

# Trauma, Violence, & Abuse

## **Prevalence and Correlates of the Co-occurrence of Family Violence: A Meta-analysis on Family Polyvictimization**

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## Abstract

### Objective

The aims of this study are to: (a) provide reliable estimates of prevalence rates of family polyvictimization by synthesizing the findings from the existing literature; (b) examine the effect sizes of the impact of one type of family victimization on other types of family victimization; and (c) investigate the correlates of family polyvictimization.

### Method

Databases of literature published on or before April 2018 were searched. A total of 59 publications met the inclusion criteria and were included in the analysis for the combined odds ratios, to estimate the associations among different types of family victimization; 38 of them (99,956 participants) were used for the calculation of the combined prevalence rates of family polyvictimization.

### Findings

The overall co-occurrence rates of family victimization were 9.7% among the general population and 36.0% among the clinical population. The combined odds ratio of other type(s) of victimization when one was present was 6.01 ( $p < .001$ ). Longitudinal studies show that, when a family reported intimate partner violence, the odds of child abuse and neglect within the same family at a later stage was 3.64 ( $p < .001$ ). Depression and posttraumatic stress disorder (PTSD) were two significant correlates associated with family polyvictimization.

### Conclusion

Family polyvictimization is prevalent across the world. The high co-occurrence rates and strong associations between different types of victimization on different family members warrant the need for the early detection of victims and effective preventions and interventions using a family approach, instead of treating victims from the same family individually.

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Keywords: violence, abuse, maltreatment, family polyvictimization, meta-analysis.

For Peer Review

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## **Prevalence and Correlates of the Co-occurrence of Family Violence:**

### **A Meta-analysis of Family Polyvictimization**

Family members share common experiences from their immediate settings (WHO, 2005). Characteristics of one family member may interact with or moderate the influence of certain correlates of violence (Slep & O’Leary, 2001) and in turn increase the risk or likelihood of violence among members within the same family. Different types of violence victimization within a family have been examined independently in the past few decades and there have been a vast number of findings on the prevalence and relevant issues of individual family victimization (Edleson et al., 2007; Chan, 2017). Starting in the 1970s, international organizations, including the World Health Organization (WHO), United Nations (UN), and UNICEF have placed emphasis on the importance of the associations between interpersonal violence and family victimization (Bidarra, Lessard, & Dumont, 2016). However, it was not until the 1990s that researchers began to report the co-occurrence of intimate partner violence (IPV) and child abuse and neglect (CAN), the two most common types of family victimization (e.g., Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997; Goddard & Hiller, 1993; Shipman, Rossman, & West, 1999). Since the beginning of the 21<sup>st</sup> century, researchers have extended their efforts to investigate the co-occurrence of other types of family victimization, including elder abuse (EA) and in-law abuse (ILA; i.e., violence or conflicts among in-law members) (e.g., Chan, Tiwari, Fong, Leung, Brownridge, & Ho, 2009; Raj, Livramento, Santana, Gupta, & Silverman, 2006; Silverman et al., 2016).

### **The Concepts of Child Polyvictimization and Family Polyvictimization**

Polyvictimization is a concept that refers to two or more types of victimization, rather than repeatedly occurring episodes of one single type of victimization (Turner, Finkelhor, & Ormrod, 2010; Bidarra, Lessard, & Dumont, 2016). This concept first appeared about a

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3 decade ago, when researchers made a successful attempt to study children exposed to  
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5 multiple types of victimization within a certain period of time (Finkelhor, Ormrod, & Turner,  
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7 2007). In that study, the researchers also evaluated 34 specific types of violence against  
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9 children and demonstrated that one in every five children was a victim of more than four  
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11 types of victimization. These child victims were referred to as “polyvictims” and the  
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13 phenomenon of the co-occurring of multiple types of victimization against children was  
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15 referred to as “child polyvictimization” (Finkelhor et al., 2007). Later, the same group of  
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17 researchers showed that children exposed to polyvictimization tended to have more serious  
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19 trauma symptoms and behavioral problems, both in the current year and in their lifetime, than  
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21 children repeatedly exposed to one single type of victimization (Finkelhor et al., 2007;  
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23 Finkelhor, Turner, Ormrod, & Hamby, 2009). Since then, different researchers have extended  
24  
25 the studies on child polyvictimization and have reached a consensus on its deleterious effects,  
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27 in that polyvictims often demonstrate poorer physical and mental health status and  
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29 perception, and more psychopathological and psychosomatic symptoms than other children  
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31 (Hesketh, Zhen, Lu, Dong, Jun, & Xing, 2010; Chan et al., 2017).  
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38 Yet, when compared to research on the co-occurrence of two types of victimization,  
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40 studies on polyvictimization are still scarce and concrete evidence on the impacts and  
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42 correlates of the problem is still lacking. The prevalence and impacts of two types of co-  
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44 occurring victimization (e.g., IPV and CAN, IPV and EA, etc.) have gained widespread  
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46 recognition in recent decades, however, progress of investigations into the interconnections  
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48 and co-occurrence of more than two types of victimization remain slow (e.g., Beeman et al.,  
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50 2001; Cannon et al., 2010; Grossman & Lundy, 2003; Pritchard, 2007; White & Smith, 2009;  
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52 Hamby & Grych, 2013). Current efforts in regard to explorations of violence co-occurrence  
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54 have been split into several major areas (Hamby, Taylor, Jones, Mitchell, Turner, & Newlin,  
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56 2018). Given that different forms of victimization may share the same factors within a  
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3 family, there is no reason to overlook the importance of studying the co-occurrence of  
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5 multiple forms of family victimization. Studying co-occurrences of various forms of  
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7 victimization within a family unit may reveal the cumulative burden of this victimization and  
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9 provide implications for further prevention and intervention on family victimization.  
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12 Building on the concept of child polyvictimization (Finkelhor et al., 2007) and the  
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14 profound importance of the family approach in violence (i.e., viewing family as a unit in  
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16 which members share numerous features and characteristics associated with victimization)  
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18 highlighted by the WHO (2005), researchers have recently proposed the concept of family  
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20 polyvictimization, the co-occurrence of more than two types of family victimization among  
21  
22 members of the same family (Chan, 2017). Similar to child polyvictimization, family  
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24 polyvictimization refers to the co-occurrence of more than two different types of  
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26 victimization on different members within a family. Rather than studying different family  
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28 victimization on individual members separately, family polyvictimization takes a family  
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30 approach that views family as a unit. In other words, it emphasizes the co-occurrence of  
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32 different types of violence on different family members rather than the re-occurrence of one  
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34 single type of victimization or different types of victimization on the same family member. In  
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36 a national study in China, Chan (2014) found a lifetime prevalence of 14% to 18% for child  
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38 polyvictimization and later demonstrated that the mere witnessing of parental intimate partner  
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40 violence, elder abuse, and in-law conflict also increased the likelihood of child victimization  
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42 and child polyvictimization (Chan, 2014; Chan et al., 2017). The significant associations  
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44 between different types of family victimization have led to researchers becoming interested  
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46 in investigating the co-occurrence of multiple types of victimization within a family. Chan  
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48 operationalized family polyvictimization as the co-occurrence of IPV, CAN, and EA within a  
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50 family and found a lifetime prevalence of about 3% and a past-year prevalence of 1% (Chan,  
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52 2017). In that study, members of polyvictimized families were more likely to report poorer  
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3 mental health and more addictive behaviors, such as smoking and gambling, than those in  
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5 families with no victimization or only one type of victimization. The potential harm caused  
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7 by family polyvictimization on individual family members warrant more scientific evidence  
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9 in the future study.  
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### 14 **Diversity of the Co-occurrence of Polyvictimization Prevalence Rates**

