

**An Integrative Examination of Childhood Multiple Victimization Through
Ecological Lenses**

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This thesis is dedicated to Robert Ducharme, whose strength and perseverance is an inspiration.

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Content of thesis and contributions of authors

This dissertation follows a monograph format and is divided into two parts: (1) The Frequency and Co-occurrence of Victimization Experiences and Associations to Psychosocial Difficulties and (2) Ecological Risk Models of Childhood Multiple Victimization. Part I of this thesis is currently in press¹. The writer of the thesis appears as first author and the research supervisor appears as co-author. The contribution of the authors is as follows: the writer of the thesis participated in every step of the project, including the review and synthesis of the literature, the design and conceptualization of the project, the ethics review board application, data collection, data analyses, and writing of the manuscripts. The thesis supervisor adopted a consultant role through all phases of the project and oversaw the abovementioned research activities.

¹ Babchishin, L.K. & Romano, E. (in press). Evaluating the Frequency, Co-Occurrence, and Psychosocial Correlates of Childhood Multiple Victimization. *Canadian Journal of Community Mental Health*.

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Summary

The landscape of the childhood victimization literature is shifting, with a growing number of researchers emphasizing the importance of designing studies that account for and aim to disentangle the interconnections among victimization experiences. This is a notable contrast to the bulk of the scientific inquiry to date, which has tended to examine victimization experiences in isolation from one another and has created victimization-specific models of risk. On the other hand, the multiple victimization field aims to better understand the overlap among risk factors and the co-occurrence across victimization experiences to create general or non-specific risk models for childhood victimization. From this field emerged the concept of multiple victimization (defined as exposure to more than one type of victimization within a specified time period), that has been established as the unfortunate norm among victimized children.

The current dissertation was designed not only to help attain a better understanding of the phenomenon of childhood multiple victimization but also to contribute to our understanding of the frequency, co-occurrence, and risk (grounded in the ecological framework) of childhood multiple victimization. This dissertation addresses important shortcomings of the published literature, such as the scarcity of studies that account for the co-occurrence among victimization experiences, the limited victimization data on school-aged children and clinical samples, and the dearth of studies that test comprehensive risk models of multiple victimization. Caregivers of school-aged children ($N = 213$) in the Ottawa/Gatineau area participated in the online study, which involved the completion of a 30-minute questionnaire package that assessed their child's victimization experiences as well

as child (e.g., sex, age), family (e.g., caregiver psychosocial functioning, family functioning), and neighbourhood (e.g., safety) factors.

Results provided support for the ubiquitous nature of childhood multiple victimization (in the past year and lifetime) as well as for the common co-occurrence of various victimization experiences. Specifically, while a certain overlap was found across all victimization forms, conventional crimes and peer and/or sibling victimization co-occurred most often in this school-aged sample. In addition, victimization forms that may be qualified as “severe” (sexual victimization, Internet victimization, maltreatment) tended to co-occur with many additional forms and were rarely reported on their own. Findings highlighted the important associations between victimization exposure and psychosocial difficulties (anxiety, depression, aggression, and posttraumatic stress), and weighting techniques (i.e., weighting severe victimization forms more heavily) were not found to significantly contribute to better predictability of psychosocial difficulties. Turning to the risk models, a number of correlates of childhood multiple victimization were identified, most notably family variables including family dysfunction, caregiver psychosocial functioning, and substance use problems. However, a number of correlates (particularly socio-demographic factors) were also found to vary according to the victimization experiences assessed, providing partial support for the specificity assumption whereby victimization risk models vary according to the victimization form assessed. The theoretical and applied implications of research findings for efforts aimed at addressing childhood multiple victimization were also discussed.

Keywords: childhood multiple victimization; risk modelling; ecological framework; child development.

An Integrative Examination of Childhood Multiple Victimization Through Ecological Lenses

General Introduction

Victimization has been defined as harm that occurs to one individual due to another's violation of societal norms (Soler, Paretila, Kirchner, & Forns, 2012). Victimization *forms* are defined as broad and general categories of victimization (e.g., maltreatment) whereas victimization *types* correspond to specific victimization experiences (e.g., emotional abuse). Exposure to victimization is associated with myriad mental and physical health impairments (Johnson, Sheahan, & Chard, 2003; Leung, 2004; Silva, 2004; Sugarman, 1994; Wegman & Stetler, 2009). In addition, childhood victimization exerts a heavy cost on society as it impacts judicial, child welfare, social, educational, and health care systems. The societal cost of childhood victimization in Canada has been estimated to be over 15 billion dollars per year (Bowlus, Day, McKenna, & Wright 2003).

Prevalence and Psychosocial Impact of Childhood Victimization

Children (ages 0 to 18 years) are the most criminally victimized segment of our population (Finkelhor, 2009). They are at risk for experiencing many different forms of victimization, including maltreatment (e.g., caregiver-perpetrated physical, emotional, and sexual abuse, as well as neglect), exposure to family violence (e.g., intimate partner violence), sexual victimization (e.g., sexual assaults, flashing, statutory rape), peer and/or sibling victimization (e.g., physical and emotional bullying, gang assaults), Internet victimization (e.g., cyber-bullying, verbal sexual assault/misconduct), conventional crimes (e.g., bias assaults, kidnapping, physical assaults with or without weapons, property crimes such as robberies, thefts, and vandalism), and witness/indirect victimization (e.g., exposure

to community violence, witness to assaults, witness to murder, exposure to war; Finkelhor, 2009). In 2003, children represented 22% of the Canadian population and yet were victims in 60% of police-reported crimes (AuCoin & Beauchamp, 2005). Additional data indicate that children (< 18) in Canada are victims in 60% of all police-reported sexual assaults (other 40% accounted for by adults), 20% of physical assaults, and 20% of all other violations involving threat of or actual violence (e.g., robberies, harassment, extortion; Canadian Centre for Justice Statistics, 2008). The most frequent police-reported crimes against children are physical assaults (56%), followed by violations involving threat of or actual violence (26%), and finally, sexual assaults (18%). In addition, the majority of police-reported physical and sexual assaults against children are perpetrated by known acquaintances (70% and 75%, respectively), with family members being responsible for approximately 23% of police-reported physical assaults and 33% of sexual assaults for children (Ogrodnik, 2010). These data further suggest that the younger the age of the victim, the greater the likelihood of family involvement.

Research has consistently found associations between the various types of child maltreatment (e.g., neglect, physical abuse) and psychosocial as well as academic difficulties (e.g., DeBellis, 2001; Trocmé et al., 2001; 2005; 2010; Romano, Babchishin, Marquis & Frechette, in press). Similarly, research has consistently identified robust links between mental health impairments and peer victimization (Berger, 2007; Duncan, 1999; Hawker & Boulton, 2000), community violence (Lynch, 2003; Richters & Martinez, 1993), and child physical and sexual abuse (Trickett & McBride-Chang, 1995). Table 1 presents a summary of the main effects of childhood victimization across various domains. In short, there exists a wide range of possible associated impairments, including neurobiological, psychosocial, and

academic. Moreover, considerable research suggests that intra-familial victimization is associated with greater repercussions compared to extra-familial victimization (Finkelhor, 2009).

Childhood Multiple Victimization

Epidemiological data suggest that victimized children experience multiple victimization in that they are often simultaneously exposed to different types of victimization (Finkelhor, Ormrod, & Turner, 2007a; 2007b; 2007c; Gannon & Mihorean, 2004; Hamby & Grych, 2013; Turner, Finkelhor, & Ormrod, 2010). Indeed, multiple victimization among victimized children has been established as the rule rather than the exception, according to nationally-representative studies from the United States (e.g., 64.5% of children; Finkelhor et al., 2011). The empirical literature suggests that childhood victimization experiences are far from isolated or randomly-distributed events. Rather, pundits in the field argue that childhood victimization is better conceptualized as a *condition*, with victimization experiences coalescing in accordance with specific individual and systemic factors (Finkelhor, Turner, Hamby, & Ormrod, 2011). Of note, multiple victimization, including more severe multiple victimization known as poly-victimization (often referring the top 10th percentile of multiple victims), differs from chronic victimization, in which a child is repeatedly exposed to the same type of victimization, and from single victimization, in which a child is exposed to one victimization type in the same incident (Finkelhor et al., 2007a).

Although some children are resilient, multiple victimization often has truly devastating effects across multiple domains of functioning (e.g., emotional, interpersonal) on both a short- and long-term basis (Finkelhor, 2009). Children with a history of multiple

victimization have poorer academic functioning and greater aggression, depression, and trauma symptoms, compared to their non-multiply victimized counterparts (Babchishin, Romano & Moore, 2010; Finkelhor, Ormrod, Turner, & Hamby, 2005a; Finkelhor et al., 2007a, 2007b; Holt, Finkelhor, & Kantor, 2007; Nishina & Juvonen, 2005; Romano et al., in press; Saunders, 2003; Stevens, Ruggiero, Kilpatrick, Resnick & Saunders, 2005).

Exposure to victimization in one context, such as maltreatment, increases the risk for exposure to additional forms of victimization (e.g., sexual victimization, conventional crimes). Not surprisingly, multiply victimized children have been found to have higher levels of psychosocial difficulties, compared to children exposed to chronic or single victimization (Finkelhor et al., 2007a; 2007b; 2007c; Holt et al., 2007b; Stevens et al., 2005; Turner et al., 2010). Furthermore, the significant psychological impact of multiple victimization appears to be independent of prior psychosocial difficulties and prior victimization exposure (Boney-McCoy & Finkelhor, 1996). Not only is multiple victimization associated with a range of psychosocial difficulties, but these difficulties have also been found to persist over time. Finkelhor and colleagues (2007b) found that children who experienced three or more types of victimization in the past year were five times more likely to continue to experience multiple victimization one year later, compared to children who experienced fewer than three types of past-year victimization. Multiple victimization has also been found to increase the likelihood of a variety of non-victimization adverse life events, such as accidents or losses². This is especially true for children with numerous multiple victimization experiences

² Non-victimization adversities refer to accidents or losses such as illness requiring hospitalization as well as contextual adversities such as having a caregiver with substance abuse problems, who is unemployed, or has gone to prison. See pg. 62 for more information.

(i.e., poly-victims). For example, Finkelhor and colleagues (2011) found that poly-victimized children had an average 4.7 non-victimization lifetime adversities, compared to 2.1 for non-poly-victims.

Co-occurrence among victimization experiences. Recently, research has begun to document the different forms of victimization that commonly occur together. In a nationally-representative U.S. study, Finkelhor, Turner, Ormrod and Hamby (2009a) found that lifetime exposure to any victimization was associated with a two- to three-fold increase in risk of exposure to additional types of victimizations. Of note, these authors found that sexual victimization and maltreatment were particularly associated to additional victimization forms, even after controlling for differences in outcome incidence (i.e., base rates). The co-occurrence among victimization experiences has been found to be even greater in clinical samples. A recent study by Cyr and colleagues (2012), for example, examined the victimization experiences of 220 children between 2 to 17 years old who were involved in the Québec child welfare system. Findings indicated that 93% had experienced multiple victimization in the past year alone, with an average exposure to 3.3 different victimization types. In addition, research has found that rates of multiple victimization increase with age, and poly-victimized children (i.e., top 10th percentile of multiply victimized children in a given study sample) most often report sexual victimization and maltreatment (Finkelhor, Hamby, Ormrod, & Turner, 2005b; Finkelhor et al., 2007a).

The source of the co-occurrence among certain victimization experiences has been posited to be due to shared etiological pathways and contextual factors, such as cognitive processes within the child as well as attachment relationships (Grych & Swan, 2012). The ecological perspective is a helpful theoretical framework because it acknowledges the

dynamic and complex nature of childhood victimization. This framework emphasizes that the various systems within which a child is embedded (e.g., family, neighbourhood) and the characteristics of the child interact with and build upon each other to determine victimization risk and outcomes (Cicchetti & Lynch, 1993). Further, this framework acknowledges that victimization occurs within a dynamic and interactional context of adversity (Hamby & Grych, 2013). The ecological framework therefore encourages a more holistic evaluation of victimization, shifting focus from specific victimization experiences toward the various contexts in which these experiences may occur (Hooven, Nurius, Logan-Greene & Thompson, 2012).

Research that examines the interconnections among victimization experiences is essential. Indeed, it has been argued that "...for etiological models of interpersonal violence to be accurate, it will be critical to understand which forms of abuse, maltreatment, and trauma are most closely related and why" (Grych & Swan, 2012, p. 105). Research that recognizes and explores the co-occurrence among childhood victimization experiences could thus help expand our knowledge of the developmental and contextual factors that are associated with childhood victimization and, more generally, allow for a more accurate and nuanced portrait of the phenomenon (Finkelhor, 2009).

In addition, the field of multiple victimization has significant implications for the prevention of childhood victimization as it could help guide more comprehensive and integrated approaches to program development (Hamby, 2011). Hamby and Grych (2013) have noted that the vast majority of prevention programs target specific victimization forms (e.g., bullying, maltreatment) in isolation. While important and praise-worthy, these programs fail to account for the unfortunate reality that victimized children, in particular

those exposed to sexual victimization and maltreatment, are often victimized in other contexts. Grych and Swan (2012) argue that prevention programs that do not account for the interconnection among victimization forms may be less effective than programs that recognize the commonly co-occurring forms (e.g., a bullying prevention program that also accounts for the potential modelling from exposure to intimate partner violence). As multiple and poly-victimization are relatively new concepts, no treatment models aimed at addressing multiple victimization experiences have been formulated to date. Instead, researchers are beginning to research and formulate the theoretical underpinnings of multiple victimization experiences as well as change mechanisms that will help guide the development of such programs (Baynard, Hamby, & Turner, 2013).

Limitations of the Current Literature

Most research on childhood victimization focuses on a specific type without controlling for other types of victimization that individuals may also have experienced (Finkelhor et al., 2011). Indeed, research on childhood victimization has been described as fragmented and balkanized (Saunders, 2003), with different types of victimization examined in isolation by different groups of researchers (Hamby & Grych, 2013). As such, while existing literature has provided important and extensive information on the risk factors and developmental impacts associated with specific types of childhood victimization, it has been limited in terms of its ability to accurately capture the reality that, among children who experience victimization, most are exposed to multiple types of victimization.

Studies that examine only one or a few types of victimization are limited in that their findings may actually underestimate the true impact of childhood victimization because such studies overlook the full range of victimizations experienced by children (Turner, Finkelhor,

& Ormrod, 2006; Turner et al., 2010). In a similar vein, research that focuses on one specific type of victimization may over-estimate the impact of single victimization experiences. For example, recent studies have found that the associations between individual victimization types (e.g., bullying) and psychosocial difficulties (e.g., externalizing difficulties) are greatly attenuated and, in some cases, eliminated after controlling for multiple victimization status (Babchishin et al. 2010; Finkelhor et al., 2007a; 2007c; Turner et al., 2010). An additional limitation of research that examines single victimization types is that it is difficult to disentangle the risks and outcomes associated with a particular type of victimization. Indeed, outcomes and risk factors typically associated with a particular type of victimization may instead be the result of an unmeasured type of victimization, a cumulative result of exposure to different types of victimization not investigated, or an interplay between the various types of victimization experienced (Saunders, 2003; Turner et al., 2010). The scientific examination of victimization in isolation is also problematic from an applied perspective in that it hinders the identification of children with the greatest need for intervention, specifically multiply- and poly-victimized children (Finkelhor, 2009).

Summary and Research Aims

To advance our understanding of childhood victimization, researchers need to take into account the frequent co-occurrence of different victimization experiences (Finkelhor et al., 2005a; 2005b; Hamby & Grych, 2013). Indeed, a comprehensive understanding of childhood victimization would be beneficial as it might further improve the effectiveness of assessment strategies as well as preventive and treatment programs for children. A growing body of research, spearheaded by David Finkelhor at the University of New Hampshire, has emerged that examines children's exposure to multiple victimization. However, the field of

multiple victimization largely remains under-researched and U.S. focused. As such, information on the frequency, co-occurrence, risk, and psychosocial correlates associated with multiple victimization is limited (Hamby & Grych, 2013).

The overall objective of the current dissertation was to add new knowledge in the area of childhood multiple victimization, using a convenience sample of school-aged children in the Ottawa/Gatineau region (Canada). While limited, past research has generally focused on U.S. samples, has covered a broad developmental period (2-17 years old), and has only relied on community samples (Hamby & Grych, 2013). As such, our understanding of multiple victimization in school-aged and clinical samples remains relatively limited. Given that children of varying ages often react quite differently to victimization (Finkelhor, 2009; Finkelhor & Dzuiba-Leatherman, 1995), the current dissertation focused on school-age children, a population that is often overlooked in epidemiological studies of victimization (Finkelhor & Hashima, 2001; Turner et al., 2012) and aimed to examine developmentally-sensitive risk models (as opposed to the bulk of the research that examines broad developmental periods). School-aged children are particularly vulnerable to poly- and multiple victimization as a result of the school transitions experienced at their age (i.e., Finkelhor, 2009) and, as such, research examining school-aged children can provide us with important information. For example, identifying risk factors of victimization in this age group may allow us to better understand factors that could potentially divert negative trajectories of risk and, in turn, could inform preventative efforts. In addition, given that available studies have sampled primarily community-based children, the current dissertation utilized sampling strategies to identify a clinical subsample. A comprehensive range of victimization types was examined, namely 46 types grouped into the seven following forms:

(a) peer and/or sibling victimization; (b) conventional victimization (i.e., property crimes and physical assaults); (c) sexual victimization (non-caregiver-perpetrated); (d) witness/indirect victimization; (e) maltreatment; (f) exposure to family violence; and (g) Internet victimization.

The objectives of Part I of the dissertation were to examine (1) the nature of victimization experiences, based on such data as the frequency of single, multiple, and poly-victimization as well as the occurrence of lifetime non-victimization adversities more generally; (2) the co-occurrence of different victimization forms; (3) the association between victimization forms and socio-demographic variables as well as psychosocial difficulties; and (4) the impact of weighting techniques on the association between multiple victimization and psychosocial difficulties. Part II of the dissertation tested comprehensive risk models of multiple victimization that considered child, family, and neighbourhood factors as well as potential interactions. The risk models tested in this dissertation are grounded in ecological-transactional theory (Lynch & Cicchetti, 1998) to allow for a more holistic and theoretically-informed evaluation of risk. This modelling aimed to overcome shortcomings of past research which has tended to focus on more static socio-demographic risk factors, has not investigated interaction effects, and has largely ignored theoretical considerations (Hamby & Grych, 2013; Saunders, 2003).

