical abuse is a unique phenomenon in Taiwan, under the influence of a Chinese philosophy of education. In particular, both parents' and children’s cognitive appraisal and internal boundaries between corporal punishment and physical abuse should be examined. In the same vein, future studies examining perceived threats among CPA victims in different cultures are strongly recommended to build an understanding of its nature and subsequent impact on the development of PTSD. We hope that this research will facilitate further progress in the domain of cultural research in CPA and related PTSD.

References

Department of Statistics, Ministry of Interior, Taiwan. (2007). Handled cases of child and youth protection services.


Appendix A. DSM-IV-TR criteria for posttraumatic stress disorder

A. The person has been exposed to a traumatic event in which both of the following have been present:

1. the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others

2. the person’s response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behavior.

B. The traumatic event is persistently reexperienced in one (or more) of the following ways:

1. recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
(2) recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content.

(3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur upon awakening or when intoxicated). Note: In young children, trauma-specific reenactment may occur.

(4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.

(5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.

C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

(1) efforts to avoid thoughts, feelings, or conversations associated with the trauma
(2) efforts to avoid activities, places, or people that arouse recollections of the trauma
(3) inability to recall an important aspect of the trauma
(4) markedly diminished interest or participation in significant activities
(5) feeling of detachment or estrangement from others
(6) restricted range of affect (e.g., unable to have loving feelings)
(7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

(1) difficulty falling or staying asleep (2) irritability or outbursts of anger (3) difficulty concentrating (4) hypervigilance (5) exaggerated startle response

E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.