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17 The extant literature shows a wide range of co-occurrence rates of family victimization  
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19 due to the differences in the definition of victimization and the methodology employed. For  
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21 example, the co-occurrence rates of IPV and CAN range from 6% to 55% (Cannon,  
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23 Anderson, Rivara, & Thompson, 2010; Chan, 2017); those of IPV and EA range from 1% to  
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25 71% (e.g., Grossman & Lundy, 2003; Zink & Fisher, 2007); and those of CAN and EA range  
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27 from 10% to 66% (e.g., Pritchard, 2007; Chan, 2017). A significant association was also  
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29 found between IPV and emotional ILA (Raj, Livramento, Santana, Gupta, & Silverman,  
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31 2006) and ILA was found to be most significantly associated with preceding-year IPV against  
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33 pregnant women, with 49% reporting one or more forms of perinatal gender-based forms of  
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35 victimization (e.g., Chan et al., 2009; Silverman et al., 2016). The diversity of these  
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37 prevalence rates of co-occurrence might stem from the differences in the definition and  
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39 operationalization of the victimization investigated. On the other hand, it might also be rooted  
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41 in the differences in study procedures and methodologies.  
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47 Part of the wide range of co-occurrence rates may be contributed by the use of different  
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49 samples and sampling procedures across studies (Stoltenborgh, van Ijzendoorn, Euser, &  
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51 Bakermans-Kranenburg, 2011). Existing studies often use either community samples, which  
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53 are mainly selected with random or probability sampling procedures from the general  
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55 population, or clinical samples, which are mainly selected using convenience sampling in  
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57 settings such as clinical service centers and police records. In studies on the co-occurrence of  
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3 family victimization, the latter of the two often consists of victims who have reported at least  
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5 one type of victimization. It could therefore be expected that the co-occurrence rates between  
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7 these two types of samples could show a great deal of variance due to the heterogeneity of the  
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9 samples and methodologies used. To differentiate the co-occurrence rates of victimization  
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11 between these two types of samples, Appel and Holden (1998) have suggested the use of co-  
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13 occurrence rates and percentage of overlap (Appel & Holden, 1998). Overall, co-occurrence  
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15 rate refers to the rate of co-occurrence of at least two types of family victimization among the  
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17 community samples in which respondents might or might not report any victimization; while  
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19 percentage of overlap refers to the rate of co-occurrence of family victimization among  
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21 clinical samples in which respondents have reported at least one type of victimization. Taking  
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23 into consideration the strong evidence for the associations among different types of  
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25 victimization within a family, one could expect the percentages of overlap of family  
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27 victimization to be higher than the co-occurrence rates of family victimization or  
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29 polyvictimization. Unfortunately, the literature does not clearly differentiate these two rates  
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31 and most existing studies tend to use the term “co-occurrence rate” regardless of the type of  
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33 sample used, making it hard to obtain a clear picture of the issue.  
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### 42 **Individual or Family Correlates of Co-occurring Family Victimization**

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44 In addition to the efforts made to provide reliable estimates of the prevalence rates of  
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46 co-occurring family victimization or family polyvictimization, researchers have also made  
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48 numerous successful attempts to explore the correlates of the problem at the individual or  
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50 family level. For example, the co-occurrence of IPV and CAN has often been found to be  
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52 associated with individual correlates, such as chronic illness, depression, loneliness,  
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54 psychopathology and adjustment problems, suicide attempts, educational level, criminal  
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56 history, and alcohol and drug abuse (Hartley, 2002; Tajima, 2004; Stover, Urdahl, & Easton,  
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2012; Turner, Finkelhor, Hamby, & Shattuck, 2013). Violent parents may neglect their children when the disruption of victimization weakens their ability to supervise and protect their children, which often results in insecure attachment and is in turn associated with subsequent CAN (Chan, 2014; Coohy & Zhang, 2006).

Family disruption and adversity may stand out even more when it comes to grounds for the co-occurrence of family victimization (Chan, 2017). Family disadvantages, such as marital dissatisfaction, low socio-economic status, financial hardship, single parenthood, neighbourhood violence, and social isolation as a result of migration, have been found to be significantly associated with victimization (Slep & O’Leary, 2001; Gewirtz & Edleson, 2007; Turner et al., 2013). Parental stress, which usually results from economic difficulties, could lead to harsh parenting practices and transform into child maltreatment (Turner, 2005; Chan, 2014). Majority of elderly people aged 65 years or above often live with their children and grandchildren in some Asian countries (Hong, Lee, Espelage, Hunter, Patton, & Rivers, 2016), where married women can receive help from these co-residing elders in regard to chores and child rearing issues. These intensive interactions might not only provide more opportunities for enriching intergenerational relationships, but also provide more insights on abusive interactions in some cases. Conflicts between partners or in-laws over childrearing may escalate to aggression. Similarly, stress caused by violent partners or in-laws may reduce caregivers’ ability to deal with children’s misbehaviour properly, which may contribute to overreacting and abusive behaviors toward the children (Slep & O’Leary, 2001). Attention has recently turned to the community-level mechanisms through which economic disadvantage may lead to higher rates of family victimization and polyvictimization. Social support is demonstrated to be able to mitigate the harmful health effects associated with victimization (Bosch & Bergen, 2006; Chan et al., 2017). On the other hand, social norms

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3 may sometimes prevent victims or polyvictims from breaking the silence and seeking help  
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5 (Colucci, O'Connor, Field, Baroni, Pryor, & Minas, 2014).  
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### 10 **Existing Meta-analytic Studies and Reviews**

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12 In summary, family victimization co-occurrence and polyvictimization are serious  
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14 global issues that could lead to irreversible deleterious effects on their victims. One of the  
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16 essential steps to combating and preventing these issues is the provision of reliable estimates  
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18 and figures. Yet, given the wide degree of method and sample variance in the existing  
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20 research on family victimization co-occurrence and polyvictimization, the estimation of  
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22 effect sizes across studies presents a challenge. To the best of our knowledge, current meta-  
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24 analytic studies and systematic reviews all focus on the co-occurrence of IPV and CAN,  
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26 while no family-oriented approach has been used to examine the co-occurrence of more than  
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28 two forms of victimization within the same family (Appel & Holden, 1998; Bidarra et al.,  
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30 2016; Edleson, 1999; Slep & O'Leary, 2001; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe,  
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32 2003). These studies have demonstrated that the impact of exposure to violence may play a  
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34 complex role in the factors related to living environment, family, and demographic  
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36 characteristics (Appel & Holden, 1998; Wolfe et al., 2003). They also provide preliminary  
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38 evidence that CAN might have long-term impacts on children's development and the  
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40 witnessing of parental violence in an abusive family may be positively associated with  
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42 violent marital relationships in adulthood (Stith, Rosen, Middleton, Busch, Lundeberg, &  
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44 Carlton, 2000; Wood & Sommers, 2011).  
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51 Despite the current efforts related to the co-occurrence of IPV and CAN, meta-analyses  
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53 or systematic reviews of the co-occurrence of other types of family victimization, as well as  
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55 those of family polyvictimization, remain scarce. One reason for the scarcity of relevant  
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57 reviews and meta-analyses may be the limited number of research on family  
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3 polyvictimization or co-occurrence of victimization other than IPV and CAN. Yet, there is no  
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5 reason to overlook the significance of the findings by looking at the overlapping of two types  
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7 of victimization. Obtaining reliable estimates of the effect sizes of the associations between  
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9 multiple types of family victimization could be of tremendous importance in facilitating the  
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11 detection and evaluation of the presence of abusive and violent events in a family context  
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13 (Bidarra et al., 2016; Wolfe et al., 2003). It is also important to explore the shared etiological  
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15 process regarding co-occurrences of family victimization; this cannot be achieved until  
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17 reliable estimates can be obtained across studies on other combinations of family  
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19 victimization.  
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24 The present meta-analytic study aims to fill this research gap by: (a) providing reliable  
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26 estimates of the prevalence rates and percentages of the overlaps of co-occurrences of  
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28 different types of family victimization, as well as family polyvictimization, synthesized from  
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30 the existing literature; and (b) examining the effect sizes of the impact of one type of family  
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32 victimization on other types of family victimization. The major types of violence within a  
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34 family (IPV, CAN, EA, and ILA) are included. To facilitate the effective identification of  
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36 correlates of family victimization and polyvictimization for the development of the effective  
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38 prevention and intervention of family polyvictimization in the future, this study also  
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40 investigates individual and family factors as correlates of the problem.  
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## 47 Method

### 48 Definitions of Family Victimization

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51 Based on the definitions used by the WHO and conceptualizations from previous  
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53 research on family victimization, individual victimization is defined as follows:  
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56 **Family polyvictimization.** Family polyvictimization is defined as the experience of  
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58 multiple types of victimization reported by different members within the same family (Chan,  
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2017). The types of family victimization may include IPV between parents, child polyvictimization including CAN, EA against grandparents, and ILA between in-laws.

**IPV.** IPV is defined as the behavior in an intimate relationship (i.e., between the parents in a family) that causes physically, psychologically, and/or sexually harmful impacts on one's health. These may include acts of physical aggression, sexual coercion, psychological abuse, and controlling behaviors (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002).

**CAN.** According to the WHO (Krug et al., 2002), CAN in this study refers to all types of physical and/or emotional ill-treatment, sexual violence, neglect or other exploitation that result in actual or potential harm to a child's health, survival, development, and/or dignity in the context of a relationship of trust, power, and responsibility.

**EA.** In this study, EA against the grandparents of the family is defined as a single or repeated violent act, or a lack of appropriate action, to an elderly person, that causes harm or distress within a relationship where there is an expectation of trust.

**ILA.** ILA refers to in-law abuse or conflict, which may include a serious disagreement or argument, a state of opposition or hostility, a fight or struggle, or an incompatibility between opinions, all occurring among relatives by marriage (Chan, Tiwari, Fong, Leung, Brownridge, & Ho, 2009). In this study, ILA mainly refers to violence between in-law parents and children (i.e., the grandparents and the parents of the family).