Findings from the dissertation have applied implications, first and foremost by raising awareness of the extent to which children experience multiple types of victimization. Furthermore, the study identified factors that increase children's risk for childhood victimization and delineated the various ways in which these risk factors influence and build upon one another to generate a context of risk. As such, the current dissertation helps inform

early identification and preventive strategies for vulnerable children. Finally, the study examined psychosocial functioning among children with various victimization exposures. These findings could inform existing treatment interventions by highlighting key factors and processes that are associated with impaired outcomes and functioning.

**Part I: The Frequency and Co-occurrence of Victimization Experiences and
Associations to Psychosocial Difficulties**

Rates of Childhood Multiple Victimization

With accumulating research, it is now clear that children who experience victimization often experience multiple types of victimization (Hamby & Grych, 2013). Results from a nationally-representative U.S. study suggest that 71% of children (2-17 years old) were exposed to at least one victimization experience during the course of one year and, among these victimized children, there were, on average, three different types of victimization (Finkelhor et al., 2005a). Data from a more recent nationally-representative U.S. study revealed that 66% of 2-17 year olds were exposed to more than one victimization type and that 30% were exposed to five or more types of victimization (Turner, Finkelhor, & Ormrod, 2010). Additional research has confirmed that multiple victimization is common in both community (Dong et al., 2004; Holt et al., 2007; Finkelhor et al., 2011; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Nishina & Juvonen, 2005; Resnick, Kilpatrick, Dansky, Saunders & Best, 1993; Romano, Bell & Billette, 2011) and clinical (Brady & Caraway, 2002; Briggs-King et al., 2010; Cyr et al., 2012; Saunders, Williams, Smith, & Hanson, 2002) samples, with rates ranging from 11-69.5% in children sampled from community settings and from 69.1-82% in children sampled from clinical settings.

While data on the victimization experiences of school-aged children are limited (Finkelhor, 2009), two U.S. national victimization surveys have provided evidence to support the significant exposure of children to multiple victimization, specifically the Developmental Victimization Survey (DVS; Finkelhor et al., 2005a) and the National Survey of Children's Exposure to Violence (NATSCEV; Turner et al., 2010). The DVS,

spearheaded by Finkelhor and colleagues (Finkelhor et al., 2005a; 2005b; 2007a), is a longitudinal study that is the most comprehensive assessment of 2 to 17 year olds' multiple victimization experiences to date (Turner et al., 2010). This random-digit dialling telephone survey assessed 34 to 39 victimization types that were categorized into the following five victimization forms: (a) maltreatment; (b) peer and/or sibling victimization; (c) sexual victimization; (d) witness/indirect victimization; and (e) conventional crimes. Data were collected from caregivers for children aged 2-9 years and through self-reports for children aged 10-17 years. The DVS included multiple waves of data collection, the first of which occurred in 2002-2003 on 2,003 children. The second wave collected data the following year (2003-2004) on 1,467 children from the original cohort, and it assessed lifetime victimization of these children. The third longitudinal wave occurred in 2005-2006, with a total of 989 children participating in all three DVS waves (Finkelhor et al., 2011).

The NATSCEV, also directed by Finkelhor, expanded on the DVS by including additional forms of victimization (e.g., Internet victimization and exposure to family violence). It gathered information on both past-year and lifetime exposure to 46 different victimization types, and it also sampled caregivers of infants aged 0-2 years. The NATSCEV data were collected in 2008, with a final cross-sectional sample of 4,549 0-17 year olds. Finally, the NATSCEV oversampled geographical areas with a large concentration of low-income and ethnic minority families (Finkelhor et al., 2011) to ensure a sufficient sample and power for subgroup analyses (Finkelhor, Ormrod, & Turner, 2009b).

These U.S. national surveys highlight the prevalent nature of multiple victimization in school-aged samples. For example, Turner and colleagues (2010) found that 27.5% of 6-13 year olds experienced between 1 and 10 victimization types, with 16.9% experiencing

more than 10 types over their lifetime. These rates closely resemble past findings (e.g., Finkelhor et al., 2009), which demonstrated that approximately 1 in 10 school-aged children (6-12 years of age) is exposed to 10 or more victimization types, most commonly physical assault (committed by a known or unknown adult that is not a parent), property crimes, and maltreatment (caregiver perpetrated physical, sexual, or psychological abuse and neglect). Similarly, Finkelhor et al. (2005b) found that school-aged children were significantly more likely to experience physical assaults, peer and/or sibling victimization, and a number of property crimes (e.g., vandalism, robbery), in the past year, compared to other age groups.

These results have been replicated by Holt et al. (2007) in their study of 689 fifth grade students (10-12 years old). Similar to Finkelhor et al. (2005b), Holt et al. (2007) found that victimized school-aged children experienced a greater number of conventional crimes, peer and/or sibling victimization, and witness/indirect victimization (e.g., exposure to community violence), compared to rates found in adolescent samples (in the past year). More recently, using the U.S. nationally-representative NATSCEV study, Finkelhor and colleagues (2009b) found that middle childhood (age 6-9) was a peak period for risk of the following lifetime victimization types: (a) assault by a sibling; (b) assault with no weapon or injury; (c) bullying (physical); and (d) emotional bullying/teasing. On the other hand, these authors found that early adolescence (age 10-13) was a peak risk period for the following: (a) assault with a weapon; (b) sexual harassment (same rates as 10-17 years old); (c) kidnapping; (d) witnessing family assault; and (e) witnessing intimate partner violence (interparental).

Heterogeneity in rates of childhood multiple victimization. The marked heterogeneity in rates of multiple victimization may be attributed to methodological

differences (e.g., retrospective/prospective designs, sampling strategies, definitions of multiple victimization) and divergent sample characteristics (e.g., age group, size, region, use community or clinical samples). Indeed, rates of multiple victimization have been found to increase with age (Finkelhor et al., 2005b) and, therefore, prevalence rates will largely depend on the age group sampled. For example, 13.8 % of U.S. children aged 2-9 years were exposed to 4 or more victimization types, compared to 23% of 10-17 year olds (Finkelhor et al., 2007b). Unremarkably, the prevalence of multiple victimization is higher in clinical (69.1%) versus community (23.3%) samples (Saunders et al., 2002). In addition, differences in rates of multiple victimization may be attributed to variations in the number and types of victimization experiences assessed across studies. Studies that focus on more extreme forms of victimization (e.g., sexual abuse) tend to yield lower rates of multiple victimization than studies that assess such experiences as peer and/or sibling victimization and exposure to violence. On a related point, most multiple victimization research has tended to focus on the more extreme types of victimization (Finkelhor & Dziuba-Leatherman, 1995; Finkelhor, 2009), so there may be an overall underestimation of the prevalence of victimization involving more frequently-occurring or “typical” types, such as peer and/or sibling victimization. It is also apparent that studies designed to assess many possible types of victimization obtain higher rates (e.g., 69%; Finkelhor et al., 2007a) compared to studies examining only a limited range of victimization types (e.g., 33.6%; Mullen, Martin, Anderson, Romans, & Herbison, 1996).

Finally, the heterogeneity in definitions used across studies may partially explain the difference in prevalence rates obtained in the research literature. The term multiple victimization has been construed by some researchers as exposure to different *forms or*

aggregates of victimization types, with exposure to two or more victimization forms (e.g., peer and/or sibling victimization, sexual victimization) being indicative of multiple victimization. However, this definition does not take into consideration the number of victimization *types* experienced. For example, a child who is exposed to several indirect victimization types (e.g., witness to intimate partner violence, witness to assault with a weapon) would be classified as non-multiply victimized because all the types fall within one victimization form. This particular conceptualization of multiple victimization does not allow for the study of the *severity* of victimization exposure but, rather, is more a measure of the *breadth* of victimization. In contrast, we can also define multiple victimization as exposure to more than two types so it is possible that a multiply victimized child could experience several types of victimization (e.g., emotional abuse by peers or sibling, physical abuse by peers or sibling) that fall within one victimization form, namely that of peer and/or sibling victimization. The current dissertation adopted this latter definition because it is consistent with the work of Finkelhor and colleagues, thereby allowing for a comparison of results. In addition, this definition considers all victimization types experienced by the child and therefore is a more representative and accurate measure of the concept of childhood victimization. Indeed, as a cumulative or dose-response relationship between victimization and psychosocial difficulties has been found, regardless of form (Finkelhor, 2009; Thompson et al, 2012), it appears important to similarly define multiple victimization by the number of incidences as opposed to exposure to specific victimization forms.

Another potential source of heterogeneity is associated discrepancies in the definition and concept of poly-victimization. The term poly-victimization has been used in the multiple victimization literature to refer to children who have a very high number of multiple

victimization experiences. While there currently does not exist a consensus in the field about the numerical threshold that would qualify children as poly-victims, most researchers classify the top 10th percentile of their sample as poly-victims (Finkelhor et al., 2011). However, such a delineation is sample dependent and therefore could confound the process of replication or comparison of results. Therefore, based on data from two U.S. national data sets (i.e., DVS and NATSCEV), Finkelhor and colleagues (Finkelhor, Ormrod, Turner, & Holt, 2009c) suggested that exposure to 5 or more victimization types over the past year would qualify a child as a poly-victim, regardless of age. As lifetime victimization experiences increase with age, researchers have further suggested that poly-victimization status would need to be weighted by age. Specifically, drawing from DVS and NATSCEV data, Finkelhor et al. (2009c) suggested that the following thresholds be used to classify lifetime poly-victims: 9 types for 3-6 year olds; 10 types for 7-10 year olds; 12 types for 11-14 year olds; and 15 types for 15-18 year olds. No similar age adjustment for past-year poly-victimization status has been suggested in the literature. It should be noted that, for the current dissertation, the thresholds suggested by Finkelhor and colleagues (2009c) will be used, again to allow for comparison of results and to provide a more objective, sample-independent definition of poly-victimization.

Limitations of the current literature. Most of the literature on childhood multiple victimization is based on data stemming from the NATSCEV and DVS. The NATSCEV and DVS utilized a population-based approach, and, as such, did not gather information on the victimization experiences of clinical samples. To date, data on multiple victimization for clinical samples of children are limited (Cyr et al., 2012; Saunders, 2003), potentially underestimating the full burden of victimization. In a similar vein, while these laudable

surveys provide rich data on childhood multiple victimization, they are U.S.-based and, as such, their generalizability to Canadian children has yet to be examined. Further, as a non-anonymous telephone survey was used for both the DVS and NATSCEV, it is possible that victimization was under-reported given duty to report obligations on the part of the researchers.

In Canada, the General Social Survey of Victimization (GSS; Perreault, Sauvé, & Burns, 2009) does not provide information on children under the age of 15 years. Further, the Incident-Based Uniform Crime Reporting (UCR-2; Canadian Centre for Justice Statistics, 2008) survey does not provide statistics on the number of children (ages 0-18 years) who are multiply victimized but instead focuses on more severe types of victimization (e.g., sexual assault). In addition, the UCR-2 survey only provides information on police-reported incidents in Canada. However, as police-reported violence represents only a small portion of the actual victimization experienced by children, statistics stemming from this survey are likely to be underestimates. Indeed, GSS data demonstrate that only 1 in 8 youth aged 15-17 years reported their victimization to police (Perreault et al., 2009). This gap is posited to be even larger in younger children who may lack the resources necessary to report a crime (Finkelhor, 2009). On the other hand, the Canadian Incidence Study of Reported Child Abuse and Neglect – 2008 (CIS-2008; Trocmé et al., 2010) provides a wealth of information on children's victimization experiences but is limited to child maltreatment (i.e., physical, sexual, and emotional abuse, exposure to intimate partner violence) and neglect (i.e., physical or emotional). As such, there is a need for research examining multiple victimization that includes varying types of victimization, a focus on school-age children,

and a sample of both community and clinical children. For more detailed information on the methodologies of the above-mentioned Canadian national surveys, refer to Appendix A.

Co-occurrence of victimization experiences. Multiple victimization research has only recently begun to examine the victimization experiences that commonly occur together, including types that appear to be morphologically dissimilar (e.g., robbery and childhood neglect; Hamby & Grych, 2013). Strong correlations among victimization types (e.g., neglect) and forms (e.g., maltreatment) have been established in the literature (Finkelhor et al., 2009b; 2009c; Hamby et al., 2010; Hamby et al., 2012). Moreover, children who are exposed to one type of victimization are more likely to experience an additional, different type of victimization (Turner et al., 2006), with researchers finding a 2- to 3-fold increased risk (Finkelhor et al., 2009a).

Multiple victimization also has been found to persist over time. Finkelhor and colleagues (2007b) noted that children who experienced three or more victimization types in the past year were 5 times more likely to continue to experience multiple victimization one year later. In addition to increasing the risk of additional victimization experiences, multiple victimization has also been found to increase the likelihood of a variety of non-victimization adverse life events, such as traumatic accidents or losses. This is especially true for children with poly-victimization status where research has found an average of 4.7 additional adversities for poly-victims, compared to 2.1 for non-poly-victims (Finkelhor et al., 2011). Indeed, it appears that adversities, including victimizations, do not tend to be randomly distributed but rather to interact and vary in relation to specific individual (e.g., child age, sex) and systemic (e.g., family substance abuse) factors (Hamby & Grych, 2013).

As aforementioned, shared etiological pathways, as well as dynamic and transactional relations among contexts (e.g., school, family), have been speculated to be the source of the interconnections among victimizations (Grych & Swan, 2012). More specifically, it has been argued that childhood victimization experiences are rarely isolated events but rather are reflective of adverse life conditions that build upon one another to increase risk across multiple contexts (Hamby & Grych, 2013) by eroding key developmental processes, such as a sense of agency and emotion regulation (Baynard et al., 2013). Multiple victimization researchers therefore argue for more a more holistic research approach to childhood victimization that considers the multiple contexts within which a child is embedded as well as the ways in which these contexts may influence one another (Finkelhor, 2009).

The ecological perspective is an excellent theoretical framework of childhood victimization as it acknowledges the complex, dynamic, and interactional nature of childhood adversity and risk. It aims to understand and unravel the ways in which various contexts (e.g., family, neighbourhood), along with characteristics of the child, interact with and build upon one another to determine victimization risk and outcomes (Cicchetti & Lynch, 1993). The ecological framework also challenges the assumption that different forms of victimization are best explained by different sets of theories and models (i.e., specificity assumption) and instead posits a non-specificity assumption where different victimization forms are part of a larger pattern of victimization and share common risk factors (Grych & Swan, 2012). However, it is important to note that the specificity and non-specificity models of victimization are complementary and may mutually inform one another, which in turn allow for a better understanding of the complex etiology of childhood victimization

(Gustafsson, Nilsson, & Svedin, 2009). Nevertheless, to formulate accurate etiological models of victimization, multiple victimization researchers have argued that, as a next step, one needs to delineate the victimization forms that tend to cluster together and to evaluate their shared and unique risk factors (Grych & Swan, 2012).

Recently, there has been a substantial increase in research on patterns with which various forms and types of victimization occur together. While a certain amount of co-occurrence or overlap has been found for all forms and types of victimization (Hamby & Grych, 2013), research has demonstrated that there are specific victimization forms that especially increase the likelihood of exposure to additional victimization forms one year later (Finkelhor, 2009). For example, results from the NATSCEV suggest that children who experience sexual victimization (e.g., assault by a stranger or familiar individual) are most likely to experience additional victimizations concurrently, most notably indirect victimization and physical assault (Finkelhor et al., 2005a). Moreover, studies have demonstrated that the most serious forms of victimization (i.e., maltreatment and sexual victimization) often co-occur (Turner et al., 2010). For example, in a U.S. nation-wide sample, Finkelhor and colleagues (2007a) found that exposure to maltreatment (i.e., caregiver-perpetrated violence) or sexual victimization significantly increased the likelihood of children experiencing multiple victimization, with children exposed to these forms of victimization experiencing approximately three times more victimization than children not exposed to these particular victimization forms. Furthermore, Finkelhor and colleagues (2005a) found that sexual victimization, as well as exposure to war, were most likely to be associated with additional, different types of victimization during the same time period. In contrast, more common victimization types such as bullying, teasing, and sibling assault

were least likely to be associated with additional, different victimizations (Finkelhor et al., 2005a).

It has been posited that children exposed to maltreatment and sexual victimization may not be adequately supervised by caregivers or may not be exposed to a healthy model of relationships, therefore leaving them vulnerable for further victimization (Finkelhor, 2009). In addition, maltreatment or exposure to violence occurring in the home may place children at particularly high risk for experiencing further victimization as they inherently endanger the safe haven that is usually the home (Mrug et al., 2008). Contextual factors, such as family conflict and dangerous neighbourhoods, predict victimization exposure, thereby at least partly elucidating the established interrelations among the majority of victimization forms and types (Hamby & Grych, 2013).

A small number of recent studies have used the Juvenile Victimization Survey (JVQ) to assess a broad range of victimization forms and have similarly noted frequent co-occurrence among certain victimization experiences. However, these studies have been largely limited to undergraduate community-based samples (e.g., Babchishin et al., 2010; Richmond, Elliot, Pierce, Aspelmeier, & Alexander, 2009). Additional studies examining a more restricted range of victimization or adversities have documented the co-occurrence across these experiences (Dong et al., 2004; Higgins & McCabe, 2000; Jouriles, McDonald, Slep, Heyman, & Garrido, 2008) and have found that children who experienced multiple victimization in one context (e.g., home, neighbourhood) were more likely to experience multiple victimization in other contexts (e.g., school; Lila, Herrero, and Gracia, 2008). Similarly, in a nationally-representative Canadian sample of 1,036 13-16 year olds, Romano et al. (2011) found that different victimization types (i.e., verbal assault, threat of physical

assault, discrimination, school social exclusion, and physical assault) tended to co-occur, with close to one-third of the sample reporting multiple victimization.