### **Inclusion and Exclusion Criteria**

There are four primary criteria for inclusion of articles in this meta-analysis:

- (i) The studies must have been published in a peer-reviewed journal, report, book, or dissertation before April 2018 (i.e., the time when the search ended);

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3 (ii) The studies must report the co-occurrence of at least two types of victimization,  
4 including CAN or child victimization, IPV, EA, and ILA;  
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7 (iii) The studies must report the co-occurrence of victimization among members in the  
8 same household;  
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12 (iv) The family samples of the studies must include three generations, including children,  
13 parents, and grandparents.  
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17 Articles were excluded when:

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19 (i) They reported a single type of victimization only;  
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21 (ii) They reported victimization that occurred in the different stages of life of the same  
22 person (e.g., CAN in childhood and IPV in adulthood);  
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24 (iii) They did not provide sufficient information for the computation of effect sizes (e.g.,  
25 they lack means and standard deviations, group sizes, test statistics, etc.);  
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27 (iv) They focused on the evaluation of an intervention or the review of topics not related  
28 to family victimization.  
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### 38 **Literature Search Strategy**

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40 Studies included in this meta-analysis were identified with several search strategies.  
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42 First, six databases of literature in the English language were searched. They include the  
43 Applied Social Sciences Index and Abstracts (ASSIA), ERIC, MEDLINE, PsycINFO,  
44 Sociological Abstracts, and Social Service Abstracts. The search was performed using  
45 multiple combinations of the keywords, which included: child abuse, child victim, child  
46 neglect, violence against child, child maltreatment, bully, partner violence, partner abuse,  
47 spouse abuse, partner aggression, couple violence, couple abuse, couple aggression, domestic  
48 violence, elder neglect, elder abuse, and in-law. Second, the reference lists of the eligible  
49 articles were reviewed for potentially relevant articles and reports. Third, the references of  
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3 the review articles were also searched to locate studies that were not covered in the previous  
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5 database and reference search.  
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8 The present search identified 11,579 records. After the removal of duplicate entries,  
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10 11,345 articles remained; 1,212 of them met the inclusion criteria. However, 1,107 articles  
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12 were excluded because they were reporting case studies or descriptive reviews, and 46 were  
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14 excluded as they did not provide sufficient data for the calculation of the effect sizes. The  
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16 final pool included 59 articles for the meta-analysis. Details about the search and article  
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18 selection procedures are shown Figure 1.  
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22 [Figure 1 about here]  
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### 24 **Data Extraction**

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26 Two well-trained coders performed all of the data extraction and carried out the  
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28 evaluation process. Prior to the coding process, the two coders independently assessed and  
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30 evaluated the quality of the 59 studies using a checklist covering five aspects, rated on a  
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32 “1/0” scale. The articles were assessed by: (a) whether or not they reported sample  
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34 recruitment procedures; (b) whether or not they reported the profiles or characteristics of the  
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36 sample; (c) whether or not they used validated measures or scales; (d) whether or not they  
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38 performed appropriate statistical analyses; and (e) whether or not they provided sufficient  
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40 data for analysis. The score ranged from 0 to 5, with higher scores indicating a better quality  
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42 for use in the meta-analysis. The average score of the included articles was 4.73, reflecting  
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44 the way in which they were of a high quality. No study was excluded due to unsatisfactory  
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46 quality.  
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51 Coders then extracted data from the articles using a structured coding sheet that  
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53 assessed the following aspects of the studies:  
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56 (i) Publication information, including article title, author(s), year of publication, and  
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58 study site;  
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- (ii) Sample characteristics, including sample feature (e.g., clinical sample, community sample, etc.), sample size, sampling method or setting (e.g., random sampling, convenience sampling, etc.), age, gender ratio, and informants or reporters;
  - (iii) Violence-related factors, including the types of victimization measured, the measures or scales used, the time frame of the measurement (e.g., lifetime, the year preceding the study, etc.), and the gender ratio of the perpetrators and victims;
  - (iv) Individual and family factors, including family structure (e.g., single parent, two parents, etc.), parents' employment status, parents' marital status (e.g., married, cohabiting, separated, etc.), addictive behaviors (gambling, smoking, etc.), and health correlates (e.g., PTSD, depression, health-related quality of life, etc.).

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The 59 studies were distributed randomly to the two reviewers for dual independent assessment. We calculated the Cohen's kappa statistic to assess the inter-rater reliability. Inter-rater agreement for all of the 59 articles included in the meta-analysis was high, with a weighted Cohen's kappa of 0.96.

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#### Computation of Effect Sizes

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First, pooled prevalence estimates of the co-occurrence rates of different types of family victimization and family polyvictimization were calculated. A forest plot was used to demonstrate the prevalence rate, with 95% confidence intervals (CI) in each study. Second, pooled odds ratios (ORs) with 95% CI of the impacts of one type of family victimization on the presence of another type of victimization were calculated. In the last step, ORs with 95% CI of the effects of specific individual and family factors were also calculated. Random effects models were used to combine studies.  $Q$  statistics were used to estimate the heterogeneity, while  $I^2$  statistics were used to calculate the proportions of observed variance

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3 of the included studies. Publication bias was examined with the aid of a funnel plot. The  
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5 Comprehensive Meta-Analysis (third version) was used to conduct all statistical analyses.  
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## 10 **Results**

### 11 **Study Characteristics**

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14 As shown in Figure 1, the final pool for this meta-analysis consisted of 59 articles and  
15 provided odds ratios on occurrence of victimization or associated factors. Of these 59 articles,  
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17 38 provided co-occurrence rates of family victimization for the general synthesis of the  
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19 prevalence rates.  
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24 The summary of the 38 articles used for the calculation of the prevalence rates provided  
25  
26 in Table 1 demonstrates the wide variability of the characteristics across studies. One of the  
27  
28 most obvious differences was in the types of sample used in the studies. Overall, there were  
29  
30 two major types of samples: (a) community samples, which were mainly selected using a  
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32 probability sampling procedure; and (b) clinical samples, which were mainly selected using  
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34 convenience sampling in settings such as clinical service centers and with police records. It  
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36 was observed that the co-occurrence rates between these two types of samples could lead to a  
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38 wide variance in the effect sizes, due to the heterogeneity of the samples and methodology  
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40 (as shown in Figure 2); therefore, the analysis adopted the conceptualization of co-occurrence  
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42 rates and percentage of overlap to differentiate between the two co-occurrence rates (Appel &  
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44 Holden, 1998).  
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49 [Table 1 about here]

50  
51 [Figure 2 about here]

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54 In this analysis, co-occurrence rate refers to the rate of the co-occurrence of at least two  
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56 types of family victimization among community samples, of which respondents might or  
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58 might not report any victimization. Percentage of overlap refers to the rate of the co-  
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3 occurrence of family victimization among clinical samples, in which respondents reported at  
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5 least one type of victimization. Using this definition, 21 of the 38 studies (55.3%) used  
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7 community samples and provided data for the calculation of the effect size of the co-  
8  
9 occurrence rate, while the remaining 17 studies (44.7%) used clinical samples and provided  
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11 data for that of the percentage of overlap of family victimization.  
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15 The sample sizes of these studies ranged from 100 to 18,341, together providing a  
16  
17 considerable sample size of 99,956 for the general synthesis of effect sizes. Among the  
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19 studies using community samples ( $n = 21$ ), only one (4.8%) examined the co-occurrence of  
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21 three types of victimization (CAN, IPV, and EA). Five studies (23.8%) investigated the co-  
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23 occurrence of various types of child victimization (i.e., child polyvictimization), 11 studies  
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25 (52.4%) examined the co-occurrence of CAN and IPV, and four studies (19.0%) tested for  
26  
27 the co-occurrence of IPV and ILA. Among the clinical studies using clinical samples ( $n =$   
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29 17), one (5.9%) studied the percentage of overlap of child polyvictimization among samples  
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31 with CAN, four (23.5%) studied that of CAN and IPV among samples with IPV, and 12  
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33 (70.6%) studied that of CAN and IPV among samples with CAN.  
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#### 40 **Overall Co-occurrence Rates and Percentages of Overlap**

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42 Table 2 shows the co-occurrence rates and percentages of overlap of family  
43  
44 victimization in the meta-analysis. Overall, the co-occurrence rate synthesized from the 21  
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46 studies with community samples was 9.7% (95% CI [7.4%-12.7%],  $p < .001$ ), while the  
47  
48 percentage of the overlap of victimization in the clinical samples was 36.0% (95% CI  
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50 [28.8%-43.9%],  $p < .001$ ), showing that the percentage of overlap in clinical samples could  
51  
52 be four times as high as the co-occurrence rate in community samples. Wide variances could  
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54 be observed in both types of studies; over 98% of the total variations might be due to  
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56 heterogeneity in the samples and types of victimization investigated, as well as the  
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differences in the conceptualizations of co-occurrence ( $Q_{w1} = 1785.45$ ,  $df_1 = 20$ ,  $p < .001$ ,  $I^2_1 = 98.88$ ;  $Q_{w2} = 1012.32$ ,  $df_2 = 16$ ,  $p < .001$ ,  $I^2_2 = 98.42$ ).

[Table 2 about here]

To further test for the individual effect sizes, analyses of the different combinations of the types of co-occurring victimization were conducted. As presented in Table 2, the findings showed a co-occurrence rate of 19.0% (95% CI [12.3%-28.1%],  $p < .001$ ) for child polyvictimization, 9.0% (95% CI [6.5%-12.4%],  $p < .001$ ) for CAN and IPV, and 6.8% (95% CI [3.7%-12.3%],  $p < .001$ ) for IPV and ILA among the community samples. There was a percentage of overlap of 38.6% (95% CI [30.5%-47.4%],  $p < .05$ ) for CAN and IPV for the clinical samples.

### **Odds Ratios of Violence Victimization as the Associated Factor of the Other Forms of Victimization**

The effect sizes of any one type of violence victimization as the associated factor of the occurrence of the other type(s) of victimization were also evaluated; details of the findings are summarized in Table 3. Of the 59 studies, 21 cross-sectional studies provided sufficient data on the relevant associations. Overall, the findings demonstrated that the odds ratio of another type(s) of victimization being present when one type was present, a situation referred to as polyvictimization, was 6.01 ( $p < .001$ ). When breaking down the specific combinations of co-occurring victimization, it was found that the odds ratio for the co-occurrence of IPV and CAN was 3.91 ( $p < .001$ ). Similarly, the odds ratio for the co-occurrence of IPV and ILA was 5.02 ( $p < .01$ ), while that of CAN and ILA was 3.94 ( $p < .001$ ). Another five longitudinal studies included in this meta-analysis provided data for the computation of the overall odds ratio for the risks of CAN being present when IPV was reported. The results show that the

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odds ratio was 3.64 ( $p < .001$ ), indicating that, when a family reports IPV, the odds of CAN occurring within the same family could be greater than three-fold.

[Table 3 about here]

### **Odds Ratios of Individual and Family Factors Associated with Family Polyvictimization**

Several studies examined whether or not individual characteristics or family factors are associated with family polyvictimization. Table 4 summarizes the odds ratios and other relevant findings of these. The results show that family polyvictimization is significantly associated with higher odds of a victim experiencing depression (OR = 2.35,  $p < .01$ ) and symptoms of PTSD (OR = 2.04,  $p < .01$ ). However, other factors, such as the victim's age, gender, socio-economic status (SES), and addictive behaviors, were not found to be significantly associated with polyvictimization in this analysis (all  $p > .05$ ).

[Table 4 about here]

### **Publication Bias**

In the funnel plot shown in Figure 3, the X-axis shows the logit rate of co-occurrences of family victimization and the Y-axis depicts the standard errors. Because the studies included in the current meta-analysis generally used a very large sample size, most of them were spread symmetrically at the top, around the combined result. Only two studies (Haarr, 2007; Boeckel, Blasco-Ros, Grassi-Oliveira, & Martínez, 2014) with smaller sample sizes and showing low co-occurrence rates fell at the bottom of the graph. Considering the high statistical power of the studies included and the symmetrical shape of the graph, the possibility of publication bias is low.

[Figure 3 about here]

## **Discussion**

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3 Our findings show that, the prevalence of overlapping family victimization among [the](#)  
4 [clinical sample](#) could be almost four times greater than that among the general population  
5 (36.0% versus 9.7%). This result highlights the possibility that one type of family  
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7 victimization could be a significantly associated factor or indicator of other types of  
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9 victimization among members of the same family. Further results from the analyses of the  
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11 odds ratios of polyvictimization show that, when one reports the experience of one type of  
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13 victimization, the likelihood of reporting other type(s) of victimization could be six times  
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15 higher, compared to individuals who do not report victimization. This is consistent with  
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17 findings from previous research that suggest that the presence of one type of victimization  
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19 could be predictive of other types of victimization (Chan, 2014; Tajima, 2004). There are  
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21 many possible mechanisms underlying the strong associations between different types of  
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23 family victimization, one of which could be the spill over effect from one family member to  
24  
25 another. For example, the strong association between IPV and CAN may be rooted in the  
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27 weakened ability and lower energy level among violent or victimized parents in regard to  
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29 protecting, supervising, and taking care of their children, and in turn might result in  
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31 immediate CAN or subsequent CAN via insecure attachment to parents, hampered parent-  
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33 child relationships, and a lack of parent supervision (Chan, 2014; Cooney et al., 2006).  
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43 Aside from the well-studied association between IPV and CAN, this study also  
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45 revealed an increased likelihood of ILA when IPV or CAN is reported (about five times  
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47 higher and four times higher than non-victims, respectively). It was observed that the  
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49 majority of elderly people live with their children in China and other Asian countries, where  
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51 they are expected to help the married children in regard to chores and childcare (Chen, Lo,  
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53 Zhu, Cheung, Chan, & Ip, 2018). The caregiving for the co-resided elderly is found to be  
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55 associated with lower marital quality between the adult couples, and more conflicts between  
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57 children and elders in the same house (Chen et al., 2018). It was suggested in a past study  
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3 that IPV and ILA might form a vicious cycle (McKay, 1994). For example, ILA between in-  
4 laws over childrearing issues may increase the likelihood of worsened partner relationships,  
5  
6 laws over childrearing issues may increase the likelihood of worsened partner relationships,  
7  
8 further leading to partner conflicts and subsequent IPV. In worse situations, IPV may then  
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10 escalate to more severe in-law violence (McKay, 1994). The distress resulting from violent  
11  
12 in-law relationships may then reduce the caregivers' ability to take care of the children in the  
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14 family and the negative emotions may also contribute to overreacting and abusive behaviors  
15  
16 toward children, leading to a heightened risk of CAN (Slep & O'Leary, 2001).

19 Another possible mechanism for the high co-occurrence rate and strong association  
20  
21 between different types of family victimization may be the shared features, backgrounds, and  
22  
23 surrounding environments of members of the same family. Results in this meta-analysis  
24  
25 showed that depression and PTSD were more likely to appear in polyvictimized families than  
26  
27 in other families, which is in line with past findings that posit that more depressive and PTSD  
28  
29 symptoms were found among polyvictims than victims of any single type of victimization  
30  
31 (Stover, Urdahl, & Easton, 2012). The associations between family polyvictimization and  
32  
33 these mental health problems could be bi-directional; victims may show more depressive  
34  
35 and/or PTSD symptoms after the violent incidents, whereas depression and/or PTSD may  
36  
37 increase the risk of being victimized by violence (Kahn, Wilson, & Wise, 2005). In addition,  
38  
39 the shared experiences of family disruption and dysfunction may moderate the positive  
40  
41 associations between negative health consequences and problematic parental practices and  
42  
43 interpersonal communications (Slep & O'Leary, 2001), leading to a greater risk of  
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45 victimization within the same family. The demographic factors, including age, gender, or  
46  
47 addictive behaviors, were found to have no significant association with family  
48  
49 polyvictimization. The non-significant results may possibly be related to the wide variance of  
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51 research methods and samples across the studies examined, as well as the relatively low  
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53 number of studies that provided sufficient data for the analyses ( $n = 2-6$ ). Therefore, one  
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3 should be cautious before drawing a conclusion that demographic factors are not related to  
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5 family polyvictimization just because of the present findings. Clearly, future empirical  
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7 research should include the exploration of different individual and family characteristics  
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9 when studying the co-occurrence of family victimization or family polyvictimization, in  
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11 order to provide more scientific evidence.  
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15 Concerning the wide variance in the co-occurrence rates and odds ratios found in the  
16  
17 present study, it was observed that, apart from the differences in study samples and  
18  
19 procedures, one of the most likely contributors of this variance might be the lack of clear  
20  
21 definition and operationalization of victimization in many studies. Studies using community  
22  
23 samples often employ self-reported retrospective measures to capture victimization and there  
24  
25 is no reason to overlook the influence of reporting biases that could lead to both under-  
26  
27 reporting and over-reporting (Stoltenborgh et al., 2011). On the other hand, professional  
28  
29 reports or informant observations are not free of problems. Although they do not rely on  
30  
31 potentially biased respondent memories, a possible weakness may appear when some forms  
32  
33 of victimization are relatively less “visible” to outsiders and more difficult for professionals  
34  
35 to detect (e.g., sexual violence) (Stoltenborgh et al., 2011).  
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40  
41 Apart from the variance in definitions and operationalization of family victimization  
42  
43 and polyvictimization, an issue concerning the informants of the victimization incidents was  
44  
45 also observed in this study. When studying multiple types of victimization on different  
46  
47 members within the same family, it would be optimal to inquire all potential victims and  
48  
49 assess their experiences individually. Yet, given the time and manpower limitations, it may  
50  
51 not always be possible, especially when involving a large sample size or respondents with  
52  
53 difficulties report (e.g. small children and elderly people). In such cases, adult proxy reports  
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55 might be a feasible choice. Indeed, past research has demonstrated proxy reports could  
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57 achieve good agreement with self-reports, and proxy reports may serve as a reliable  
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3 alternative for reporting violence (Chan, 2011b, 2012a, 2012b, 2015b). Future studies may  
4  
5 consider the use of adult proxy reports when studying family victimization and  
6  
7 polyvictimization, especially when individual assessments on all family members are not  
8  
9 feasible.