In the past year alone, there has been a noteworthy proliferation of research on multiple victimization, such as additional studies on clinical subsamples (Álvarez-Lister, Pereda, Abad, & Guilera, 2014; Cyr et al., 2012; Ford, Grasso, Hawke & Chapman, 2013) as well as three large scale community studies, one in the U.K. (Radford, Corral, Bradley, & Fisher, 2013) and two from Québec, Canada (Cyr, Clément, & Chamberland, 2013a; Cyr et al., 2013b). These two population-based studies warrant further discussion. The study by Radford and colleagues (2013), which adopted a random probability sampling and phone-interview design, used the JVQ to assess lifetime and past-year victimization experiences of 4,435 children and young adults. In the subsample of 2,160 children ($M_{\text{age}} = 4.60$, $SD = 3.16$, range = 0 to 11 years old), 53.6% had been exposed to at least one victimization in their lifetime ($M = 1.78$), according to caregiver reports. Specifically, 33% of children had been exposed to physical assaults, 28.4% to peer and/or sibling victimization, 11.3% to community violence, 8.9% to maltreatment, and 1.2% to sexual victimization. Turning to past year rates, caregivers reported that 25.8% of children were exposed to physical assaults, 23.7% were exposed to peer and/or sibling victimization, 4.8% experienced exposure to community violence, 2.5% experienced maltreatment, and 0.6% experienced sexual victimization. Radford et al. (2013) also plotted exposure to victimization across age groups. Of note, a significant reduction of the past-year prevalence of peer and/or sibling victimization, sexual victimization, and exposure to domestic violence was observed between the age of 11 and 12 years. However, exposure to community violence was found to gradually increase with age.

Cyr and colleagues (2012; 2013a; 2013b) have been the first to publish multiple victimization data from large-scale clinical (Cyr et al., 2012) and community samples (Cyr et al., 2013a; 2013b) in Canada. In a population design study, Cyr and colleagues (2013a) examined the victimization experiences of a randomly-selected sample of 1,401 children aged 2 to 11 years living in Québec, Canada. Based on caregiver reports, the researchers found that 68% of the sample experienced at least one lifetime victimization experience, and 42% experienced multiple victimization during their lifetime. Lifetime victimization rates were found to increase with age, with 1 in 4 children aged 6 to 11 years experiencing more than 4 victimization types during their lifetime. In an additional study, Cyr and colleagues (2013b) examined the victimization experiences of 1,411 children and provided data on a subsample of 797 school-aged children (6-11 years old). Findings indicated that school-aged children experienced an average of 2.9 victimizations in their lifetime, and a notable portion of these children were exposed to physical assaults (49.8%), property victimization (35.3%), witness or indirect victimization (24.0%), maltreatment (10.8%), and sexual victimization (6.2%) over their lifetime.

Co-occurrence in clinical subsamples. The co-occurrence of victimization experiences has been found to be more prominent in clinical samples, compared to community samples (Saunders, 2003). Cyr and colleagues (2012) used the JVQ to examine the victimization experiences of a clinical sample of 220 2-17 year olds from Québec who were involved in the child welfare system. Findings indicated that 93% of the sample experienced multiple victimization in the past year alone, and the most common forms were physical assault (71%), indirect/witnessing violence (66%), property crimes (63%), maltreatment (39%), and sexual victimization (20%). These authors also found that past-year

poly-victimization was quite common in this child welfare sample, with 29% of the children experiencing between 4 to 6 victimization types and 25% experiencing 7 or more victimizations. These findings are in line with DeHart (2009)'s U.S. study of 100 criminal justice-involved girls, which found a high rate of lifetime multiple victimization, as assessed by the JVQ ($M = 6.72$). Of note, the researchers replicated the DVS and NATSCEV findings which showed that rates of multiple victimization increase with age and that poly-victimized children (i.e., top 10% of victimized children) are more likely to report sexual victimization and maltreatment (Finkelhor et al., 2005b; Finkelhor et al., 2007a). Similarly, in their sample of 132 outpatients aged 12-17 years old ($M = 14.27$; $SD = 1.42$), Álvarez-Lister, Pereda, Abad, and Guilera (2014) classified one-fifth of the sample as poly-victims, by way of the 36-item JVQ. There was a mean of approximately 14 different lifetime victimizations, and these poly-victims experienced significantly more maltreatment, sexual victimization, and Internet victimization, compared to the multiply-victimized group.

The co-occurrence of certain victimization experiences in clinical samples has also been documented in additional studies that assess a more restricted range of victimization experiences. In a sample of 1,959 justice-involved youth (10-16 years old), Ford and colleagues (2013) found that, of the 19 adversities assessed using the Traumatic Experiences Screening Instrument, 58% of the sample endorsed at least one adversity. The average number of adversities experienced by victimized children in this sample was 2.56 ($SD = 1.88$). More specifically, 37.3% were exposed to physical assaults, 35.9% were exposed to community violence, 20.8% were exposed to family violence, 15.5% were mugged, 5.3% experienced sexual abuse, and 1.6% were exposed to war and/or terrorism.

It has been argued that the increased exposure to multiple victimization and poly-victimization in clinical samples is most likely due to a higher prevalence of more “serious” victimizations, such as childhood maltreatment. It should be noted that the term “serious” has been used in the literature to classify victimization experiences that appear to have a particularly salient effect on children’s psychological well-being. In particular, interpersonal victimization has been found to be more strongly associated with complex posttraumatic stress disorder (PTSD) than non-interpersonal victimization, such as accidents or natural disasters (Van der Kolk et al., 2005). Furthermore, intra-familial victimization is associated with higher rates of psychosocial difficulties, compared to extra-familial victimization (e.g., peer victimization; Cloitre, Cohen, & Koenen, 2006). Finkelhor and colleagues (Finkelhor, Ormod, Turner, & Hamby, 2005a) defined the severity of victimization forms based on their statistical associations to psychosocial difficulties. Data from the DVS and NATSCEV indicated that sexual victimization and maltreatment have a particularly strong association with measures of psychological well-being, even after accounting for multiple victimization experiences. As such, they have been classified as “severe” forms of victimization (Finkelhor et al., 2011).

In a similar vein, highly-victimized children (i.e., poly-victims) tend to be exposed to victimization experiences that involve a caregiver perpetrator or a sexual offense by a stranger or non-biologically-related acquaintance (Finkelhor, Ormod, Turner, & Hamby, 2005b). For example, Hamby and colleagues (2010) demonstrated that, even after controlling for socio-demographic factors (i.e., sex, age, ethnicity, family income), witnessing intimate partner violence in the past year significantly increased the likelihood of concurrently experiencing a number of severe victimization forms (e.g., maltreatment,

physical assault with a weapon, statutory rape/sexual misconduct, and custodial interference such as when a parent keeps/hides a child from the other parent), with odd ratios ranging from 3.8 to 9.2. In other words, the odds of children who had witnessed intimate partner violence in the previous year of also experiencing severe victimization forms were about four to nine times greater than those of children who did not witness intimate partner violence in the previous year.

In concert, Holt and colleagues (2007) found that highly-victimized children were more likely to experience additional forms of victimizations. These authors conducted an exploratory cluster analysis on 689 fifth-grade students aged 10-12 years to identify common victimization clusters. Results indicated the three following clusters: (a) Minimal Victims (65% of sample); (b) Primarily Peer Victims (25%); and (c) Multiple Victims (10%). Compared to the other clusters, the Multiple Victims group was more likely to experience (in order of decreasing frequency) peer victimization, conventional crimes, and sexual victimization. While no group differences were found among socio-demographic factors (e.g., child age, sex, and family structure), children in the Multiple Victims group reported significantly greater psychological difficulties ($M = 62.15$, $SD = 9.47$) than Minimal ($M = 54.24$, $SD = 5.33$) and Primarily Peer victims ($M = 59.09$, $SD = 7.00$).

Additional data from the NATSCEV indicate that children who endorse either experiencing or witnessing community violence are more likely to endorse concurrent multiple victimization experiences, compared to children who do not endorse such indirect victimization experiences (Finkelhor et al, 2007a; Hamby, Finkelhor, et al., 2010). The salient effect of indirect victimization experiences may be due to its possible association with living in a dangerous neighbourhood, which has itself been associated with greater

exposure to victimization (Hamby & Grych, 2013). Of note, at least in explaining the influence on criminality and substance misuse, neighbourhood effects are mostly likely explained indirectly by familial confounding rather than by a direct neighbourhood effect (Sariaslan, Langstrom, D'Onofrio, Hallqvist, Franck, & Linchtenstein, 2013).

Summary. Recent empirical findings converge to provide convincing evidence for the prevalent nature of multiple victimization and the co-occurrence among victimization experiences. As such, there is support for the argument that childhood victimization does not occur in isolation as unique and unrelated events. Instead, the evidence from multiple studies speaks to a *condition* of victimization, wherein exposure to a victimization experience increases the likelihood of exposure to another victimization. While this co-occurrence is found across all victimization experiences, the association is particularly salient in more severe forms of victimization, such as sexual victimization, Internet victimization and maltreatment (Álvarez-Lister et al., 2014; Finkelhor et al., 2005a; Hamby & Grych, 2013). The co-occurrence across victimization forms is often examined by way of odd ratios. Group-based modeling, such as cluster analyses (e.g., Holt et al., 2007) or profile analyses, is largely absent in the multiple victimization literature. Such analyses may shed light on the nature of co-occurrence among victimization experiences. More broadly, research has found that victimization (lifetime and past-year) predicts greater non-victimization adverse life events (e.g., being in a fire, being hospitalized or in an accident). The prevalence and co-occurrence across victimization experiences has been found to be more prominent in clinical than community samples. While children drawn from clinical samples generally experience a greater number of victimizations across all forms, findings suggest that these children are at

particularly greater risk for severe victimization forms (e.g., sexual victimization, maltreatment).

In recent years, research methodologies have shifted to reflect this newly-emerging holistic view of childhood victimization, with more attention being devoted to better understanding the nature of childhood multiple victimization. This enhanced understanding is essential as it will inform research that seeks to understand the risk factors for and psychosocial impact of childhood victimization (Hamby & Grych, 2013). Specifically, an appreciation of the context that gives rise to victimization, along with a better understanding of common victimization experiences that cluster together or co-occur, would help researchers to better understand the phenomenon of childhood victimization and, in turn, to more accurately assess its risk and impact.

Victimization and Psychosocial Difficulties

A dose-response relationship between victimization/adversity exposure and risk for psychopathology has been demonstrated in the literature in that greater exposure is related with greater psychosocial difficulties (Finkelhor, 2009, Hillis, Anda, Dube, Felitti, Marchbanks & Marks, 2004; Thompson et al, 2012). Multiple victimization research has similarly suggested a cumulative effect of victimization in that exposure to a number of different victimization experiences is associated with greater psychosocial difficulties (e.g., depression, trauma symptoms), compared with exposure to few or no traumatic experiences (e.g., Finkelhor et al., 2005a; 2007b). Conversely, this same body of research has found that the salience of “severe” albeit less commonly-occurring victimization types tends to remain, compared to more frequently-occurring victimization types (Finkelhor et al., 2010). For example, Finkelhor et al. (2007b) found that statistically controlling for the number of

victimization incidents greatly reduced the associations between specific victimization forms and psychosocial difficulties, with the exception of physical assault and maltreatment for children aged 2-9 years and with the exception of sexual assault and maltreatment for children aged 10-17 years.

Despite evidence suggesting that certain victimization experiences exert particularly powerful effects on children's functioning (Ackerman, Newton, McPherson, Jones & Dykman, 1998; Finkelhor et al., 2010), a clear understanding of this association has yet to be attained. Indeed, as severe forms of victimization (e.g., maltreatment, sexual victimization) are significantly more prevalent in multiply-victimized children (e.g., Finkelhor, 2007b), it is difficult to partial out the variance accounted for by multiple victimization status itself versus the severe interpersonal victimization that tends to go hand-in-hand with multiple victimization status. As such, additional empirical evidence is required to better elucidate this complex relationship. In particular, studies are needed to disentangle the cumulative versus distinct contributions of various forms of childhood adverse and victimization experiences (Nurius, Logan-Greene, & Green, 2012).

The Adverse Childhood Experiences (ACE) study has generated much discussion surrounding the cumulative effects of childhood adversities. The ACE study was spearheaded by the Kaiser Health Plan in the U.S., and it retrospectively assessed the relationship between 15 adverse childhood lifetime experiences (e.g., accidents, physical assaults, parental divorce) and well-being for approximately 17,000 individuals. A significant body of research has emerged from the ACE data which has ubiquitously found robust positive links between cumulative adversities and a myriad of impairments in mental and physical well-being (Finkelhor, Shattuck, Turner, & Hamby, 2013; Sledjeski, Speisman,

& Dierker, 2008). However, questions remain surrounding the methodological and content validity of cumulative adversities indices as well as the best method to achieve a parsimonious measure of childhood adversities (Schilling, Aseltine & Gore, 2008).

As the ACE study includes adverse experiences ranging in severity from parental divorce to parental death³, some researchers have argued that the inclusion of “less severe” adverse life events (e.g., missed/repeated grade) into cumulative adversity indices may confound the validity of the overall score by “watering down” the influence of more severe life events (Schilling et al., 2008). These same authors argued that the association between the cumulative ACE scale and mental health outcomes is confounded by the fact that increases in the ACE scale are associated with a greater endorsement of more “severe” adverse experiences, such as sexual abuse/assault. Finkelhor and colleagues (2011) sought to replicate and improve the ACE scale using data from the NATSCEV. These researchers found that excluding certain items (e.g., parental divorce and incarceration) or adding additional items (e.g., peer and property victimization, exposure to community violence) significantly increased the ability of the ACE scale to predict trauma symptomatology. Furthermore, similar to past studies (Nurius et al., 2012), Finkelhor and colleagues (2011) found that, while there was a clear dose-response relationship between the revised ACE scale and trauma symptoms, three ACE items (i.e., maltreatment, sexual abuse, and parental substance abuse) made separate contributions to the predictive power of the model. In other words, a prediction model that had these three types of victimizations in addition to the ACE

³ Adverse experiences assessed by the ACE study include hospitalizations, parental divorce/separation, missed/repeated grade, sent away from home, parental unemployment, parental substance abuse, life-threatening accident, natural disaster, witnessed injury/death, sexual abuse/assault, physical abuse/assault, neglect, and death of parent.

scale better predicted trauma symptomatology than a model that only included the ACE scale.

Together, these findings converge to support a “both-and” impact of cumulative adversity and individual adversities (Nurius et al., 2012), lending support for both the specificity and non-specificity model of victimization. Stemming from such findings, some researchers have argued that weighting methods may need to be introduced when calculating a cumulative adversity/victimization score (Schilling et al., 2008). Indeed, the discussion around weighting was first presented in the ACE literature decades ago (Ross & Mirowsky, 1979), with researchers arguing that a weighting method could reduce the error variance in the overall scale and eliminate the impact of suppressor events (i.e., less significant events that may “water-down” the scale predictive ability). More specifically, Ross and Mirowsky (1979) argued that researchers should determine weights through the regression coefficients of individual adversity items. However, such a method was criticized as sample-dependent (i.e., weights vary according to samples) and not grounded in theory. To date, no consensus in the literature on the issue of weighting has been reached (Schilling et al., 2008).

Weighting techniques. Finkelhor et al. (2005b) re-examined the issue of weighting using a methodology similar to the one first proposed by Ross and Mirowsky (1979). Examining past-year victimization experiences, Finkelhor and colleagues (2005b) weighted the victimization experiences that continued to exert unique contributions to the regression model (i.e., whose regression coefficient remained significant) by adding an additional weight of +1 for both sexual victimization and maltreatment experiences. The weighted cumulative scale only modestly increased its predictive ability (regression coefficient from $B = 0.35$ to 0.38 for depression and from $B = 0.31$ to 0.33 for anxiety). As such, these authors

concluded that the method of summing the various victimization types into an overall victimization score was sufficient for past-year experiences.

More recently, however, Finkelhor and colleagues (2009b) evaluated the appropriateness of a new weighting method for both past-year and lifetime victimization. Through multiple regressions, these researchers evaluated the unique contributions of individual victimization experiences and the cumulative scale, while controlling for a number of potential confounds (e.g., lifetime adversity, demographics). Victimization items that were found to uniquely contribute to the prediction of the outcome (i.e., symptom distress), over and beyond the cumulative victimization scale, were weighted. Specifically, the researchers consecutively added +1 to these victimization items until they no longer exerted a unique contribution to the overall predictive power of the model (i.e., their regression coefficients were no longer significant). The predictive ability of the non-weighted and weighted scales was then examined. For past-year victimization, the authors concluded that, similar to their previous findings, the weighted scale did not improve the prediction of symptom distress. However, the weighting method was found to markedly improve the predictive power of the lifetime cumulative victimization scale. Specifically, adding +3 for sexual victimization and +4 for maltreatment to the cumulative score significantly increased its predictive ability from $B = 0.34$ to $B = 0.44$. Finkelhor et al. (2009b) suggested that sexual victimization and maltreatment experiences need to be allocated additional weight when calculating cumulative scales because they exert particularly salient effects. However, no consensus is currently used in the literature, with few researchers weighting lifetime victimization experiences.

Conclusion

Research in the area of childhood victimization recently has begun to examine the issue of multiple victimization (Finkelhor, 2009). Exact rates of multiple victimization, however, are difficult to estimate because of methodological and definitional differences across studies. Nevertheless, multiple victimization research has tended to find that multiple victimization is the norm among victimized children and, furthermore, has consistently uncovered significant co-occurrences among different victimization types and forms (Hamby & Grych, 2013). Notably, research suggests that the more “severe” victimization experiences, such as child maltreatment, sexual victimization, and Internet victimization, significantly increase the likelihood of experiencing additional and different types or forms of victimizations, both concurrently and over time (Turner et al., 2010).

Despite the common co-occurrence of certain victimization experiences, most research to date has tended to examine victimization types and forms independently of one another, thereby limiting our understanding of childhood victimization. Moreover, research has tended to focus on very broad and developmentally heterogeneous age groups (e.g., 0-18 collapsed into one youth sample) drawn from the community (Finkelhor, 2009), and research with clinical samples, although growing (e.g., Cyr et al., 2012), is sparse. As such, our understanding of multiple victimization among school-aged and clinical samples remains limited. In addition, there currently exists a need for more research that aims to delineate the nature of the co-occurrences among victimization experiences and to identify common victimization profiles, including the association between various victimization profiles and psychological markers (Hamby & Grych, 2013). Indeed, whether the effects of various childhood adversities are unique or simply additive remains an open empirical question that

has been largely neglected in the literature (Nurius, Logan-Greene, & Green, 2012).