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11 Findings of this study provide critical implications for health professionals. Child  
12  
13 protection services, intimate partner violence shelters, and elderly care centres may screen the  
14  
15 service users with more types of family victimization as possible to detect at-risk families.  
16  
17 Also, the significant relations between family poly-victimization and depression and PTSD  
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19 symptoms of the poly-victims, provide insight to the potential effectiveness of identifying at-  
20  
21 risk families and victims in mental health clinics or services. The findings also provide  
22  
23 evidence on supporting the holistic family-oriented approach to facilitate the delivery of  
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25 whole-family interventions.  
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### 33 **Limitations and Future Research**

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35 The relatively small number of informant studies (especially in regard to analyses of  
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37 family polyvictimization with more than two types of co-occurring victimization) and the  
38  
39 heterogeneity in the studies may lead to the inability of this meta-analysis to fully explain the  
40  
41 wide variance in the co-occurrence of family victimization. Among the 59 eligible studies,  
42  
43 only 38 provided sufficient data for the combination of co-occurrence rates. Some of the  
44  
45 present analyses could only be based on fewer than five informant studies and it is obvious  
46  
47 that more research on family polyvictimization is urgently needed before researchers can  
48  
49 reach a reliable conclusion in regard to this issue. Another limitation concerns about the  
50  
51 failure to include more studies focusing on the co-occurrence of more than two types of  
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53 family victimization, which was due to the limited number (only one) of existing study in the  
54  
55 literature. With regard to this limitation, we adopted the definition from previous studies that  
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polyvictimization was “two or more types of violence rather than repeatedly episodes of one single violence” (e.g. Turner, Finkelhor & Ormrod, 2010), and included studies on two types of victimization in our meta-analysis. Yet, we believe the use of the stricter definition of polyvictimization (i.e., the co-occurrence of three types of more victimization in the family) would provide more insights to the violence field, and urge future research to consider including more than two types of family victimization. Besides, there may exist other confounding factors that have not been included in the present meta-analysis. These possible factors may include personality characteristics, relationship factors among family members, and community or neighbourhood factors. There may also be other types of family victimization that have not been included, such as sibling victimization and grandparent-grandchild violence. However, research on the co-occurrence of other forms of family victimization was not available during the current literature search process. Future research may further explore these different types of victimization and extend this study to include more possible correlates and associated factors. This meta-analysis included only English publications. It is also possible that relevant studies may be published in other languages, such as French, Chinese, and Japanese, and were excluded from the literature search process. The study should have included journals or databases in languages other than English. However, after a thorough consideration of the time and manpower resources available when this study was conducted, a balance had to be found between completeness and effectiveness. Thus, only English publications were included in this initial meta-analysis of family polyvictimization. Future reviews and meta-analytic studies may consider the inclusion of informant studies in other languages. Almost all informant studies included in this meta-analysis failed to investigate the dose effect of victimization. Instead, they only used an approach to capture either the presence or the absence of the specific types of victimization examined. The investigation of influences of the frequency and severity of victimization is



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one of the fastest growing trends in the field (Hamby, McDonald, & Grych, 2014). It is of great importance to conduct more co-occurrence studies with a focus on the dose effect of family victimization in the future.

For Peer Review

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Table 1  
*Characteristics of the Studies Included in the Overall Prevalence Synthesis*

| Ref. no.                              | Study                   | Violence        |                 |                 | Site                | Sample |          |        |                |   | Informant                        | Correlates             |                       | Q |
|---------------------------------------|-------------------------|-----------------|-----------------|-----------------|---------------------|--------|----------|--------|----------------|---|----------------------------------|------------------------|-----------------------|---|
|                                       |                         | 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup> |                     | Type   | Sampling | Size   | Female ratio % | Age group and mean age                                    |                                  | Individual             | Family                |   |
| <b>Studies with community samples</b> |                         |                 |                 |                 |                     |        |          |        |                |   |                                  |                        |                       |   |
| Family polyvictimization              |                         |                 |                 |                 |                     |        |          |        |                |   |                                  |                        |                       |   |
| 1.                                    | Chan (2017)             | CAN             | IPV             | EA              | Mainland China & HK | ComS   | PS       | 7,466  | 54.9           | 2-17<br>M = 11.5 (SD = 4.7)                               | 2-14 by caregiver;<br>15-17 self | Alco; Subs;<br>PTSD; D | -                     | 5 |
| Child polyvictimization               |                         |                 |                 |                 |                     |        |          |        |                |   |                                  |                        |                       |   |
| 2.                                    | Chan (2013)             | Child-poly      | -               | -               | Mainland China & HK | ComS   | PS       | 18,341 | 46.7           | 15-17<br>M = 15.9 (SD = 0.1)                              | Self                             | PTSD; D                | -                     | 4 |
| 3.                                    | Chan (2014)             | Child-poly      | -               | -               | Mainland China & HK | ComS   | PS       | 18,341 | 46.7           | 15-17<br>M = 15.9 (SD = 0.9)                              | Self                             | -                      | -                     | 5 |
| 4.                                    | Finkelhor et al. (2007) | Child-poly      | -               | -               | US-National         | ComS   | PS       | 2,030  | -              | 2-17  | 2-9 by caregiver;<br>10-17 self  | Gender;<br>Age         | SES; Family Structure | 4 |
| 5.                                    | Le et al. (2015)        | Child-poly      | -               | -               | Vietnam-Hanoi       | ComS   | PS       | 1,606  | 45.6           | ≥15<br>M = 16.5 (SD = 1.0)                                | Self                             | -                      | -                     | 5 |
| 6.                                    | Turner et al. (2010)    | Child-poly      | -               | -               | US-National         | ComS   | PS       | 4,053  | -              | 2-17  | 2-9 by caregiver;<br>10-17 self  | Gender                 | SES; Family Structure | 4 |
| CAN & IPV                             |                         |                 |                 |                 |                     |        |          |        |                |   |                                  |                        |                       |   |
| 7.                                    | Boeckel et al. (2014)   | CAN             | IPV             | -               | Spain-Valencian     | ComS   | PS       | 155    | 100            | IPV: M = 43.9 (SD = 10.8)<br>No IPV: M = 46.9 (SD = 10.9) | Self                             | -                      | -                     | 5 |
| 8.                                    | Chan (2011a)            | CAN             | IPV             | -               | HK                  | ComS   | PS       | 2,363  | 52.3           | At or above 20<br>M = 45                                  | Parent                           | -                      | -                     | 5 |
| 9.                                    | Chan (2015)             | CAN             | IPV             | -               | HK                  | ComS   | PS       | 5,841  | -              | Grade 7-12 (ages 9-18)                                    | Self                             | -                      | -                     | 5 |
| 10.                                   | Chan et al. (2011b)     | CAN             | IPV             | -               | HK                  | ComS   | PS       | 2,062  | 49.0           | 12-17   | Self                             | Gender                 | -                     | 5 |
| 11.                                   | Chang et al. (2008)     | CAN             | IPV             | -               | US-NC & SC          | ComS   | CS       | 1,149  | 100            | 0-18<br>M = 8.8 (SD = 5.1)                                | Parent                           | -                      | -                     | 5 |

|     |                        |     |     |   |                 |      |    |       |   |                              |      |   |   |   |
|-----|------------------------|-----|-----|---|-----------------|------|----|-------|---|------------------------------|------|---|---|---|
| 12. | DeGue & Dilillo (2009) | CAN | IPV | - | US-CA & NE & OH | ComS | PS | 860   | - | 17-37<br>M = 20.1 (SD = 1.7) | Self | - | - | 4 |
| 13. | Devires et al. (2016)  | CAN | IPV | - | Uganda-Luwero   | ComS | PS | 3,427 | - | 11-14                        | Self | - | - | 4 |

Table 1 (continued)

| Ref. no.                                      | Study                   | Violence        |                 |                 | Site                | Type     | Sampling | Sample |                |                              | Informant                | Correlates           |        | Q |
|---|-------------------------|-----------------|-----------------|-----------------|---------------------|----------|----------|--------|----------------|------------------------------|--------------------------|----------------------|--------|---|
|   |                         | 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup> |                     |          |          | Size   | Female ratio % | Age/Age group                |                          | Individual           | Family |   |
| <b>Studies with community samples</b>         |                         |                 |                 |                 |                     |          |          |        |                |                              |                          |                      |        |   |
| 14.   | Levesque et al. (2007)  | CAN             | IPV             | -               | Canada-Quebec       | ComS     | PS       | 3,148  | 100            | M = 39 (SD = 7.4)            | Self                     | -                    | -      | 5 |
| 15.   | Shen (2009)             | CAN             | IPV             | -               | Taiwan              | ComS     | PS       | 1,924  | 47             | 16-40<br>M = 20.5 (SD = 1.7) | Self                     | PTSD                 | -      | 5 |
| 16.   | Tajima (2004)           | CAN             | IPV             | -               | US-National         | ComS     | PS       | 2,733  | -              | IPV M = 33.4 (SD = 2.0)      | Parent                   | Gender; Age; Subs; D | -      | 4 |
| 17.   | Tiyyagura et al. (2018) | CAN             | IPV             | -               | US-National         | ComS     | CS       | 2,890  | -              | M = 14.1 months              | Clinical team assessment | -                    | -      | 4 |
| <b>IPV &amp; ILA</b>                          |                         |                 |                 |                 |                     |          |          |        |                |                              |                          |                      |        |   |
| 18.   | Chan et al. (2009)      | IPV             | ILA             | -               | HK                  | ComS     | PS       | 3,245  | 100            | 18-50<br>M = 30.8 (SD = 4.9) | Self                     | -                    | -      | 5 |
| 19.   | Haarr (2007)            | IPV             | ILA             | -               | Tajikistan-National | ComS     | PS       | 400    | 100            | 17-49<br>M = 33.5            | Self                     | -                    | -      | 5 |
| 20.   | Raj et al. (2011)       | IPV             | ILA             | -               | India-Mumbai        | ComS     | PS       | 1,038  | 100            | 16-35<br>M = 24.6 (SD = 4.4) | Self                     | -                    | -      | 5 |
| 21.   | Silverman et al. (2016) | IPV             | ILA             | -               | India-Mumbai        | ComS     | PS       | 1,061  | 100            | 15-35                        | Self                     | -                    | -      | 5 |
| <b>Studies with clinical samples</b>          |                         |                 |                 |                 |                     |          |          |        |                |                              |                          |                      |        |   |
| Child polyvictimization among sample with CAN |                         |                 |                 |                 |                     |          |          |        |                |                              |                          |                      |        |   |
| 22.   | Segura et al. (2016)    | CAN             | Child-poly      | -               | Spain-Northeastern  | CliS-CAN | CS       | 127    | 42.6           | 12-17<br>M = 14.6 (SD =      | Self                     | Gender; Age          | SES    | 5 |

|     |  |     |     |   |               |          |    |       |      |                          |                  |                |                     |   |
|-----|--|-----|-----|---|---------------|----------|----|-------|------|--------------------------|------------------|----------------|---------------------|---|
|     |  |     |     |   |               |          |    |       |      | 1.6)                     |                  |                |                     |   |
|     | CAN & IPV among clinical sample with IPV |     |     |   |               |          |    |       |      |                          |                  |                |                     |   |
| 23. | Kernic et al. (2003)                     | CAN | IPV | - | US-Seattle    | CliS-IPV | CS | 167   | 100  | 2-17                     | Parent           | -              | -                   | 5 |
| 24. | O-Keefe (1995)                           | CAN | IPV | - | US-Not Stated | CliS-IPV | CS | 184   | 49.0 | 7-13<br>M = 9.5          | Mother and child | Gender;<br>Age | Family<br>Structure | 5 |
| 25. | Rumm et al. (2000)                       | CAN | IPV | - | US-National   | ComS     | CS | 1,745 | -    | Soldier, mostly<br>25-31 | Army database    | -              | -                   | 4 |
| 26. | Zolotor et al. (2007)                    | CAN | IPV | - | US-NC & SC    | CliS-IPV | CS | 1,232 | 48.2 | 0-17                     | Caregiver        | -              | -                   | 5 |

Table 1 (continued)

| Ref. no.                                 | Study                    | Violence        |                 |                 | Site          | Type     | Sample   |       |                | Informant                               | Correlates                               |            | Q                |        |
|--|--------------------------|-----------------|-----------------|-----------------|---------------|----------|----------|-------|----------------|---|--|------------|------------------|--------|
|  |                          | 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup> |               |          | Sampling | Size  | Female ratio % |   | Age/Age group                            | Individual |                  | Family |
| <b>Studies with clinical samples</b>     |                          |                 |                 |                 |               |          |          |       |                |   |  |            |                  |        |
| CAN & IPV among clinical sample with CAN |                          |                 |                 |                 |               |          |          |       |                |   |  |            |                  |        |
| 27.                                      | Antle et al. (2007)      | IPV             | CAN             | -               | US-KY         | CliS-CAN | CS       | 100   | -              | Not Stated                              | Caseworker                               | -          | -                | 4      |
| 28.                                      | Beeman et al. (2001)     | IPV             | CAN             | -               | US-Midwest    | CliS-CAN | CS       | 172   | -              | Not Stated                              | Police report                            | -          | -                | 4      |
| 29.                                      | Browne & Hamilton (1999) | IPV             | CAN             | -               | US-Not Stated | CliS-CAN | CS       | 255   | 58.0           | IPV victim: 18-53<br>Perpetrator: 15-56 | Child abuse and domestic violence record | -          | -                | 5      |
| 30.                                      | Casanueva et al. (2009)  | IPV             | CAN             | -               | US-National   | CliS-CAN | PS       | 1,236 | -              | 0-14                                    | Caseworker                               | -          | -                | 4      |
| 31.                                      | English et al. (2009)    | IPV             | CAN             | -               | US-National   | CliS-CAN | CS       | 554   | -              | M = 35.2 (SD = 10.4)                    | Caregiver                                | -          | -                | 5      |
| 32.                                      | Hartley (2002)           | IPV             | CAN             | -               | US-IA         | CliS-CAN | CS       | 180   | -              | Not Stated                              | Caseworker and official record           | Alco       | -                | 4      |
| 33.                                      | Hartley (2004)           | IPV             | CAN             | -               | US-IA         | CliS-CAN | CS       | 159   | -              | IPV: M = 2.76<br>No IPV: M = 5.15       | Caseworker                               | -          | -                | 4      |
| 34.                                      | Hazen et al. (2004)      | IPV             | CAN             | -               | US-National   | CliS-CAN | CS       | 3,612 | 100            | 15-77<br>M = 31.9                       | Caregiver and caseworker                 | -          | Family Structure | 5      |
| 35.                                      | Hazen et al. (2006)      | IPV             | CAN             | -               | US-National   | CliS-CAN | CS       | 2,020 | 49.5           | 4-14<br>M = 8.64 (SD = 0.13)            | Caregiver                                | -          | -                | 5      |
| 36.                                      | Kellogg &                | IPV             | CAN             | -               | US-TX         | CliS-    | CS       | 340   | -              | 7-19                                    | Self                                     | -          | -                | 4      |



|   |                             |     |     |   |               |          |    |       |      |                     |      |   |   |   |
|---|-----------------------------|-----|-----|---|---------------|----------|----|-------|------|---------------------|------|---|---|---|
| 5 | Menard                      |     |     |   |               | CAN      |    |       |      | M = 12.7            |      |   |   |   |
| 6 | (2003)                      |     |     |   |               |          |    |       |      |                     |      |   |   |   |
| 7 | 37. McGuigan & Pratt (2001) | IPV | CAN | - | US-Not Stated | CliS-CAN | CS | 2,544 | 100  | M = 20.9 (SD = 5.2) | Self | - | - | 5 |
| 8 | 38. Milaniak & Widom (2015) | IPV | CAN | - | US-Midwest    | CliS-CAN | PS | 1,196 | 49.0 | M = 29.2 (SD = 3.8) | Self | - | - | 5 |

*Note.* Alco = alcohol dependence; CA = California; CAN = child abuse and neglect; CliS-CAN = clinical CAN sample; CliS-IPV = clinical IPV sample; ComS = community sample; CS = convenience sampling; D = depression; EA = elder abuse; HK = Hong Kong; IA = Iowa; ILA = in-law abuse; IPV = intimate partner violence; KY = Kentucky; M = mean; NC = North Carolina; NE = Nebraska; OH = Ohio; PS = probability sampling; Q = quality score; SC = South Carolina; SES = socio-economic status; Subs = substance dependence; TX = Texas.