Weighting methods to control for the unique contributions of individual victimizations have been proposed in the literature but currently, no consensus exists as to this issue (Finkelhor, Ormrod, Turner & Holt, 2009c; Schilling et al., 2008).

Part I Study Objectives

The first study objective, divided into three specific aims (1 through 3) was to examine the frequency of lifetime non-victimization adversities as well as lifetime and past-year victimization experiences in a sample of school-aged children. Differences among victimization exposure (e.g., single-victims, multiple-victims and poly-victims) across various socio-demographic variables were considered. In addition, differences in victimization and non-victimization adversity rates between clinical and community subgroups were examined.

The second main objective (aim 4) was to examine the extent and nature of co-occurrences between and among lifetime victimization forms. The co-occurrence between different victimization forms was first evaluated by way of cross-tabulations. Second, to better understand the commonly co-occurring forms experienced in this sample, victimization profiles were identified.

The third main objective, divided into two specific aims (5 and 6), was to examine the relationship between lifetime victimization exposure and psychosocial difficulties. First, analyses were conducted to examine the individual predictive contribution of the various forms of victimization on psychosocial functioning, with and without controlling for children's multiple victimization experiences. Second, the impact of weighting methods on the predictive ability of these models was also examined.

Part I Research Hypotheses.***Objective 1: Frequency of non-victimization adversities and victimization experiences.******Aim 1: Frequency of Lifetime Non-Victimization Adversities.***

- (1) Similar to previous studies (e.g., Gustafsson et al., 2009; Turner, Finkelhor, Hamby, & Shattuck, 2013), it was expected that lifetime non-victimization adversities would be common and that most children would have experienced at least one adversity.

Aim 2: Frequency of Victimization and Socio-demographic Differences.

- (1) Similar to past research (Hamby & Grych, 2013), it was anticipated that the majority (> 50%) of children would have experienced at least one victimization type over the past year and that, among victimized children, most would have experienced multiple victimization.
- (2) The same pattern of results was expected for lifetime victimization rates (Finkelhor et al., 2009). However, it was anticipated that lifetime rates would be higher than past-year rates and that this difference would be most notable in older children.
- (3) For both lifetime and past-year victimization, the most frequently-reported victimization forms in this school-aged sample were expected to be peer and/or sibling victimization, followed by conventional crimes, witness/indirect victimization, maltreatment, exposure to family violence, Internet victimization, and finally, sexual victimization (Finkelhor et al., 2007b; 2009c).
- (4) Based on past research (Cyr et al., 2013; Finkelhor et al., 2005a; 2007b; 2011; Ford et al., 2013; Hooven et al., 2012; Turner et al., 2010), it was anticipated that lifetime poly-victimization (anticipated to be experienced by approximately 10% of the obtained sample) and past-year poly-victimization would be associated with certain

socio-demographic characteristics, such as living in a non-intact household, male sex, ethnic minority, and more frequent non-victimization adversities, such as exposure to serious illness.

- (5) Similar to past research (Finkelhor et al., 2009b; Mitchell et al., 2011), it was anticipated that lower child age would be associated with higher rates of physical assaults (a subscale of conventional crimes), and greater child age would be associated with increased rates of maltreatment, Internet victimization, and sexual victimization.
- (6) It was expected that boys would have slightly higher rates of witness/indirect victimization, physical assaults, and property crimes (Finkelhor et al., 2009b; Ford et al., 2013). On the other hand, girls were expected to have higher rates of sexual and Internet victimization. Sex differences were expected to be more prominent in lifetime versus past-year rates (Finkelhor et al., 2009b).

Aim 3: Adversities and Victimizations Across Clinical and Community Subsamples.

- (1) As noted in the literature (Cyr et al., 2012; Saunders, 2003), it was expected that children drawn from clinical samples would have significantly higher rates of multiple victimization more generally but also maltreatment, Internet victimization, and sexual victimization, compared to children from community samples (for both past-year and lifetime).
- (2) It was anticipated that children in the clinical subsample would have a significantly greater number of life adversities than children in the community subgroup (Saunders, 2003).

Objective 2: Co-occurrence among victimization experiences (Aim 4).

- (1) While co-occurrences among different forms of victimization were expected (Hamby & Grych, 2013), greater overlap was anticipated for victimization forms classified as “severe” in the literature (i.e., Internet victimization, maltreatment and sexual victimization; Finkelhor et al., 2011; Mitchell, Finkelhor, Wolak, Ybarra, & Turner, 2011; Radford, et al., 2013).
- (2) It was anticipated that the victimization profiles identified in this study would reflect a general trend for exposure to multiple forms of victimization, with conventional crimes (e.g., property crimes and physical assaults) being the most prominent of victimization forms in this school-aged sample (Finkelhor, 2009). As a new method of profiling victimization was used, past research was not available to inform hypotheses. However, we anticipated that most profiles identified would represent multiple victimization and that the following victimization forms would be most often represented in profiles denoting multiple victimization: maltreatment; exposure to family violence; Internet victimization; and sexual victimization.

Objective 3: Associations between victimization and psychosocial difficulties.

Aim 5: Psychosocial correlates of multiple victimization.

- (1) A dose or linear relationship was expected between victimization exposure and psychosocial difficulties (Hillis et al., 2004; Thompson et al., 2012).
- (2) Multiple- and poly-victims were expected to have a greater number of psychosocial difficulties, compared to children with no victimization or only one victimization experience (Finkelhor, 2009; Ford & al., 2013).

- (3) While all forms of victimization were expected to be associated with psychosocial difficulties, it was anticipated that sexual victimization, Internet victimization, and maltreatment would be linked with greater symptomatology, compared to other victimization forms. These forms of victimization were expected to remain significant, even after controlling for multiple victimization experiences (Álvarez-Lister et al., 2014; Finkelhor, 2009; Hamby & Grych, 2013). In contrast, it was anticipated that the other victimization forms would no longer remain significant after controlling for multiple victimization.

Aim 6: Weighting Techniques.

- (1) Similar to past research (Finkelhor et al., 2005b), weighting techniques proposed by Finkelhor and colleagues (Finkelhor et al., 2009b; 2011) were expected to increase the predictive ability of lifetime victimization experiences on psychosocial difficulties.

Part II: Ecological Risk Models of Childhood Multiple Victimization

There is a wealth of information on risk factors associated with single childhood victimization experiences, such as childhood sexual abuse or peer and sibling victimization (Finkelhor, 2009). A review of the different victimization literatures reveals that, more often than not, there is significant overlap among risk factors across different childhood victimizations (Grych & Swan, 2012). Indeed, it has been noted that a number of victimization forms (e.g., peer and/or sibling victimization, conventional crime) share similar risk factors, such as family instability, dangerous neighbourhoods, and limited parental supervision (Holt et al., 2007). As such, researchers have argued that the frequent co-occurrence among victimization experiences may be the result of shared etiological pathways (Finkelhor et al., 2009a). Furthermore, as victimization has been found to increase vulnerability for future victimization (Finkelhor et al., 2005a; 2007b), it seems likely that the association between risk factors and various victimization experiences are far from static or direct and are most likely dynamic and transactional in nature.

There exists an ongoing debate in the literature regarding the specificity and non-specificity of childhood victimization. The field of childhood victimization has been largely governed by the assumption that different victimization forms are best explained by different sets of theories and models (i.e., specificity assumption). However, more recently, the childhood multiple victimization field has challenged this assumption and has argued for the assumption of non-specificity, which posits that different victimization forms are part of a larger pattern of victimization and share common causes and risk factors (Grych & Swan, 2012). As a function of the fragmented childhood victimization literature, the explicit identification of patterns of risk factors across victimization forms has been largely

neglected. Grych and Swan (2012) argue that the examination of victimization forms in isolation “has led to the repeated reinvention of theoretical and methodological wheels, restricted progress in understanding why some people are at greater risk for perpetrating and/or being victimized by violence, and constrained our ability to prevent” (p. 105). In a similar vein, this research would shed light on a potential sub-set of risk factors that is specific to particular victimization forms.

As victimization research tends to be compartmentalized or fragmented due to a focus on individual victimization types, our understanding of shared etiological pathways is quite limited. In response, Finkelhor (2009) created the field of developmental victimology and more recently, Hamby and Grych (2013) strongly advocated for a holistic approach to account for the known co-occurrence among victimizations. Indeed, a comprehensive assessment of victimization would take into account the co-occurrence among victimization experiences and, as such, would allow us to better predict any one type or form of victimization, or, conversely, the experience of multiple victimization.

At the forefront of this more comprehensive approach is a greater focus on predictors of multiple victimization (Finkelhor, 2009; Hamby & Grych, 2013). However, such research would necessitate a shift from victimization-specific models to more holistic models of victimization that are scaffolded by the basic assumption that different forms of victimization often radiate from similar risk factors (Grych & Swan, 2012). Risk models of multiple victimization are scarce in the literature and tend to be rudimentary in nature, with a focus on static variables such as socio-demographics. These models do not take into account the various contexts (e.g., family, community) that may put children at risk for multiple victimization and the ways in which these different contexts might work together. An

additional limitation of existing research on multiple victimization stems from the lack of theoretically-driven developmental risk models (Hamby & Grych, 2013; Saunders, 2003). Indeed, risk models of multiple victimization, which focus primarily on socio-demographic variables, tend to be tested on heterogeneous developmental periods (2-17 years old; Finkelhor, 2007a; 2007b; 2007c), which may limit both the specificity and generalizability of models. To expand our knowledge of multiple victimization risk, researchers should endeavour to address caveats in the existing literature, such as the relatively limited amount of multiple victimization research which focuses primarily on school-aged samples. Moreover, a better understanding of the risk factors for victimization experiences, in general, may inform broad-reaching preventive and early intervention programs.

As a function of the fragmented childhood victimization literature, the explicit identification of patterns of risk factors across victimization forms has been largely neglected. To evaluate whether certain patterns exist across different victimization forms, researchers must design studies which examine multiple forms in unison and which specifically aim to disentangle the commonalities and divergences across their etiology. As the field of multiple victimization grows, several recent studies (e.g., Turner, Finkelhor, Hamby & Shattuck, 2013a) have begun to shed light on the question of specificity of risk factors of childhood victimization. In their nationally-representative study (NATSEV) of 4,046 children aged 2 to 17 years, Turner and colleagues (2013a) examined seven separate risk models of childhood exposure to family violence, maltreatment, sexual victimization, physical assault, property crimes, witness/indirect victimization, and exposure to community violence. Findings indicated that, while a number of predictors were significantly associated with all seven victimization forms (e.g., family adversity, caregiver conflict, community

violence, family structure), several predictors were found to be significantly associated with only a specific victimization form (e.g., socio-economic status was only a significant predictor of sexual victimization). In addition, there was significant variability in the strength and direction of associations across the seven victimization risk models, indicating that predictors were not all similarly associated with the victimization forms. The predictors with the greatest variance across the seven victimization risk models were socio-demographic variables, specifically child age, ethnicity, and sex. These results provided partial support for both specificity and non-specificity assumptions. Specifically, while it appears that socio-demographic factors tend to fluctuate across the specific victimization models, more dynamic family-level factors (e.g., family conflict) appear to have greater stability in predicting a number of victimization forms. More research that endeavours to delineate patterns of predictors across victimization forms is needed to help better understand the nature and specificity of childhood victimization risk models.

The Ecological Perspective

First developed by Bronfenbrenner (1977), the ecological perspective may be used as a framework to organize our understanding of childhood victimization risk. The ecological perspective posits that an individual's development occurs within a series of nested ecological systems that interact with each other to influence development. Five ecologies have been identified, each with different degrees of proximity to a child and thus different degrees of direct influence (Bronfenbrenner, 1977). The most distant ecology is the *macrosystem*, which includes cultural beliefs and societal values (Cicchetti & Lynch, 1993). Of closer proximity to the child is the *exosystem*, which is defined as different structures in the community that do not necessarily directly involve the child, such as the socio-economic

climate and the availability of various resources or employment (Cicchetti & Lynch, 1995; Cicchetti & Toth, 1997; Cicchetti & Valentino, 2006). The *microsystem*, on the other hand, is comprised of settings that directly contain the child (e.g., family, school; Lynch & Cicchetti &, 1998) as well as the activities, roles, and interpersonal relationships experienced by the child (Bronfenbrenner, 1977). An additional system presented by Bronfenbrenner is the *mesosystem*, which is comprised of the interactions between the various ecological contexts within which the child evolves (e.g., relationships between school and family). Finally, *ontogenic development* is used to describe the ongoing dynamic task of development, and it includes the child who is at the centre of the ecologies and who reacts to the environment to influence his/her development (Lynch & Cicchetti &, 1998).

The ecological theory first proposed by Bronfenbrenner (1977) has since been adapted to help explain the etiology of community violence (Asenberg & Ell, 2005), interpersonal violence (Almgren, 2005), and child maltreatment (e.g., Belsky, 1980; Lynch & Cicchetti; 1998; Wilson-Oyelaran, 1989). In particular, the maltreatment literature includes several well-developed models that have adapted the ecological model to include developmental aspects. These models offer a significant contribution as they underscore the importance of a comprehensive examination of several ecological systems as well as the interactions that exist between them to predict childhood victimization. Cicchetti and Rizley (1981) posit that the occurrence of maltreatment must be examined as a series of factors stemming from many different ecological systems that interact with one another to either increase or decrease maltreatment risk. These same authors also proposed that factors may further vary in terms of their salience and temporal qualities (e.g., enduring or transient).

Adaptations to the ecological perspective (e.g., *trans-ecological perspective*; Cicchetti & Lynch, 1998) further underscore the dynamic and reciprocal influences that exist between the child, his/her development, and various ecologies. In a similar vein, *cumulative risk theory*, which posits that an accumulation of risk factors predicts victimization, can be understood as a theoretical extension of the ecological framework (Appleyard, Egeland, Manfred, van Dulmen, & Sroufe, 2005). Indeed, cumulative risk theory, similar to the ecological perspective, encourages researchers to examine risk factors within the context of one another and not in isolation. Similarly, the *interactionist perspective*, again inspired by the ecological framework, further underscores that individual development is a reciprocal and dynamic process that involves a series of interactions among various levels (e.g., family, community; Conger & Donnellan, 2007). The interactionist perspective asserts that human development is a multi-level process, and it emphasizes the salience of an individual's social and economic position on development. However, this perspective also highlights a variety of factors that have been as of yet ignored in the literature on risk factors for multiple victimizations, such as dynamics among family members.

Risk Factors for Childhood Victimization

Cultural factors (macrosystem). Cross-cultural studies have found that violence toward children tends to vary according to cultural values and norms (Fontes, 2008). An ingrained cultural belief that children are the property of caregivers and hold different rights than adults, for example, may be considered a risk factor. Indeed, some types of childhood victimization (e.g., physical assaults such as spankings) are considered to be outside of the scope of judicial systems and have been argued to relate to the societal tolerance of childhood victimization (Finkelhor, 2009). Although the influence of culture is appreciated

by researchers in the field of childhood victimization, it is rarely examined by psychology, with the exception of the field of cross-cultural psychology.

Neighbourhood factors (exosystem). Neighbourhood factors have a strong influence on the victimization experiences of children as victimization often occurs within these spheres (e.g., bullying in the school, property crimes in the community). Theoretical models have been developed in an attempt to unravel the various mechanisms through which the neighbourhood might influence children's development, alone and in interaction with other ecological contexts. It has been posited that dangerous neighbourhoods (i.e., high crime rates, weak social ties) may directly influence children's development by placing them at higher risk of experiencing community violence (i.e., witnessing assaults). However, living in a dangerous neighbourhood has been found to also increase the risk of additional forms of violence such as conventional crimes, assaults, and sexual victimizations (Finkelhor, 2009; Lauritsen, 2003). It has further been hypothesized that living in a dangerous neighbourhood may also affect children indirectly in that the chaotic and stressful community environment may place a particular strain on caregivers which, in turn, increases coercive (even abusive) parenting practices (Coulton, Korbin, Su, & Chow, 1999). In a similar vein, as families are not randomly dispersed within a neighbourhood, certain caregiver characteristics (e.g., low income, welfare support, mental health) may mediate the association between neighbourhood factors and victimization risk.

The childhood victimization literature has supported these assertions in that community violence has been identified as a risk factor for different victimization experiences, including peer and/or sibling victimization (Card & Hodge, 2008) and maltreatment (Cicchetti & Valentino, 2006) as well as multiple victimization more generally

(Finkelhor et al., 2007b). For example, living in a large urban community (> 300,000) was found to be related to an increased risk of multiple victimization (Finkelhor et al., 2007a; 2007b), as was living in a neighbourhood with a high level of transient residents (Sampson, Raudenbush, & Earls, 1997). It has been posited that, as urban centres with higher concentrations of transient residents have higher rates of criminal activities, the risk of victimization in these areas is greater (Van Wilsem, Wittebrood, & Dirk de Graaf, 2006). In concert, the Canadian General Social Survey of Victimization survey (GSS; Perreault et al., 2009), which measures youth (> 15 years old) victimization experiences, found that multiply-victimized youth were more likely to report higher levels of neighbourhood problems (e.g., crimes, vandalism, drugs). Similarly, Finkelhor et al. (2007b) found that a move to a more dangerous neighbourhood was related to an increased incidence of both multiple victimization and poly-victimization. In sum, a variety of neighbourhood factors have been linked to both different victimization experiences and to the occurrence of multiple victimization. Most notably, neighbourhood factors such as safety, cohesion, and size are consistently associated with childhood multiple victimization.

Family factors (microsystem). The family system is perhaps the most researched ecology in the child victimization literature, with risk models commonly including factors such as caregiver characteristics (e.g., parenting styles, parental mental health) and family functioning as well as socio-demographic factors (e.g., family size, family composition; Finkelhor, 2009). Socio-demographic factors have tended to be emphasized in the multiple victimization literature, which has placed less emphasis on caregiver characteristics and family functioning.

Socio-demographic factors. Certain family compositions have been associated with an increased risk of multiple victimization (Finkelhor et al., 2005a; 2007a; Jablonska and Lindberg, 2007; Turner et al., 2010). However, these associations appear to be indirect. For example, Turner et al. (2007) found that the association between single-parent households and multiple victimization was mediated by community-level factors (e.g., exposure to violence in the community), whereas the association between step-family households and multiple victimization was mediated by family problems, such as parental conflict. The socio-economic status (SES) of the family has also been linked with the occurrence of multiple victimization. Specifically, lower SES is associated with higher rates of multiple victimization (Attar-Schwartz, & Khoury-Kassabri, 2008; George & Thomas, 2000; Finkelhor et al., 2007a). It has been suggested that lower SES may increase the likelihood of other more salient risk factors of victimization, such as limited resources (e.g., social, financial) and caregiver adversities (e.g., mental health problems, parental stress, parental imprisonment; Finkelhor, 2009). However, more research is required to test these assertions.

The number of older siblings in the household has been found to increase risk for multiple victimization (Finkelhor, 2007b). It is possible that older siblings increase risk by exposing younger siblings to at-risk situations (e.g., contact with older peers who may engage in deviant behaviours; Finkelhor, 2007b). However, the presence of older siblings may also be more prominent in step-families, a risk factor identified in the literature (Finkelhor, 2009). Finally, although parental education has been less frequently examined in the multiple victimization literature, Romano et al. (2011) used a nationally-representative sample of Canadian adolescents and found that high maternal education decreased the risk for multiple victimization among adolescents whereas high paternal education increased the

risk for multiple victimization among adolescent females. This latter finding was surprising as parental education is often used as a proxy for SES and, in this study, parental education was in fact correlated to family income. The authors underlined that more research is required to clarify this finding.

In summary, socio-demographic risk factors that have been identified in the child multiple victimization literature include family composition, older sibling presence, SES, and parental education. The associations between multiple victimization and these socio-demographic factors have mostly been examined in the current literature as direct associations. However, recent studies (e.g., Romano et al., 2011; Turner et al., 2007) suggest that more research is required to better understand the indirect associations that may exist. As such, future studies should be designed to test the possible mediators of the link between socio-demographic risk and multiple victimization.

Caregiver characteristics. Exposure to childhood victimization is strongly associated with the family environment (Turner, Finkelhor, Ormrod & Hamby, 2012). Caregiver behaviour (e.g., parenting styles) and psychological functioning have been found to be important risk factors for a number of victimizations, such as maltreatment (e.g., Trocme, 2003) and peer victimization (Card & Hodge, 2008). Much research attests to the significance of the caregiver-child relationship on children's development. Indeed, a safe, stable, and nurturing relationship with a caregiver has been found to foster greater emotion regulation and coping skills in children (Cicchetti & Valentino, 2006), and it has also been found to best predict resilience in the face of adversities (Hazzard, Celano, Gould, Lawry, & Webb, 1995; Katz & Gottman, 1997; Laor, Wolmer, & Mayes, 1997; Masten, 2006). The family system plays a pivotal role in the development of children's self-concepts and social

skills, which in turn can impact vulnerability to future victimization (Turner et al., 2012). Parenting styles characterized by low warmth/sensitivity and harsh/punitive discipline are associated with impairments in children's sense of agency (Cicchetti & Valentino, 2006) as well as internalizing and externalizing difficulties (Leinonen, Solantaus, & Punamakis, 2003; Rothbaum & Weisz, 1994). Much research in this area has focused on childhood maltreatment. This literature has found that caregivers who perpetrate violence against their children (e.g., physical abuse) or spouse are less likely to promote a warm and nurturing caregiver-child bond and, instead, are more likely to rely on harsh and punitive parenting strategies (Hughes, 1997; Margolin & John, 1997; Moroz, 2005; Trickett, 1997). In addition, in a literature review, Williams and Finkelhor (1990) found that incestuous fathers tended to be less involved in child care, more socially isolated, and less interpersonally sensitive, compared to non-abusive fathers or step-fathers. Caregiver psychosocial functioning has also been examined in the childhood victimization literature, although most typically within the maltreatment literature (Turner et al., 2012). Ubiquitously, caregiver psychological difficulties have been found to compromise the development of a healthy caregiver-child relationship which, in turn, negatively impacts children's own mental health (Leinonen, et al., 2003; Pat-Horenczyk, Robinowitz, Rice & Tucker-Levin, 2009; Pfefferbaum, 1997) and increases children's vulnerability to victimization experiences, both within and outside the family system (Hamby & Grych, 2013).

Such family-level factors have only recently been examined as risk factors for multiple victimization. Romano and colleagues (2011) used data from a nationally representative Canadian sample ($N = 1,036$) to examine risk factors of multiple victimization in adolescents (13-16 years old). These authors defined multiple victimization as exposure to

two or more of the following victimizations: (a) discrimination; (b) social exclusion; (c) threat of physical assault; (d) physical assault; and (e) verbal harassment. Results indicated that adolescents' perceptions of their parents as rejecting significantly increased the risk for multiple victimization, whereas perceived parental nurturance significantly reduced risk. These authors suggested that adolescent perceptions of parental rejection may be associated with a variety of psychological sequelae (e.g., depression, anxiety) that increase risk for victimization. In addition, parenting practices and children's victimization may also be directly associated, as caregivers who use negative parenting practices such as harsh discipline are more likely to perpetrate violent acts (Trickett, 1997). Using the NATSCEV data, Turner and colleagues (2012) examined the associations between the family context and victimization experiences (limited to maltreatment and sibling victimization) in a sample of 2,017 children aged 2 to 9 years. Findings indicated that exposure to maltreatment experiences and sibling victimization most typically occurred within a family context characterized by parental mental health dysfunction, problematic parenting practices (e.g., high hostile/punitive practices, low monitoring/consistency), residential instability, and parental conflict and adversity (e.g., substance abuse).

Certain adversities experienced by caregivers have been found to increase children's risk for multiple victimization, such as caregiver mental and physical illness, caregiver imprisonment, and caregiver alcohol problems (e.g., Finkelhor, 2007a, 2007b, 2007c; Stevens et al.; 2005; Turner et al., 2012; Turner, Shattuck, Hamby, & Finkelhor, 2013c). Using NATSCEV data, Turner et al (2013a) found that family adversities (e.g., alcohol abuse, caregiver mental health) and parental conflict significantly increased risk for victimization in a sample of 4,046 children aged 2 to 17 years. Using data from the U.S.

National Survey of Adolescents, Stevens and colleagues (2005) found that caregiver alcohol problems increased a child's risk for multiple victimization, defined as both physical and sexual victimization. It may be that parental alcohol misuse serves as a proxy for poor parental supervision or monitoring of children, which in turn increases victimization risk (Finkelhor et al., 2007b). It may also be that parents who misuse alcohol are more likely to maltreat their children (Trocmé & Wolfe, 2001).

Parental supervision has also been suggested to comprise a relevant family-level risk factor for multiple victimization (Finkelhor et al., 2009). Few multiple victimization studies, however, have directly measured parental supervision and, instead, the construct tends to be assessed indirectly. For example, single-parent households (Finkelhor et al., 2007b; Jablonska & Lindberg, 2007) and parental alcoholism (Finkelhor et al., 2007b; Stevens et al., 2005) are found to increase the risk of multiple victimization in children because these variables may be proxies for poor parental supervision. Romano et al. (2011), however, did not find parental supervision to be a significant risk factor for multiple victimization in a national sample of adolescents. It is possible, however, that parental supervision is a more salient risk factor for younger children, for community violence, or for more severe and infrequent types of victimization (e.g., sexual assault). Further, Finkelhor et al. (2007b) found that, while poor parental supervision was related to an increased likelihood of revictimization one year later, this association was only noted in bivariate analyses (i.e., correlations) and was no longer significant in multivariate analyses (i.e., multiple regression model). This suggests that the direct link between parental supervision and persistence/desistence of multiple victimization may be mediated by one or more additional constructs.

In summary, a variety of family risk factors have been identified in the multiple victimization literature. Studies indicate that the following are particularly salient risk factors: caregiver adversities (e.g., imprisonment, substance abuse problems); caregiver mental health difficulties; and parenting behaviours (e.g., limited supervision and low warmth/nurturance). However, additional research is required to tease out the contribution of family risk factors in school-aged children.

Child factors (ontogenic development). Factors such as sex and age are often examined in the child victimization literature. Young children have been found to be most vulnerable to victimization perpetrated in the home whereas older children tend to experience higher rates of victimization outside the home (Canadian Centre for Justice Statistics, 2008). Similarly, the NATSCEV found that younger children (school-aged) are at heightened risk for maltreatment whereas older children (adolescents) are at greater risk of experiencing conventional crimes (Finkelhor, 2009; Finkelhor et al., 2007a). The prevalence of multiple and poly-victimization has also been found to increase substantially with age (Finkelhor et al; 2005a; 2007a; 2007b), and the onset of poly-victimization has tended to correspond with school transitions, specifically with significantly more onsets in Grade 1 (age of 7) and in the first year of High School (age 15; Finkelhor, Turner, Hamby, & Ormrod, 2011).

Turning to sex, epidemiological and research data suggest that different types of victimization are experienced by boys and girls. For instance, boys have higher rates of assault (i.e., bullying), with the exception of kidnapping and sexual assaults (Finkelhor, 2007a; Tolin & Foa, 2006). Similarly, Romano et al. (2011) found that adolescent girls were more likely to be exposed to indirect aggression (i.e., relational), whereas boys were more

likely to experience physical aggression and threats of physical aggression. Although significant sex differences have been found in the prevalence of individual types of victimization in both clinical (Saunders, 2003) and community (Finkelhor, 2005a) samples, the prevalence of multiple victimization generally has not been found to vary according to sex in community samples (e.g., Finkelhor, 2005a; 2005b; 2007a; 2007b). While Romano and colleagues (2011) found that adolescent girls were more likely than boys to be exposed to two types of victimizations (22.6% vs. 15.4%, respectively), this sex difference no longer remained in the case of multiple victimization involving three or more types (14.0% vs. 15.4%). In one study using a clinical sample ($N = 530$), girls (76.5%) were found to have significantly higher rates of multiple victimization, compared to boys (57.5%; Saunders et al., 2002). Interestingly, research suggests that sex differences tend to vary by age. For instance, the UCR-2 data (Canadian Centre for Justice Statistics, 2008) illustrate that girls between the ages of 0 to 8 years and 13 to 17 years are more likely to be victims of violent crime than boys. In contrast, boys are at greater risk for being victims of violent crime between the ages of 9 and 12 and 18 to 19 years. This finding may clarify the mixed findings in the current literature, in terms of the importance of age and sex in predicting multiple and poly-victimization (often examined within a heterogeneous and wide age group, such as 0 to 17 years of age).

Children's exposure to past difficult events of a non-victimization nature has also been reported to be a significant child-level risk factor. For example, non-victimization adversity (e.g., exposure to fire or natural disaster, accidents, serious illnesses, death of a loved one; Dong et al., 2004; Finkelhor et al., 2007a; 2007b; 2007c; Romano et al., 2011) has been associated with an increased risk of multiple victimization. Using retrospective

data, Dong et al. (2004) found that exposure to one adverse experience (e.g., family substance abuse and mental illness) increased one's risk of experiencing an additional, different adverse event including victimization. In short, a number of child risk factors for victimization have been noted in the literature such as age, sex, non-victimization adverse lifetime events, and past victimization experiences.

Interactions (mesosystem). The interactions between systems are less often examined in the child victimization literature and even less so in the area of multiple victimization. In one notable exception, Turner et al. (2007) did find that associations between socio-demographic variables and multiple victimization were actually mediated by family and neighbourhood factors. As previously noted, neighbourhood problems (i.e., crimes, low cohesion, and limited resources) have been posited to exert strain on the family system, thereby indirectly increasing the likelihood for intra-familial victimization such as maltreatment.

Several risk factors have also been found to have differing effects across different family systems. For example, parental stress and adversity have been posited to be a more important risk factor for children living in single- and step-parent households, with research demonstrating that these family compositions are at greater risk for experiencing negative life events and higher levels of parental stress (Finkelhor, 2009). Furthermore, theorists have posited that intra-familial victimization may contribute to victims developing a victim-schema that promotes aggressive behaviours by peers (Perry, Hodges, & Egan, 2001). Additionally, it has been suggested that children who are poorly supervised may be at risk for exposure to victimization experiences across the different ecologies (e.g., in the neighbourhood, at school) because there is a sense of longing for security and attention that

may make them particularly vulnerable to exploitation by peers or adults (Finkelhor, 2009; Perry et al., 2001). Undoubtedly, more research is required to better elucidate these indirect associations between risk factors and multiple victimization.

Conclusion

Many risk factors have been linked with the occurrence of victimization, and these factors may be organized within a developmental-ecological framework. The ecological perspective emphasizes that childhood victimization is a psychosocial phenomenon that is best understood within the context of child, family, community, and cultural influences (Belsky, 1980). Moreover, interactions among factors within these various ecologies would seem important to consider given the complex ways in which factors work together to increase a child's risk of experiencing victimization.

To date, risk models of multiple victimization have tended to be limited to one ecology and generally have not taken into account the interactions that exist between and within these systems (Hamby & Grych, 2013; Saunders, 2003). Indeed, just as research on childhood victimization has tended to be fragmented (i.e., examination one victimization type in isolation), such a description might also apply to research on risk models of childhood victimization. Specifically, victimization risk models have tended to focus on a limited number of risk factors and to treat risk factors as unique entities that follow a cumulative stochastic model (i.e., each additional factor increases one's risk to a similar degree as the previous one). Instead, it is possible that a subset of risk factors increases victimization risk more so than others and that, after a certain number of risk factors, a ceiling effect is obtained (i.e., risk of victimization is high, regardless of the addition of further risk factors). As illustrated by the ecological-transactional model (Cicchetti & Lynch,

1993), a number of contexts (e.g., family, school, community) as well as the child himself/herself mutually influence each other over time to determine individual development. The transactional nature of development explains the reciprocal and dynamic nature of individual development (Lynch & Cicchetti, 1998). The inherent complexity of individual development, as illustrated by the ecological-transactional model, thus requires comprehensive models that examine multiple contexts of children's development and the interactions among these factors. Unravelling the complex interplay between risk factors within multiple systems is quite an onerous but important task.

Part II Study Objectives

The overarching objective of Part II of the dissertation was to test comprehensive and integrative risk models of lifetime victimization in school-aged children. The decision was made to focus on lifetime victimization as it better captures the victimization history of the child, compared to past-year victimization exposure. For the first objective, the association between risk factors and lifetime childhood victimization experiences (i.e., sum of all 46 types of victimizations) was examined. This risk model included the most commonly cited factors from the childhood victimization literature including child, family, and community risk factors informed by the ecological framework (Bronfenbrenner, 1977). The interrelations among risk factors within various ecological systems were also assessed by evaluating the following interactions: (a) caregiver supervision and neighbourhood safety; (b) caregiver supervision and non-intact family; (c) caregiver psychosocial symptoms and neighbourhood safety; (d) caregiver psychosocial symptoms and non-intact family. It should be noted that interactions in the multiple victimization literature are scarce and, therefore, these interactions have been largely informed by ecological and developmental theories.

The second objective contributed to the ongoing debate regarding the specificity and non-specificity assumptions of childhood victimization. To further contribute to our understanding of the complex etiology of childhood victimization, both specific and non-specific risk models were tested in Part II. More precisely, the applicability of the risk model for childhood victimization and the specific victimization forms (e.g., sexual victimization, maltreatment, conventional crimes) was examined. In particular, the strengths and directions of the predictors in both models were evaluated to test whether risk factors were indeed similar (support for the non-specificity assumption) or whether specific victimization forms were best predicted by different set of risk factors (support for the specificity assumption).

Part II Research Hypotheses.

Objective I: Correlates of Multiple Victimization.

- (1) As has been suggested in the childhood maltreatment literature (Cicchetti & Lynch, 1995; Cicchetti & Rizley, 1981; Nader, 2008), it was anticipated that family factors (i.e., caregiver substance use and psychosocial functioning, family functioning, parenting practices, family structure, parental education, household income) would make the greatest contribution to victimization risk in this sample of 6-12 year olds, followed by child factors (i.e., sex, age), and then neighbourhood factors (i.e., neighbourhood cohesion, neighbourhood safety).
- (2) Significant interactions were expected among factors within different ecological systems in predicting risk of childhood victimization. Specifically, it was posited that lower caregiver supervision and higher caregiver psychosocial symptoms would interact with lower neighbourhood safety and non-intact family status to increase

victimization risk (Cicchetti & Valentino, 2006; Finkelhor, 2009; Zielinski & Bradshaw, 2006).

Objective II: Correlates of Victimization Forms.

- (1) Results were generally expected to be similar when comparing the fit of the general childhood victimization model tested in Objective I and the fit of the model to more specific models of victimization forms in Objective II. More precisely, it was anticipated that findings would lend support for the non-specificity model, with the strengths and associations of risk factors and interactions being similar across the various victimization forms as in the general victimization model.
- (2) As has been noted in the literature (Turner et al., 2013a), it was anticipated that several differences across risk factors, in particular socio-demographic factors (e.g., age and sex of child), would be found and that these differences would be greater across victimization forms that are morphologically dissimilar (e.g., conventional crimes and maltreatment). In addition, it was anticipated that family-level factors (e.g., family dysfunction) would be most likely to remain consistent predictors across victimization forms.

Methods

Participants

To be included in the study, caregivers were required to (a) have a child between 6 and 12 years of age; (b) live in the Ottawa/Gatineau (Canada) area; (c) be fluent in English; (d) have access to a computer with an Internet connection; (e) not have a partner who already completed this study on either the same child or on another child living in the same household (this exclusion criterion was required to ensure independence of data); and (f) be between 18 and 59 years of age (as the measure on caregiver psychosocial functioning is only applicable to this age group). If caregivers had more than one child in the prescribed age range, they were asked to respond to study questions with regard to the child with the most recent birthday.

Participants included 213 caregivers who were an average of 38.75 years of age ($SD = 6.25$) with children who, on average, were 8.04 ($SD = 1.97$) years of age. Participants were primarily female (90.1%) and the majority of households were comprised of two biological parents (93.0%). Of the 20.2% of caregivers who were divorced, approximately half (51.2%) had full custody of the study child while the remaining 48.8% reported having shared custody. As illustrated in Table 2, the proportion of girls and boys in the sample was evenly distributed (47.4% and 52.6%, respectively). Children were primarily Caucasian (79.3%), and 13.1% were either receiving psychological services or were on a wait-list. The average household size was 4.5, with approximately 36% of children in the sample having older siblings. Most caregivers and their spouse, if applicable, had post-secondary education (85% and 79%, respectively). Finally, the median household income, before tax, was between \$100,000 to \$109,999.