For Peer Review

Table 2  
*Event Rates of Different Types of Polyvictimization*

| Group  | No. of studies                    | Event rate % [95% CI] | Heterogeneity        |           |          |                       |       |
|--------|-----------------------------------|-----------------------|----------------------|-----------|----------|-----------------------|-------|
|        |                                   |                       | <i>Q</i>             | <i>df</i> | <i>p</i> | <i>I</i> <sup>2</sup> |       |
| Type 1 | Family polyvictimization          | 1                     | 2.5*** [0.8, 7.4]    | 0.00      | 0        | 1.000                 | 0.00  |
|        | Child polyvictimization           | 5                     | 19.0*** [12.3, 28.1] | 339.73    | 4        | < .001                | 98.82 |
|        | CAN & IPV                         | 11                    | 9.0*** [6.5, 12.4]   | 579.11    | 10       | < .001                | 98.27 |
|        | IPV & ILA                         | 4                     | 6.8*** [3.7, 12.3]   | 119.43    | 3        | < .001                | 97.49 |
|        | Total                             | 21                    | 9.7*** [7.4, 12.7]   | 1785.45   | 20       | < .001                | 98.88 |
| Type 2 | Child polyvictimization among CAN | 1                     | 8.3** [2.1, 27.7]    | 0.00      | 0        | 1.000                 | 0.00  |
|        | CAN & IPV among CAN or IPV        | 16                    | 38.6* [30.5, 47.4]   | 890.66    | 15       | < .001                | 98.32 |
|        | Total                             | 17                    | 36.0** [28.8, 43.9]  | 1012.32   | 16       | < .001                | 98.42 |

Note. CAN = child abuse and neglect; ILA = in-law abuse; IPV = intimate partner violence; Type 1 = polyvictim among total sample (community samples); Type 2 = one type of victim in the other type of victim (clinical samples).

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

Table 3  
*Odds Ratios of the Associations between Different Types of Violence Victimization*

| Associated victimization | No. of studies | Random effect size [95% CI] | <i>Q</i> | <i>df</i> | <i>p</i> | <i>I</i> <sup>2</sup> |
|--------------------------|----------------|-----------------------------|----------|-----------|----------|-----------------------|
| Cross-sectional studies  |                |                             |          |           |          |                       |
| CAN & IPV                | 13             | 3.91*** [3.07, 5.56]        | 194.66   | 12        | 0.00     | 93.84                 |
| ILA & CAN                | 2              | 3.94*** [2.31, 6.70]        | 3.20     | 1         | 0.07     | 68.78                 |
| IPV & ILA                | 5              | 5.02** [3.04, 8.47]         | 128.30   | 4         | 0.00     | 96.88                 |
| EA & child-poly          | 1              | 7.50*** [1.33, 42.19]       | 0.00     | 0         | 1.00     | 0.00                  |
| Total                    | 21             | 6.01*** [1.50, 21.50]       | 502.73   | 20        | 0.00     | 96.02                 |
| Longitudinal studies     |                |                             |          |           |          |                       |
| IPV to CAN               | 5              | 3.64*** [2.75, 4.83]        | 1.09     | 4         | 0.75     | 0.00                  |

*Note.* CAN = child abuse and neglect; EA = elder abuse; ILA = in-law abuse; IPV = intimate partner violence.

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

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5 Table 4  
6 *Odds Ratios of the Individual and Family Factors Associated with Polyvictimization*  
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| Associated factor    | No. of studies | Random effect size [95% CI] | <i>Q</i> | <i>df</i> | <i>p</i> | <i>I</i> <sup>2</sup> |
|----------------------|----------------|-----------------------------|----------|-----------|----------|-----------------------|
| Gender               |                |                             |          |           |          |                       |
| Male                 | 5              | 2.53 [0.35, 18.53]          | 0.25     | 4         | 0.99     | 0.00                  |
| Female               | 6              | 2.83 [0.53, 15.02]          | 0.55     | 5         | 0.99     | 0.00                  |
| Age (mean)           | 4              | 1.18 [0.73, 1.91]           | 3.97     | 3         | 0.26     | 24.48                 |
| Alcohol dependence   | 2              | 4.55 [0.07, 291.81]         | 0.03     | 1         | 0.86     | 0.00                  |
| Substance dependence | 2              | 1.05 [0.38, 2.90]           | 0.01     | 1         | 0.91     | 0.00                  |
| Depression           | 3              | 2.35** [1.29, 4.26]         | 12.47    | 2         | 0.00     | 83.96                 |
| PTSD                 | 3              | 2.04** [1.19, 3.48]         | 31.23    | 2         | 0.00     | 93.60                 |
| SES                  |                |                             |          |           |          |                       |
| Above average        | 3              | 4.29 [0.21, 89.66]          | 0.17     | 2         | 0.92     | 0.00                  |
| Average              | 3              | 3.43 [0.29, 40.28]          | 0.11     | 2         | 0.95     | 0.00                  |
| Below average        | 3              | 2.69 [0.10, 72.73]          | 0.07     | 2         | 0.97     | 0.00                  |
| Family structure     |                |                             |          |           |          |                       |
| Single parent        | 4              | 6.03 [0.18, 205.98]         | 0.13     | 3         | 0.99     | 0.00                  |
| Two parents          | 4              | 1.95 [0.32, 11.84]          | 0.18     | 3         | 0.98     | 0.00                  |

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## Summary Tables

Summary Table 1: Critical Findings

| Aspect  | Finding   |
|---|---|
| Combined co-occurrence rate of family violence                    | The combined co-occurrence rate of family violence among the general population was estimated to be 9.7%.<br>The combined percentage of the overlap of family violence among the clinical sample, with at least one member reporting violence, was estimated as 36.0%.                              |
| Significant associations among different types of family violence | The combined odds ratio of the presence of other types of violence when one was reported is 6.01 ( $p < .001$ ).  |
| Correlates of family polyvictimization                            | Depression and posttraumatic stress disorder (PTSD) were two significant correlates of family polyvictimization.<br>Other individual or family factors were not significantly associated with family polyvictimization. This may be due to the limitations of available data from existing studies. |

Summary Table 2: Implications

| Area                | Major implication  |
|---------------------|--|
| Policy and practice | The need for the early detection and identification of other victims from the same family when one victim is detected.<br>The need for the prevention of and intervention in regard to family polyvictimization using a family approach, in which all members of the same family are treated as a unit for service provision.                    |
| Research            | More research providing evidence on family polyvictimization and the co-occurrence of family violence is obviously needed. This is especially urgent in regard to violence other than the co-occurrence of IPV and CAN.<br>More research on the dose effect of family polyvictimization is needed, as there is none available in the literature. |