In comparison with data from the Canadian Census data (Statistics Canada, 2012a; 2012b; 2013a), the obtained sample was appropriately representative of individuals from the Ottawa-Gatineau area. According to the most recent NHS data available (Statistics Canada, 2012a), the average family income in Ottawa is \$99,880 (in the current sample, data on income was normally distributed with a sample average between \$90-109,999). Ethnic and family composition data in the current study were also similar to Census data (Statistics Canada, 2012a; 2013a). Visible minorities represent approximately 22.8% of the Ottawa-Gatineau population, and approximately 67% of census families are married (Statistics Canada, 2012b; 2013). Comparatively, visible minorities represented 20.7% of study participants, and 68.1% were married. The proportion of children assigned to the clinical subsample (16.9%) was also representative of community rates, with approximately 15% of children in Ontario suffering from mental illness (Waddel & Shepherd, 2002). The level of educational attainment was slightly higher in the study sample compared to census data. While 44.3% of adults in the Ottawa-Gatineau area have a university degree (National Household Survey, 2011), 54.6% of caregivers in the study (including the respondent and their spouse) had a university degree.

Assignment to subgroups. Subsample analyses were conducted to examine potential differences between clinical and community-based children (Aim 3). The clinical subsample was defined as children who were currently receiving psychological services, who were on a wait-list for such services, or who had a current mental health diagnosis by a health professional. These criteria resulted in a sample size of 36. The remaining 177 children were considered to be part of the community sample. As aforementioned, the proportion of children categorized as clinical was representative of rates found within community samples,

and no significant differences were found on socio-demographic variables across the two subgroups. As such, these subgroups were only utilized for Aim 3, with all other analyses utilizing the overall sample ($N = 213$).

Measures

Victimization experiences. The caregiver-reported version of the *Juvenile Victimization Questionnaire - Revised* (JVQ-CR-R1; Finkelhor, Turner, Ormrod, & Hamby, 2009) was used to assess a comprehensive range of victimizations. The JVQ-CR-R1 is a 46-item measure that examines the seven following forms of victimization: (a) child maltreatment (e.g., physical abuse, sexual abuse by caregiver, neglect); (b) conventional crime (e.g., having something stolen); (c) peer and/or sibling victimization (e.g., being hit by a peer); (d) sexual victimization (e.g., sexual assault – not by known adult); (e) witnessing and indirect victimization (e.g., witnessing a murder); (f) exposure to family violence; and (g) Internet victimization. The JVQ-CR-R1 is an enhanced version of the initial JVQ-CR (Hamby et al., 2005c), with 14 additional items, specifically items that further assess exposure to domestic violence, exposure to community violence, and Internet victimization (Turner et al., 2010). Each JVQ item inquires about a specific victimization type, and respondents indicate whether or not their child had experienced the listed event in the past year and/or whether their child had experienced the listed event in his or her lifetime. As the JVQ conceptualizes victimization types by using concrete behavioural terms, it has been reported to be less susceptible to interpretation biases (Hamby et al., 2005). The JVQ takes approximately 15 to 20 minutes to complete (Finkelhor et al., 2005). A copy of the JVQ-CR-R1 is presented in Appendix B.

The JVQ-CR has undergone rigorous assessment by researchers and caregiver focus groups to ensure the appropriateness of wording and context and to establish content validity (Hamby, Finkelhor, Ormrod, & Turner, 2005). Construct validity has been demonstrated by the strong associations between the JVQ-CR and trauma symptoms (Hamby et al, 2005). To calculate poly- and multiple victimization, the screener sum method was used. The screener sum version of the JVQ excludes the original follow-up questions that gather information on perpetrators, weapons, injuries and whether the victimization was part of an already disclosed incident. Finkelhor et al. (2005b) compared the screener sum (SS) method of measuring poly- and multiple-victimization and found that the SS method performed as well as the original separate incident method (which excludes victimizations that did not occur within a separate incident). More specifically, the SS method successfully classified the majority (70-87%) of poly-victims identified by the original method and the poly-victims identified by the SS method did not differ on demographic factors (e.g., age, sex) to the poly-victims identified by the original method. Finally, the cumulative victimization exposure count calculated by the SS method was found to perform as well, and in most cases better, in predicting psychosocial difficulties than the original method that excludes victimizations that did not occur in a separate incident (Finkelhor et al., 2005a). As such, the authors conclude that due to methodological and conceptual similarities, the SS method is a respectable alternative for researchers, particularly if time constraints are a consideration.

The JVQ-CR has been found to have excellent test-retest reliability over a 3 to 4 week period ($r = .95$) and good internal consistency ($\alpha = .80$; Finkelhor et al., 2005c). An internal consistency alpha of .86 was found in the current sample. For additional

information, please refer to the JVQ administration and scoring manual (Hamby et al., 2005).

Socio-demographic factors. Caregivers provided information on their sex, age, ethnicity, highest education level, number of children living in the home, marital status, family structure, and household income before taxes. Further, they provided information on their children's age, sex, ethnicity, presence of a medical condition or mental health disorder, and whether the child was currently receiving or on a wait-list for receiving psychological services. Finally, caregivers were asked to provide information on their relationship to the child (i.e., adoptive parent, biological parent) as well as, if applicable, current custody status (i.e., full, shared). The socio-demographic questionnaire may be found in Appendix C.

Non-victimization life adversities. The adapted *Non-Victimization Adversity* questionnaire (Finkelhor et al., 2007a; 2007c) was used to assess non-victimization adverse life events. This parent-reported questionnaire was adapted from the Childhood Adversity Questionnaire (Turner & Butler, 2003) and includes 15 yes/no items evaluating possible non-victimization events that children may have experienced throughout their lifetime (e.g., “Did your child ever have a very bad illness where he/she had to be in the hospital for many days?”). The sum of the 15 items indicates the number of adverse life events to which they were exposed, with higher scores indicating higher rates of adversity. The parent-reported questionnaire was found to have good reliability and validity for school-aged children (e.g., Finkelhor 2007a; 2007c). This measure (see Appendix D) was found to have adequate internal consistency for the current study sample ($\alpha = .60$).

Caregiver psychosocial functioning. The *Achenbach System of Empirically Based Assessment - Adult Self-Report for Ages 18 – 59* (ASR) examines psychosocial functioning

(Achenbach & Rescorla, 2003). Respondents completed items on emotional, social, and behavioural problems in the past six months. Items are rated on a 3-point Likert scale, ranging from 0 (*not true*) to 2 (*very true or often true*). Due to concerns about the length of the study, only the following scales were used: (a) Depressive symptoms; (b) Anxiety; and (c) Antisocial Personality, collapsed into an overall caregiver symptom distress scale.

The ASR has been found to discriminate between referred and non-referred samples and is consistent with DSM-IV diagnostic categories (Achenbach & Rescorla, 2003). The measure has good to excellent test-retest reliability over a one-week period (r ranging from .71 to .99 for the different problem subscales) as well as good internal consistency for the various subscales ($\alpha = .83$; Achenbach & Rescorla, 2003). The internal consistency in the current study was good, and ranged from $\alpha = .74$ to $\alpha = .88$.

Parenting behaviours. The study focused on three parenting behaviours that have been identified as correlates of victimization, namely: (a) positive parenting; (b) inconsistent discipline; and (c) poor supervision. Specifically, the abbreviated version of the short-form of the *Alabama Parenting Questionnaire* (APQ-9; Frick, 1991) was used to measure positive parenting (3 items; e.g., “*You let your child know when he/she is doing a good job with something*”), inconsistent discipline (4 items; “*You threaten to punish your child and then do not actually punish him/her*”), and poor supervision (2 items; “*Your child is out with friends you don’t know*”). The abbreviated version of the APQ-9, which has been used in large-scale U.S. and Canadian studies, has been found to have good reliability and validity (Elgar, Waschbusch, Dadds & Sigvaldason, 2007). Items are rated along a 5-point scale, from 1 (*never*) to 5 (*always*). Lower scores indicate a low degree of the parenting characteristic measured (Elgar et al., 2007). A copy of the APQ-9 can be found in Appendix E. The

internal consistency for the three scales in the current study ranged from adequate ($\alpha = .67$) to good ($\alpha = .78$).

Family functioning. The *McMaster Family Assessment Device* (MFAD; Epstein, Baldwin, & Bishop, 1983) is a caregiver-reported measure of family functioning. The MFAD yields an overall functioning score that indicates the overall level of health of the family as a unit as well as seven scales of family functioning (e.g., affective involvement, communication, problem solving; Epstein, 1983). In the present study, caregivers completed the general functioning subscale of the MFAD, which is composed of 12 items rated on a 4-point Likert scale, ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). The measure (see Appendix F) has been found to have adequate discriminant validity and excellent internal consistency (Epstein et al., 1983). The internal reliability coefficient in the current study was excellent ($\alpha = .91$).

Neighbourhood factors. The *Neighbourhood Questionnaire* (Simcha-Fagan & Schwartz, 1986) was used to assess caregivers' perception of the safety of their neighbourhood as well as the quality of their social involvement and cohesiveness in their community. The psychometric properties of the questionnaire has been established through factor and internal consistency analysis (Simcha-Fagan & Schwartz, 1986). The neighbourhood safety scale used in this study included five items (e.g., "*It is safe to walk alone in this neighbourhood after dark*"; $\alpha = .67$), two of which were reversed scored. The social involvement scale was comprised of four items (e.g., "*How often do you get together with any of your neighbours, either visiting each other's' home or going places together*"; $\alpha = .81$) were included. Item responses included 3-, 4-, and 5-point scales, with higher scores

indicating higher levels of the measured concept (i.e., safety and social cohesion). See Appendix G for a copy of the questionnaire.

Children's psychosocial functioning. The *Trauma Symptom Checklist for Young Children* (TSCYC) is a caregiver-reported measure of trauma-related symptoms for children between 3 and 12 years of age (TSCYC; Briere, 2000). Parents responded to 90 items on a Likert-type scale, ranging from 0 (*not at all*) to 4 (*very often*). The TSCYC takes approximately 15-20 minutes to complete and requires a 6.8 grade reading level (Briere et al., 2001). The TSCYC contains two validity scales (Response Level, Atypical Response) and nine clinical scales (Posttraumatic Stress-Intrusion, Posttraumatic Stress-Avoidance, Stress-Arousal, Posttraumatic Stress Total, Sexual Concerns, Dissociation, Anxiety, Depression and Anger/Aggression). The internal consistency values for the clinical scales are good to excellent (α ranging from .78 to .92). Further, discriminant, predictive, and content validity of the TSCYC has been demonstrated through numerous studies (Briere, 2005; Briere et al., 2001). The following scales were used for the current study: (a) Posttraumatic Stress Total; (b) Depression; (c) Anxiety; and (d) Anger/Aggression. The discriminant, predictive, and content validity of the TSCYC have been demonstrated through numerous studies (Briere, 2005; Briere et al., 2001). The internal consistency values for the clinical scales in this sample ranged from good to excellent (α = .76 to .91).

Procedure

Ethics approval was obtained from the Faculty of Social Sciences Research Ethics Board of the University of Ottawa before the commencement of the study (REB #09-11-17, Approved November 4, 2011). Diverse strategies were used to recruit participants (Recruitment period from December 2011-August 2013). Study notices were left in

paediatricians' offices, libraries, and various community centres throughout the Ottawa/Gatineau area. Notices were also distributed to interested individuals at community events and in public areas, such as museums and afterschool programs. Further, the study was advertised on various websites targeting children and families in Ottawa/Gatineau (e.g., Ottawa Parenting Magazine, Capital Kids, Ottawa Mommy Club, Kanata Mommy Club, Ottawa Parent Resource). The study notices explained the purpose of the study, outlined inclusion and exclusion criteria, delineated what participation would entail, and provided the web link to the study (see Appendix H). No specific mention of victimization was made in the study notices so as not to bias recruitment. Instead, the notice referred to a study on recent difficult events that children may or may not have experienced. The phone number of the Children's Well-Being Lab at the University of Ottawa was provided on the study notice so that interested individuals who had questions or concerns about the study could speak to the research assistant. As an incentive to participate, individuals were invited to enter into a draw for one of four \$50 visa gift cards.

To ensure an adequate clinical sample size, study announcements were also posted on sites where clinical services are provided, such as mental health clinics and centres specifically focused on children's services (e.g., Vanier Children's Services, Family Services Ottawa, Centre for Psychological Services and Research, Children's Aid Society of Ottawa, Montfort Outpatient Mental Health, Rockland Montfort satellite clinic, various psychologists' and counsellors' offices). Further, links to the study were placed on various Internet forums for children with mental health and behavioural difficulties (e.g., mental health today, mental health net community) and, with assistance from the Canadian Association of Family Services Program, study notices were distributed to members via their

newsletter and were sent to their subsidiary family-centered organizations throughout the Ottawa/Gatineau area.

Given the diverse recruitment strategies, participants were asked to indicate the location or method of recruitment as part of their study involvement. Preliminary analyses (ANOVAs) were conducted to examine possible differences among children recruited from different locations. No significant differences were found on socio-demographic variables (i.e., child age, ethnicity and sex, marital status, household size, parents' education level, household income) as a function of the various recruitment strategies, including membership to the clinical and community subsamples. Therefore, data were analyzed as a whole (with the exception of Aim 3 that examines victimization exposure across clinical and community subgroups).

Interested individuals were able log onto fluidsurveys.com using the web-link on the study notice provided to them. At this time, inclusion and exclusion criteria were assessed through a series of questions. Specifically, participants were asked if (a) they were a caregiver of a child between the ages of 6 and 12; (b) they were fluent in English; (c) they lived in the Ottawa/Gatineau area; (d) their partner did *not* complete this same study on either the same child or on another child living in the same household; and (e) they were between the ages of 18 and 59. If the participants answered “*No*” to any inclusion criteria, they were forwarded to a webpage that thanked them for their interest and explained that they were not eligible for the study. If the participants were indeed eligible for the study, the consent form (Appendix I) was provided online. Before participants began the study, they provided consent by clicking on a button agreeing to participate in the study and indicating that they had read and understood the consent form. A link to a document with a list of

psychological resources was provided on each webpage throughout the administration of the study in the event that individuals experienced distress as a result of study participation and/or wished to obtain information on psychological resources for their child (Appendix J).

The online study required approximately 30 minutes to complete. No identifiable information was collected from the caregiver (e.g., IP address). Further, to ensure participant anonymity, cookies were not installed on participants' computers. However, the consequence of this design was that a caregiver was not able to close the study's webpage and return to it at a later point (as no information was collected that would enable the researchers to link different segments of the study to one participant).

This Internet design was used to circumvent ethical issues surrounding researchers' duty to report children in need of protection (August, 2011; personal communication with Pierre Viger from the Children's Aid Society of Ottawa). It was anticipated that this design would enable researchers to gather more accurate victimization data by helping discourage caregivers from misrepresenting children's victimization experiences out of fear of reprisal (e.g., child welfare involvement) and reducing socially desirable responding. Further, to obtain as representative a sample as possible, the anonymity provided by the Internet design was thought to help avoid a selection bias (i.e., it was anticipated that very few offending parents would consent to the study if they were aware of the risk of mandatory reporting) and socially desirable responding. Indeed, research has demonstrated that participants in Internet-administrated studies tend to engage in less socially desirable responding than participants in either traditional paper-and-pencil or phone interview administrations (Gosling & Vazire, 2004).

Participants were able to terminate the study at any time by clicking an exit button located at the bottom of each page. A link to a new window opened when participants either decided to terminate participation (by clicking the exit button) or to complete the study. This new window (a second survey) asked participants to provide their e-mail address to enter the draws for one of four \$50 visa gift cards. With this strategy, there was no way at this point to link participants to their study responses. At the end of data recruitment, four names were randomly selected from this list. While the e-mails of participants who entered the draw were known, researchers were not able to link participant names to study answers as the names were only selected at the end of the recruitment process once all data had been downloaded onto an Excel data file without time stamps.

Plan of Analysis

The current dissertation was divided into two parts, namely *Part I: The Frequency and Co-occurrence of Victimization Experiences and Associations to Psychosocial Difficulties* and *Part II: Ecological Risk Models of Childhood Multiple Victimization*. All analyses were conducted using the Statistical Package for the Social Sciences – Version 21 (SPSS 21.0). A probability level of .05 was used to establish statistical significance. As the statistical power for the analyses ranged from low to high (see Appendix K), with power to reveal differences among low base rates events (e.g., Internet or sexual victimization) being particularly constrained, effect sizes (Cohen's d) were also calculated to obtain the strength of the effect. Cohen (1988) suggested that a $d = .2$ represents a small effect, $d = .5$ a moderate, and $d = .8$ a large effect. The 95% confidence intervals (CI) are provided and should be interpreted as such: if the range of the CI contains zero, the d is not statistically significant at the .05 probability level. Data cleaning was conducted, and statistical

assumptions were verified prior to conducting analyses. Specifically, data were screened for univariate and multivariate outliers, normality, linearity, multicollinearity, homoscedasticity, and homogeneity of variance (see Table 3 and Table 4 for a summary of the assumption testing procedure, including information on outliers and transformations).

Power determination. A series of descriptive analyses were conducted, including independent samples *t*-tests, chi-squared, one-way ANOVAs, linear regressions, and correlations. Statistical power is determined by both the sample size and effect size of the particular analysis and, as such, multiple post-hoc power analyses were conducted for each group of analysis. Results are presented in Appendix J. Power ranged from .50 to .98 for detecting small effects (*Mdn* = 0.91) and from .86 to .99 for detecting moderate size effects (*Mdn* = 0.99).

As a series of analyses (including multiple comparisons) were completed in the current studies, experiment-wise error was a concern and the use of Bonferonni or other similar methods of adjustments was considered. However, it has been argued that the Bonferonni correction is far too conservative when the number of comparisons exceeds 10, as is the current case. In addition, several of the analyses had low statistical power, and Bonferonni adjustments would only have exacerbated this problem (Bender & Lange; 1999; Cohen, 1994; Perneger, 1998). More generally, researchers have argued against Bonferonni corrections, noting that such adjustments represent a single-minded focus on Type I error, whereas Type II errors (not finding true group difference) are equally as important. This argument may be extended to the current dissertation, which examines the important topic of childhood victimization, which inherently includes low base rates but which is often associated with far-reaching negative effects.