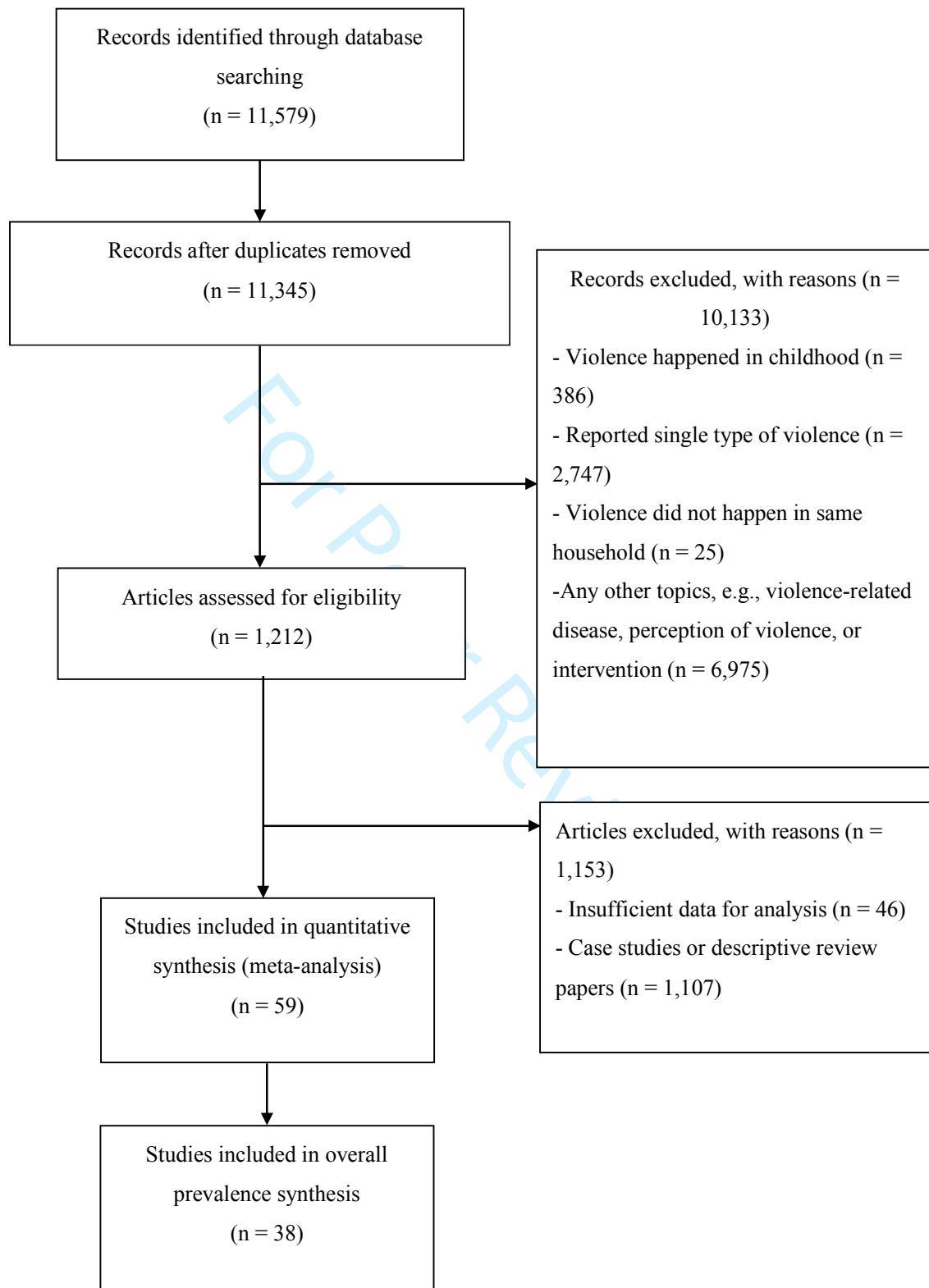
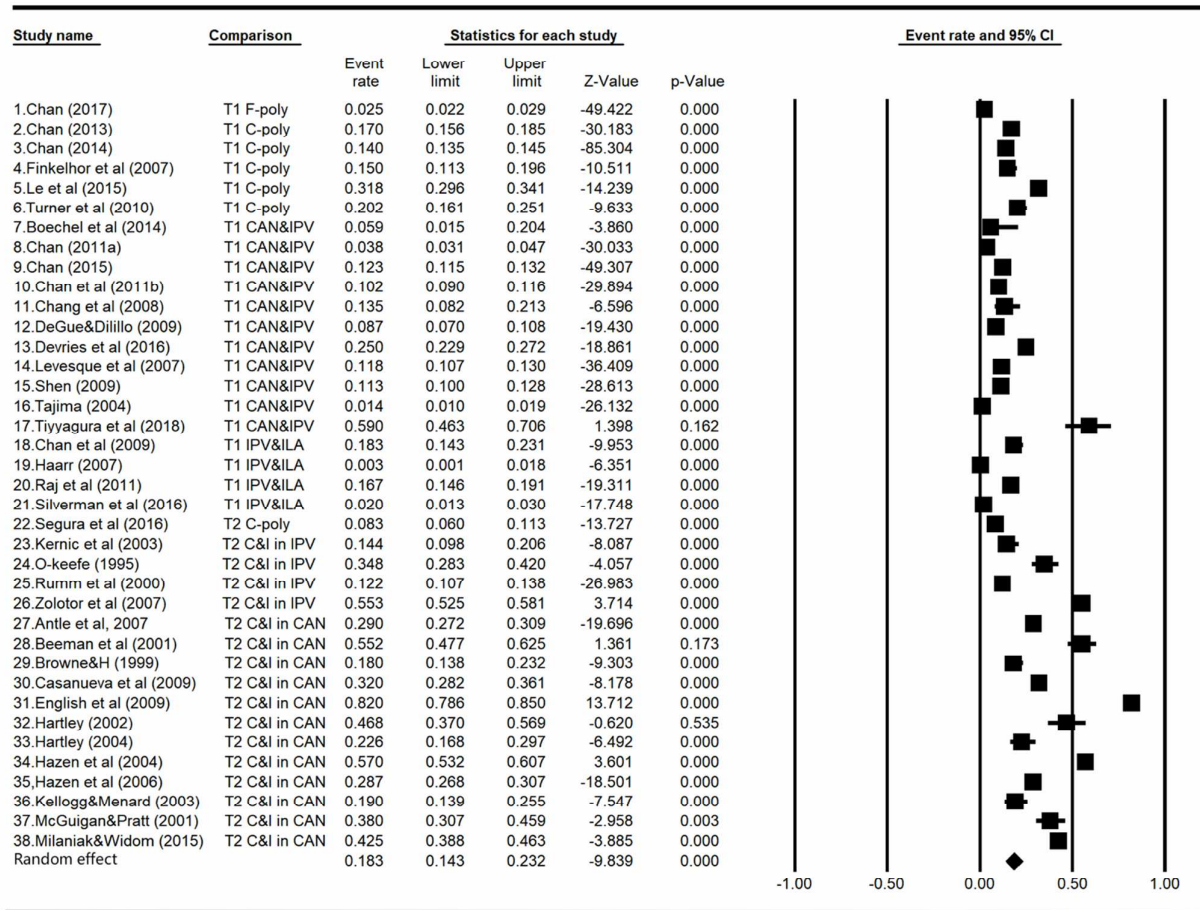


Figure 1. Summary of the search results and article selection procedures.



Heterogeneity:  $Q = 5561.195$ ,  $df = 37$ ,  $p = 0.000$ ,  $I^2 = 99.335$ .

Note. CAN = child abuse and neglect; ILA = in-law abuse; IPV = intimate partner violence; T1 = polyvictim among total sample; T2 = one type of victim in the other sample.

Figure 2. Co-occurrence rates of family violence among the included studies.

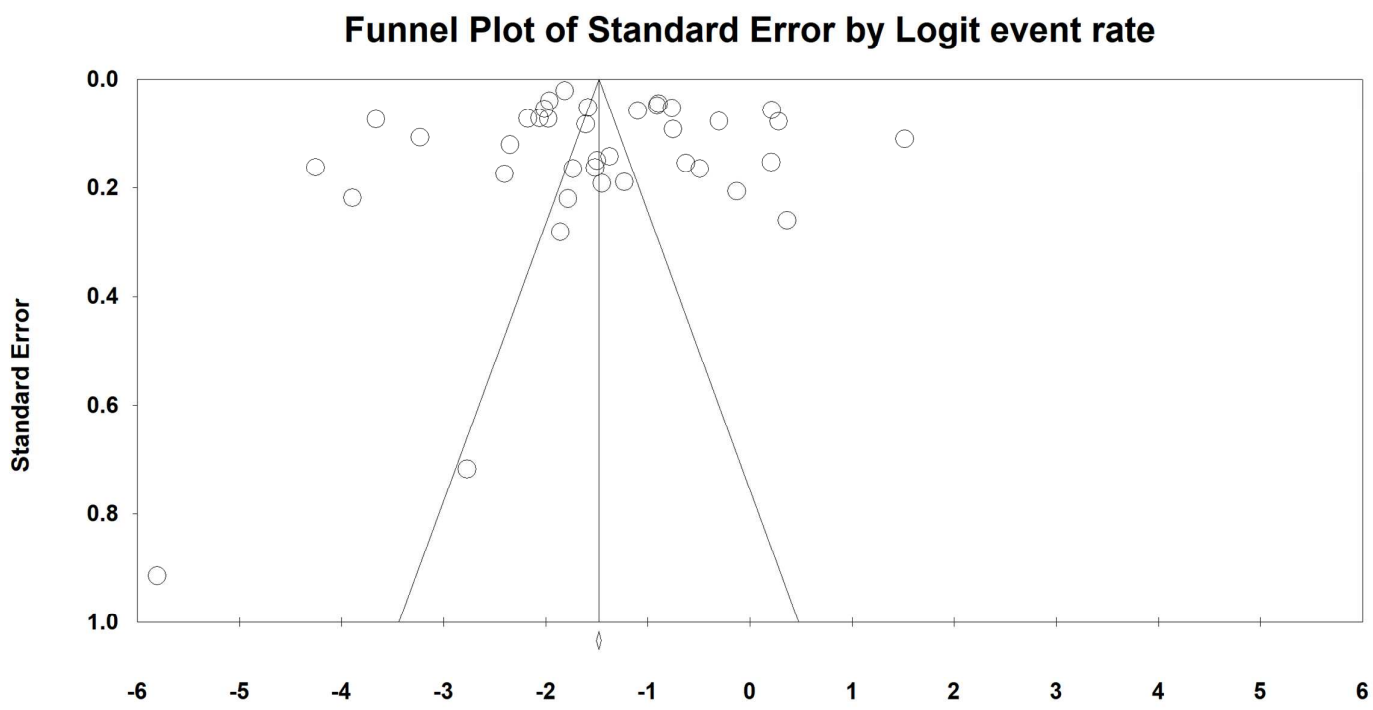


Figure 3. Funnel plot of standard error by logit event rate