Missing data. Prior to conducting analyses, missing data were assessed and indicated that 9.34% of the total data were missing. Missing data ranged from 0-13.5% (trauma symptoms) for Part I and from 0-17.5% (neighbourhood variables, family functioning) for Part II. The fully conditional Markov Chain Monte Carlo (MCMC) method was used to account for missing data. The MCMC method can handle categorical variables as well as arbitrary missing data patterns. It assumes an iterative approach that fits a single variable using all other variables in the model as predictors and then imputes missing data for the single variable being fit. The method continues for each variable in the model to the maximum number of iterations specified, which was 10 (default setting) in the present study. While the analyses described below were conducted with missing value imputation, it should be noted that the main statistical analyses were repeated without imputing missing data and produced similar results.

Part I: The frequency and co-occurrence of victimization experiences and associations to psychosocial difficulties. For the first objective, the frequency of exposure to the 46 victimization types (for both past year and lifetime) and to lifetime non-victimization adversities was calculated. In addition, the frequency of exposure to the seven victimization forms (conventional crimes, sexual victimization, maltreatment, indirect/witness victimization, peer and/or sibling victimization, Internet victimization, exposure to family violence) for both the past year and over the lifetime was examined. Finally, the frequency of past-year and lifetime multiple and poly-victimization was calculated. The criteria for determining poly-victimization varied for past-year and lifetime exposure. For past-year rates, research has used exposure to 5 or more victimization types to classify a child as a poly-victim (Finkelhor et al., 2009a). For lifetime exposure, the

following criteria were used: exposure to 9 or more types for 6 year olds; exposure to 10 or more types for 7-10 year olds; and exposure to 12 or more types for 11-12 year olds (Finkelhor, 2009a). Note that multiple and poly-victimization status was based only on data from five victimization forms. This is because the classification method for poly-victimization established in the literature stems from the initial version of the JVQ (34-item version), which did not include Internet victimization and exposure to family violence. A series of chi-squared analyses of variance (ANOVA) and independent samples *t*-tests were conducted to identify potential socio-demographic differences on exposure to lifetime and past-year victimization, multiple victimization status, and poly-victimization status. In addition, subgroup analyses were conducted to identify differences across clinical and community subgroups on children's victimization rates.

Analyses were conducted to address the second objective of examining co-occurrence among the five victimization forms and lifetime non-victimization adversities. *First*, to examine associations among victimization forms, a series of cross-tabulations established the percentage of children with one form of victimization who also experienced additional victimizations forms. *Second*, commonly-occurring victimization forms were examined by qualitatively examining profiles of the various combinations of victimization forms. The seven victimization forms were first dichotomized into either *exposure* (defined as endorsement of at least 1 type of victimization within that form) or *no exposure*. Afterwards, exposure across the 7 forms for each child was examined to create a victimization profile. This method resulted in 128 potential combinations (2^7), representing the various combinations of exposure (yes/no) possible across the 7 forms.

The third objective examined associations between various victimization experiences and children's psychosocial difficulties. *First*, a one-way ANOVA was conducted to examine the association between psychosocial difficulties and the following lifetime victimization categories: (a) minimal victimization (1 type); (b) multiple victimization (2-8 types); and (c) poly-victimization (9 or more types, controlling for age). Effect sizes were calculated for significant results. *Second*, the relative contribution of the various lifetime victimization forms on psychosocial difficulties was also examined by way of linear regression models. Specifically, a series of linear regressions were conducted to test the association between the five forms (using a continuous measure of exposure to these forms) and psychosocial functioning, controlling for lifetime victimization exposure (i.e., sum of the 34 victimization types as no supplemental scales were included). The objective of these analyses was to assess the extent to which controlling for lifetime victimization exposure accounted for the variance found between single victimization forms and psychosocial difficulties.

Third, the appropriateness of weighting methods for lifetime victimization was examined. More precisely, the unique contributions of individual victimization forms (dichotomized into none or any exposure) on the lifetime victimization exposure scale were evaluated by way of multiple linear regressions. Models controlled for a number of potentially confounding factors, such as socio-demographic variables. Victimization forms that were found to uniquely contribute to psychosocial difficulties over-and-above the lifetime victimization exposure scale were weighted by consecutively adding +1 to these victimization forms until they no longer exerted a unique contribution to the overall predictive power of the model (i.e., their regression coefficients were no longer significant).

The predictive ability of the non-weighted and weighted scales was then examined. The decision to only focus on lifetime victimization to evaluate the applicability of weighting techniques was made based on previous research which found no impact of weighting for past year rates (Finkelhor et al., 2005b; 2009b).

Part II: Ecological risk models of childhood multiple victimization. For the first objective, a linear regression analysis was conducted to examine potential correlates of victimization experiences (i.e., cumulative count of exposure). Child, family, and community correlates were evaluated. Child correlates included the following: (a) sex; (b) age; (c) ethnicity; and (d) physical or mental disability. Family correlates included (a) caregiver education level; (b) family income; (c) family structure (non-intact families); (d) caregiver psychological symptoms; (e) caregiver substance abuse; (f) parenting practices (positive parenting and supervision); and (g) family dysfunction. Neighbourhood correlates included the following: (a) neighbourhood cohesion and (b) neighbourhood safety. Due to power constraints, the family structure variable was dichotomized into intact (i.e., two-biological parent) and non-intact families (step-families and single parents). Variables were entered in the model using the forced entry method with a *p* value of .05. Child variables were entered first, followed by family and then community variables. Several interactions were also tested in the regression models. Specifically, analyses were conducted to examine whether caregiver supervision and caregiver psychosocial symptoms would moderate the relationship between neighbourhood safety and victimization exposure as well as between non-intact family status and victimization exposure. For the interaction effects, continuous main effects were first centered. The interaction effects were entered in a subsequent model with the

predictor variables (including main effects) in the first block and the interaction terms in the second block.

For the second objective, the applicability of the above-described risk model of general childhood victimization on specific victimization forms was examined. In other words, these analyses examined whether the non-specific risk model tested in the first objective would also fit when testing specific victimization forms. This was done by way of logistic regression models (with each of the seven victimization forms as a separate outcome variable) and examining the chi-square (χ^2) and observed/predicted match percentage (model fit statistics) across the seven forms. Low and varying (or non significant) model fit statistics would indicate support for the specificity assumption. In addition, the seven victimization risk models were compared to examine whether or not the statistically significant correlates, as well as strength and direction, would vary according to the different victimization forms (again support for the specificity assumption).

Results

Part I : The Frequency and Co-occurrence of Victimization Experiences and Associations to Psychosocial Difficulties

Objective 1: Frequency of Non-Victimization Adversities and Victimization Experiences

Aim 1: Frequency of lifetime non-victimization adversities. This school-aged sample ($N = 213$) experienced an average of 1.62 ($SD = 1.58$, $Mdn = 1.00$, Range = 0-7) non-victimization adversities throughout their lifetime, as reported by their caregivers. Specifically, 28.2% ($n = 60$) of the children had someone close to them die; 26.3% ($n = 56$) experienced the serious illness of a close friend or family member which required hospitalization; 24.9% ($n = 53$) had caregivers who had lost their job and could not find work; 21.6% ($n = 46$) had families who often argued or fought; 13.1% ($n = 28$) experienced teasing or bullying; 8.9% ($n = 19$) had caregivers whose drug or alcohol use created problems; 8.0% ($n = 17$) knew someone who had been in a very bad accident; 5.2% ($n = 11$) had caregivers who went to jail or prison; and 3.3% ($n = 7$) experienced significant adversities such as living in the street or in a shelter, being sent or taken away from family, or seeing a dead body in the home, streets, or neighbourhood. Finally, 2.8% ($n = 6$) of the children had to repeat a grade, and 1.4% ($n = 3$) were either in a bad fire, flood, storm, or other natural disaster or in a bad accident that required hospitalization.

Aim 2: Frequency of victimization and demographic differences.

Lifetime victimization rates. Children in this school-aged sample were exposed to a breadth of victimization forms in their lifetimes ($M = 2.78$; $SD = 1.43$; range = 0 to 7).

Among school-aged children who were reported to have experienced at least one type of

victimization during their lifetime (97.2%, $n = 207$), 17.4% were exposed to only one lifetime victimization form, 25.8% were exposed to two forms, 23.9% were exposed to three forms, 16.0% were exposed to four forms, 11.3% were exposed to five forms and, finally, 2.8% were exposed to six forms.

As can be seen in Table 5, 86.9% ($n = 185$) of the sample had experienced two or more types of lifetime victimization, and 10.8% ($n = 23$) had lifetime poly-victimization. Victimized children had been exposed to an average of 6.58 ($SD = 5.21$, range = 1-31) victimizations in their lifetime. On average, 4.10 ($SD = 2.83$, range = 0-14) of these lifetime victimization experiences were classified as direct victimization (as opposed to witnessing/indirect violence). According to Table 5, the most common victimization form was peer and/or sibling victimization ($n = 178$; 83.6%), followed by conventional crimes ($n = 157$; 73.7%), witness/indirect victimization ($n = 93$; 43.7%), exposure to family violence ($n = 69$; 32.4%), maltreatment ($n = 59$; 27.7%), sexual victimization ($n = 20$; 9.4%), and Internet victimization ($n = 13$; 6.1%).

Sex differences. Table 5 indicates that boys were reported by caregivers to have experienced a slightly greater number of lifetime victimizations than girls ($t = -2.19$, $p < .05$; $d = 0.28$, 95% CI = [0.01, 0.55]), with an average of 7.09 victimizations ($SD = 5.35$) for boys and 5.61 victimizations ($SD = 5.05$) for girls. There were no statistically significant sex differences in multiple and poly-victimization status, but there was a trend suggesting that boys more often experienced multiple and poly-victimization, compared to girls.

There were no statistically significant sex differences based on victimization forms, with the exception of exposure to family violence and physical assaults (subscale of conventional crimes). For exposure to family violence, boys (38.4%) were reported to have

greater exposure than girls (25.7%; $\chi^2 = 3.88, p < .05$). For physical assaults, boys also experienced greater exposure than girls (88.4% and 76.2%, respectively; $\chi^2 = 5.46, p < .05$). Finally, there was a statistical trend for school-aged boys to experience more maltreatment than girls (32.1% and 22.8%, respectively).

Turning to victimization types, boys were more frequently exposed to the following, compared to girls: (a) assault with a weapon ($\chi^2 = 5.46, p < .05$); (b) assault without a weapon ($\chi^2 = 9.44, p < .001$); (c) attempted assault ($\chi^2 = 5.81, p < .01$); (d) theft ($\chi^2 = 5.62, p < .01$); (e) psychological and emotional maltreatment ($\chi^2 = 4.40, p < .05$); (f) genital assault ($\chi^2 = 26.03, p < .001$); and (g) exposure to a war zone ($\chi^2 = 4.26, p < .05$). Girls, on the other hand, were found to more frequently witness, compared to boys, a grown-up or teen get push, hit or beat up another ($\chi^2 = 3.16, p < .01$).

Age differences. There were statistically significant age differences for the following victimization forms: maltreatment ($F[6, 206] = 2.46, p < .05; \eta^2 = .07$); conventional crimes ($F[6, 206] = 2.99, p < .01, \eta^2 = .08$); and Internet victimization ($F[6, 206] = 2.85, p < .01; \eta^2 = .08$). Increasing age was associated with greater exposure to these particular victimization forms. Figure 1 illustrates the trend for victimization exposure to generally increase with age in this school-aged sample, followed by a decrease at around age 12. More specifically, an increase in victimization exposure is noticeable in 10-11 year olds, with the exception of sexual and Internet victimization.

Post hoc analyses (LSD) revealed that 6 year olds were exposed to less maltreatment ($M = .19; SD = .51; n = 58$), compared to 10 year olds ($M = .67; SD = .80; n = 21; d = -0.80, 95\% CI = [-1.32, -0.29]$), 11 year olds ($M = .67; SD = 1.12; n = 9; d = -0.77, 95\% CI = [-1.49, 0.06]$), and 12 year olds ($M = .64; SD = 1.05; n = 22; d = -0.65, 95\% CI = [-1.15, -$

0.14]). Similarly, 8 year olds were exposed to less maltreatment ($M = .22$; $SD = .42$; $n = 27$), compared to 10 year olds ($d = -0.73$, 95% CI = [-1.32, -0.14]) and 12 year olds ($d = -0.55$, 95% CI = [-1.12, 0.03]). For conventional crimes, post-hoc analyses found that 11 year olds had greater exposure compared to all other age groups. Specifically, these were the following findings: 11 year old experiences ($M = 4.0$, $SD = 1.87$, $n = 9$) were greater than those of 6 year olds ($M = 1.74$; $SD = 1.49$; $n = 58$; $d = 1.47$, 95% CI = [0.72, 2.21]), 7 year olds ($M = 1.65$; $SD = 1.66$; $n = 54$; $d = 1.39$, 95% CI = [0.66, 2.14]), 8 year olds ($M = 1.82$; $SD = 1.55$; $n = 27$; $d = 1.19$, 95% CI = [.39, 1.99]), 9 year olds ($M = 1.73$, $SD = 1.61$; $n = 22$, $d = 1.35$, 95% CI = [.50, 2.19]), 10 year olds ($M = 1.91$, $SD = 1.90$, $n = 21$, $d = 1.24$, 95% CI = [.40, 2.08]), and 12 year olds ($M = 1.36$, $SD = 1.94$, $n = 22$, $d = 1.37$, 95% CI = [.53, 2.22]). For Internet victimization, post-hoc analyses showed that 8, 10, and 11 year olds had greater exposure ($M_{8yrs} = .15$, $SD_{8yrs} = .46$; $M_{10yrs} = .19$, $SD_{10yrs} = .40$; $M_{11yrs} = .22$, $SD_{11yrs} = .44$) than the other age groups (d ranged from 0.57, [95% CI = 0.52, 0.63] to 1.41 [95% CI = 1.38, 1.45]). Analyses also indicated a statistical trend for peer and/or sibling victimization ($F[6,206] = 1.81$; $p = .098$), with post-hoc analyses suggesting that 11 year olds had greater exposure to this form of victimization compared to the other age groups.

Socio-demographics across victimization exposure. Table 6 presents socio-demographic information as a function of lifetime victimization exposure, namely non-victimization, single victimization (1 type), multiple victimization (2+ types), and poly-victimization (various classification rules based on the child's age). A series of chi-squared and ANOVA analyses were run to assess for potential socio-demographic differences but, due to low frequencies, lifetime non-victims ($n = 6$) were excluded from the analyses.

There were statistically significant differences on the following variables: (a) income

($F [2, 204] = 5.53, p < .01; \eta^2 = .03$); (b) non-victimization lifetime adversities ($F [2, 204] = 19.00, p < .001; \eta^2 = .16$); (c) clinical subgroup membership ($\chi^2 = 8.53, df = 2, p < .01$); (d) family structure ($\chi^2 = 14.20, df = 6, p < .05$); and (e) caregiver education ($F [2, 204] = 3.85, p < .05; \eta^2 = .04$). Post hoc analyses (LSD) were conducted to better understand the nature of these differences. For income, poly-victims had significantly lower household incomes than the other groups. While the median household income ranged from \$90,000-109,999 for the single- and multiple-victims, children classified as poly-victims had a median household income of \$70-79,999. Poly-victims also had a greater number of non-victimization lifetime adversities ($M = 3.26, SD = 1.68$), compared to single- and multiple-victims ($M = 0.73, SD = 0.98; M = 1.53, SD = 1.48$, respectively). Lifetime poly-victims were also more likely to be in the clinical subgroup (39.1%) than children in the single- and multiple-victim groups (13.6% and 14.8%, respectively). For family structure, chi-squared analyses were conducted using a dichotomized marital status variable for intact (married or common-law two biological parent household) and non-intact (stepfamily or single parent household) families. Analyses indicated that children classified as poly-victims were most likely to be part of a non-intact family (43.5%) than single victimization (27.3%) and multiple victimization (17.3%) children ($\chi^2 = 8.79, df = 2, p < .01$). For caregiver education, post hoc analyses demonstrated that caregivers of poly-victims were more likely to report high school as their highest completed education (30.4%), compared to caregivers of single- and multiple-victims (13.6% and 13.0%, respectively).

Additional analyses were conducted comparing poly-victims to non-poly-victims to conserve statistical power and allow for a more exhaustive examination of the socio-demographic constructs. Poly-victims were found to be more likely to be in the clinical

subsample ($\chi^2 = 9.07$, $df = 1$, $p < .01$; 39.1% and 14.2%, respectively) and to report a lower household income ($Mdn = \$70-79,999$), compared to children who were not classified as poly-victims ($Mdn = \$100-109,999$; $t = 3.38$, $df = 211$, $p < .001$; $d = -.75$, 95% CI = [-1.19, -.31]). Poly-victims also experienced a significantly greater number of non-victimization life adversities ($M = 3.26$, $SD = 1.68$), compared to non-poly-victims ($M = 1.42$, $SD = 1.45$), $t = -5.63$, $df = 2$, $p < .001$; $d = 1.32$, 95% CI = .86-1.77. More specifically, lifetime poly-victims were significantly more likely to experience the following life adversities : (a) seeing a dead body (13.0% of lifetime poly-victims vs. 2.1% for non-lifetime-poly-victims, $\chi^2 = 7.72$, $df = 211$, $p < .05$); (b) having caregivers that are always arguing, yelling, and angry at each other (65.2% vs. 16.3%; $\chi^2 = 28.98$, $df = 211$, $p < .001$); (c) having a family member whose drinking or drug used caused problems (21.7% vs. 7.4%; $\chi^2 = 5.22$, $p < .05$); (d) being sent away or taken from home (13.0% vs. 2.1%; $\chi^2 = 7.72$, $df = 211$, $p < .05$); (e) having a time when the family had to live in street or in a shelter (13.0% vs. 2.1%; $\chi^2 = 13.81$, $df = 211$, $p < .05$); (f) having someone close that had a very bad illness requiring hospitalisation (43.5% vs. 24.3%; $\chi^2 = 3.93$, $df = 211$, $p < .05$); and (g) having a caregiver that lost a job and could not find work (56.5% vs. 21.1%; $\chi^2 = 13.81$, $df = 211$, $p < .001$). There was also a statistical trend for lifetime poly-victims being more likely to have had a caregiver go to prison (13.0% vs. 4.2%; $\chi^2 = 3.27$, $df = 211$, $p < .10$). There also was a statistical trend for poly-victims to be part of a non-intact household (i.e., step-family [43.5% vs. 13.7%], single parent [21.7% vs. 4.7%] households; $\chi^2 = 2.78$, $p < .10$).

Past-year victimization rates. According to caregiver reports, the majority of children (85.9%) were exposed to at least one victimization experience in the past year, with an average of 3.68 reported victimizations ($SD = 2.91$; range 0-21). Children in the sample

were exposed to a wide range of victimization forms ($M = 1.73$; $SD = 1.16$; range 0 to 5). Specifically, 31.5% of children were exposed to one victimization form in the past-year, 31.5% were exposed to two forms, 16.0% were exposed to three forms, 5.2% were exposed to four forms, and 1.9% were exposed to five forms in the past year alone.

Table 7 indicates that 65.7% of children experienced two or more victimizations in the past year alone, and 23.0% were categorized as poly-victims, defined as exposure to five or more victimization experiences in the past year (Finkelhor et al., 2009c). Note that 65.4% of children were exposed to two or more direct victimizations in the past year, as opposed to having witnessed victimization. As was the case with lifetime victimization rates, the most common past-year victimization forms were peer and/or sibling victimization ($n = 147$; 69.0%), conventional crimes ($n = 108$; 50.7%), witness/indirect victimization ($n = 47$; 22.1%), exposure to family violence ($n = 28$; 13.1%), maltreatment ($n = 20$; 9.4%), sexual victimization ($n = 9$; 4.2%), and Internet victimization ($n = 8$; 3.8%).

Sex differences. As illustrated in Table 7, boys ($n = 112$; $M = 3.30$; $SD = 2.87$) were more likely than girls ($n = 101$; $M = 2.49$; $SD = 2.87$) to experience a greater number of victimizations in the past year ($t = -2.30$, $df = 211$, $p < .01$; $d = 0.26$, 95% CI = [.01-.53]). Compared to girls, boys were significantly more likely to have experienced maltreatment in the past year, as reported by their caregivers (13.4% and 5.0% respectively; $\chi^2 = 4.45$, $p < .05$). Boys also experienced significantly more physical assaults (conventional crimes subscale) than girls (70.5% and 56.4%, respectively; $\chi^2 = 4.57$, $p < .05$). Turning to specific victimization types, boys were significantly more likely to have experienced the following: (a) assault without a weapon ($\chi^2 = 4.34$, $p < .05$); (b) attempted assault ($\chi^2 = 4.97$, $p < .05$);

(c) genital assault ($\eta^2 = 10.26, p < .001$); and (d) witnessing a grown-up or teen pushing someone in their home ($\eta^2 = 2.26, p < .05$).

Age differences. There were significant age differences for past-year victimization in peer and/or sibling victimization ($F[6,206] = 2.34, p < .05, \eta^2 = .06$), with younger children more likely to have been exposed to this victimization form. Post hoc analyses (LSD) revealed that 12 year olds experienced significantly less peer and/or sibling victimization ($M = .59; SD = .80$) than 6 year olds ($M = 1.38; SD = 1.24; d = -.70, 95\% CI = [-1.19, -.20]$), 7 year olds ($M = 1.59; SD = 1.21; d = -.91, 95\% CI = [-1.41, -.40]$), 8 year olds ($M = 1.00; SD = .88; d = -0.49, 95\% CI = [-1.05, 0.08]$), and 9 year olds ($M = 1.32; SD = 1.29; d = -0.68, 95\% CI = [-1.29, -0.08]$). A statistical trend was found for the physical assaults subscale of conventional crimes ($F[6,206] = 1.79, p = .10; \eta^2 = .05$), and post-hoc (LSD) analyses revealed that 12 year olds seemed to experience less of this form of victimization ($M = .55; SD = .80$) than 6 year olds ($M = 1.19; SD = 1.13; d = -0.61, 95\% CI = [-1.10, -0.12]$) and 7 year olds ($M = 1.37; SD = 1.25; d = -0.72, 95\% CI = [-1.23, -0.22]$). A statistical trend was also found for maltreatment ($F[6,206] = 2.00, p = .07; \eta^2 = .06$), with 6 year olds experiencing less of this victimization form ($M = .04; SD = .18$) compared to 7 year olds ($M = .17; SD = .42; d = -0.41, 95\% CI = [-0.78, -0.03]$) and 9 year olds ($M = .23, SD = .53; d = -0.60, 95\% CI = [-1.10, -0.10]$).

Socio-demographics across victimization exposure. Socio-demographic differences across the following levels of victimization exposure in the past year were examined and are presented in Table 8: (a) non-victim ($n = 30; 14.1\%$); (b) single victim ($n = 48; 22.5\%$); (c) multiple-victim ($n = 88; 41.3\%$), and (d) poly-victim ($n = 47; 22.1\%$). A series of one-way ANOVAs found that age differed significantly across victimization exposure ($F [212, 3] =$

3.53, $p < .05$), with post hoc analyses (LSD) confirming that past-year poly-victims were more likely to be younger ($M = 7.38$; $SD = 1.45$), compared to non-victims ($M = 8.80$; $SD = 2.28$; $d = -0.78$, 95% CI = [-1.26, -0.31]) and single victims ($M = 8.25$, $SD = 2.10$; $d = -0.48$, 95% CI = [-0.88, -0.07]). Lifetime victimization rates were also found to differ across victimization categories ($F [3, 209] = 19.57$, $p < .001$; $\eta^2 = .39$), with post-hoc analyses (LSD) revealing that past-year poly-victims experienced more lifetime victimization ($M = 10.43$; $SD = 4.72$) than past-year non-victims ($M = 4.77$; $SD = 7.53$; $d = 0.95$, 95% CI = [0.47, 1.43]), past-year single-victims ($M = 3.38$; $SD = 2.69$; $d = 1.84$, 95% CI = [1.36, 2.32]) and past-year multiple-victims ($M = 6.43$; $SD = 4.22$; $d = 0.91$, 95% CI = [0.54, 1.28]). Similarly, past-year victimization categories differed according to exposure to non-victimization lifetime adversities ($F [3, 209] = 4.541$, $p < .01$; $\eta^2 = .06$), with post-hoc analyses (LSD) revealing that single-victims had significantly fewer lifetime adversities ($M = 1.04$, $SD = 1.11$), compared to multiple-victims ($M = 1.65$, $SD = 1.56$; $d = -0.43$, 95% CI = [-0.79, -0.08]) and poly-victims ($M = 2.19$, $SD = 1.69$; $d = -0.81$, 95% CI = [-1.22, -0.39]).

Additional analyses compared children who experienced poly-victimization in the past year ($n = 47$) to children who did not experience poly-victimization ($n = 166$) on socio-demographic variables. This again preserved statistical power and allowed for a more in-depth examination of the socio-demographic constructs. Results indicated that past-year poly-victims were more likely to be younger ($M = 7.38$; $SD = 1.45$) than non-poly-victims ($M = 8.23$; $SD = 2.06$; $t = 3.19$, $p < .001$; $d = -0.44$, 95% CI = [-0.77, -0.11]) and have a greater number of non-victimization adversities ($M = 2.19$, $SD = 1.69$; $n = 47$) compared to their non-poly-victimized peers ($M = 1.46$, $SD = 1.52$; $n = 166$), $t = -2.86$, $df = 211$, $p < .01$; $d = 0.47$, 95% CI = [0.14, 0.80]). Past-year poly-victims were more likely to experience the

following adversities: (a) seeing a dead body (5.18, $p < .05$; 8.5% vs. 1.8%); (b) having caregivers that are always arguing, yelling, and angry at each other (34.0% vs. 18.1%; $\chi^2 = 5.52$, $df = 211$, $p < .01$); (c) having a caregiver that lost a job and could not find work (36.2% vs. 21.7%; $\chi^2 = 4.11$, $df = 211$, $p < .05$); (d) having a very bad illness requiring hospitalisation (21.3% vs. 7.2%; $\chi^2 = 7.80$, $df = 211$, $p < .01$) compared to their peers who did not experience poly-victimization in the past year. Similarly to lifetime rates, there was also a statistical trend for children who experienced poly-victimization in the past year being more likely to have had a caregiver go to prison (10.6% vs. 3.6%; $\chi^2 = 3.69$, $df = 211$, $p < .10$). There also was a statistically significant difference for family structure ($X^2 = 8.48$; $p < .05$), with past-year poly-victims more often residing in single-parent households (14.3% compared to 4.3% for non-poly-victims). The following statistical trend was found: past-year poly-victims were more likely to be receiving or be on waitlist for psychological services and/or have a mental health diagnosis (25.5%), compared to non-poly-victims (14.5%; $X^2 = 3.20$; $p = .06$).

Aim 3: Adversities and victimizations across clinical and community

subsamples. Now that we have examined the frequency of non-victimization lifetime adversities (Aim 1) as well as the frequency of victimization experiences (lifetime and past-year), including the ways in which exposure may differ as a function of socio-demographic factors (Aim 2), we will now turn to the third aim of examining whether children from clinical and community settings varied on victimization experiences and lifetime non-victimization adversities. Compared to children in the community subsample ($n = 177$), analyses revealed that the clinical subsample ($n = 36$) was significantly more likely to have a greater number of non-victimization lifetime adversities ($t = -1.94$, $df = 211$, $p < .05$; $d =$

0.35, 95% CI = [0.01, 0.71]), past-year victimization ($t = -2.11$; $p < .05$; $d = 0.39$, 95% CI = [0.03, 0.75]), and lifetime victimization ($t = -2.76$; $df = 211$, $p < .01$; $d = 0.51$, 95% CI = [0.15, 0.87]). More specifically, children in the clinical subgroup experienced an average of 2.08 ($SD = 1.54$) non-victimization lifetime adversities, compared to children in the community subgroup who experienced an average of 1.53 ($SD = 1.58$). Further, while the community subgroup experienced an average of 2.97 ($SD = 2.90$) past-year victimizations, children in the clinical subgroup experienced an average of 4.11 ($SD = 3.22$) victimizations. Turning to lifetime victimization rates, children in the clinical subgroup experienced an average of 8.56 ($SD = 6.05$), while those in the community subgroup experienced an average of 5.94 ($SD = 4.97$).

Table 9 presents the percentage of children in the community and clinical subgroups who experienced *any* of the various victimization forms. Children in the clinical subgroup were more likely to experience a significantly greater number of conventional crimes in the past year ($t = -2.71$, $df = 211$, $p < .01$; $d = 0.50$, 95% CI = [0.14, 0.86]) and in their lifetime ($t = -3.32$, $df = 211$, $p < .001$; $d = 0.60$, 95% CI = [0.24, 0.97]), compared to the community subgroup. The clinical subgroup was also significantly more likely to experience lifetime peer and/or sibling victimization than children in the community subgroup ($t = -2.39$, $df = 211$, $p < .05$; $d = 0.43$, 95% CI = [0.07, 0.79]). There was also a trend for children in the clinical subsample to experience a greater number of past-year maltreatment experiences ($t = -1.57$, $df = 211$, $p = .10$; $d = 0.23$, 95% CI = [0.12, 0.57]), sexual victimizations ($t = -1.82$, $df = 211$, $p = .07$; $d = 0.33$, 95% CI = [-0.02, 0.69]), and peer and/or sibling victimization ($t = -1.57$, $df = 211$, $p = .10$; $d = 0.29$, 95% CI = [0.07, 0.65]). Similarly, there was a trend for children in the clinical sample to experience a greater number of lifetime maltreatment

experiences ($t = -1.73$, $df = 211$, $p = .09$; $d = 0.32$, 95% CI = [0.04, 0.68]). Figure 2 illustrates the mean number of lifetime victimization experiences by children in clinical and community subgroups and illustrates a general trend for the clinical subsample to experience a greater mean number of victimization across the seven victimization forms. The figure also illustrates that while the clinical subsample tended to experience a greater number of victimization types than the community sample, the forms of victimization experienced were similar across the subsamples, with exposure to conventional crimes and peer and/or sibling being most frequent and sexual and internet victimization being least frequent.

Summary of results for Aims 1 to 3. The first three aims sought to better understand school-aged children's past-year and lifetime exposure to victimization and lifetime non-victimization adversities. In addition, the association between these adversities and socio-demographic factors, including child sex and age, was examined. Results revealed that children were commonly exposed to a range of non-victimization adversities over their lifetime as well as a breadth of victimization experiences in the past year and over their lifetime. In addition, most children experienced multiple victimization, and an important minority of children experienced poly-victimization (1 in 10 for lifetime; 1 in 5 for past year). The most common victimization forms (both lifetime and past-year rates) experienced by children were, in order of frequency: (a) peer and/or sibling victimization; (b) conventional crimes; (c) witness/indirect victimization; (d) exposure to family violence, (e) maltreatment; (f) sexual victimization; and (g) Internet victimization.

Socio-demographic factors were found to vary according to categories of victimization exposure (including poly-victim status), with effect sizes ranging from moderate to large. Specifically, poly-victims were more likely to come from lower income,

non-intact households and to have caregivers with lower educational levels. Turning to sex differences, boys were found to experience a greater number of victimization experiences, in particular physical assaults. This sex difference was found for both lifetime and past-year rates, although effect sizes were smaller for past-year rates. Boys were also more likely to experience more past-year maltreatment as well as more lifetime exposure to family violence, compared to girls. Victimization exposure also varied as a function of child age, with younger children having greater exposure to victimization in the past-year, particularly peer and/or sibling victimization, than older children. However, older children accumulated a greater number of victimization experiences in their lifetime than younger children, specifically maltreatment, conventional crimes, and Internet victimization.

The clinical and community subsamples differed on exposure to victimization and lifetime non-victimization adversities, with the clinical subsample experiencing a greater mean number of lifetime adversities and victimizations. With regard to particular victimization forms, children in the clinical subsample experienced significantly more lifetime conventional crimes and peer and/or sibling victimization. While most subsample analyses did not achieve statistical significance, the group differences yielded moderate to large effect sizes, with low base rates events (e.g., Internet and sexual victimization) yielding the lowest effect sizes. As moderate and large effect sizes were found, this suggests that these two subsamples did indeed differ based on victimization experiences and, rather, the non-statistically significant results probably were indicative of a power issue. With a larger sample, these analyses would most probably reach statistical significance.

Objective 2: Co-occurrence among victimization experiences (Aim 4)

Objective 1 (Aims 1 through 3) focused on the frequency of children's victimization experiences and examined whether victimization exposure differed across a variety of socio-demographic factors, including child sex, age, and membership to the clinical subsample. Aim 4 examined co-occurrence among the seven victimization forms. The analyses focused on lifetime rates, which are very similar to past-year rates, to conserve statistical power. Indeed, lifetime rates and past-year rates were found to be significantly correlated ($r = .58, p < .001$), and findings suggest that the majority of children who experienced multiple victimization in their lifetime also experienced multiple victimization in the past year (63%; $\chi^2 = 55.29, df = 211, p < .001$). Similarly, lifetime poly-victimization status similarly predicted past-year poly-victimization status, with 60.9% of children who experienced poly-victimization in their lifetime also experiencing poly-victimization in the past year ($\chi^2 = 22.58, df = 211, p < .001$).

In addition to focusing on lifetime victimization, the analyses for Aim 4 included all research participants ($N = 213$) and did not separate children based on their membership to the clinical subsample. The subsamples were not examined for this aim as the research question did not seek to examine whether co-occurrences differed across clinical and community subsamples, but rather to examine co-occurrences more generally. In addition, as the frequency of children in the current sample that met criteria for membership in the clinical subsample was similar to the rates in the community (as indicated by population data), the overall sample would be best described as a community sample.

Table 10 presents the percentage of children exposed to one form of victimization who were also exposed to additional forms in their lifetime. Findings indicate considerable

overlap among lifetime victimization forms, in particular for sexual victimization, Internet victimization, and maltreatment. Indeed, while these more “*severe*” forms of victimization were less prevalent in the sample, findings indicate that they tended to co-occur. Internet victimization, compared to other victimization forms, had the highest percentage of children who also experienced sexual victimization (23.1%) and maltreatment (53.8%). In addition, children exposed to sexual victimization had the highest rate of exposure to Internet victimization (15.0%). More commonly occurring victimization forms were less related to severe victimizations. For example, out of the 178 children who experienced peer and/or sibling victimization, only 10.7% also experienced sexual victimization. However, out of the 20 children that experienced sexual victimization, 95.0% also experienced peer and/or sibling victimization. Table 10 illustrates that children with any victimization exposure, regardless of victimization form, tended to also experience conventional crimes (Range = 73.9% - 90%) and peer and/or sibling victimization (88.2% - 100%). For example, out of the 93 children exposed to witness/indirect victimization (e.g., witnessing assaults with or without weapons, exposure to shootings or war zones), 89.2% also experienced conventional crimes, and 88.2% also experienced peer and/or sibling victimization.

Findings also indicated that maltreatment and exposure to family violence commonly co-occurred with one another; out of the 59 children who experienced maltreatment, 52.5% also experienced exposure to family violence, and, out of the 69 children who experienced exposure to family violence, 44.9% also experienced maltreatment. Furthermore, maltreatment and exposure to family violence were often associated with exposure to peer and/or sibling victimization. For example, out of the 59 children who experienced maltreatment, 93.2% also experienced peer and/or sibling victimization. In addition, out of

the 69 children who experienced exposure to family violence, all of them also experienced peer and/or sibling victimization. However, only approximately one third of children exposed to peer and/or sibling victimization also experienced maltreatment (30.9%) or exposure to family violence (34.3%).

Victimization profiles⁴. In addition to examining the overlap among victimization forms by way of cross-tabulations, the co-occurrence of victimization forms was further evaluated by means of identifying victimization profiles . All 128 (2^7) potential combinations of victimization forms were calculated after having dichotomized each of the seven forms into a dichotomous variable (*exposure* or *no exposure*). Of the 128 potential combinations, there were frequency data for 44 different profiles, and the majority of identified profiles were reflective of exposure to multiple forms of victimization .

Table 11 presents the top 15 victimization profiles, which captured the majority (77.1%) of the sample. Exposure to no victimization exposure was one of the victimization profiles, but it only captured the experiences of a small minority (3.3%) of children. The majority of victimization profiles reflected exposure to multiple victimization forms, with 22.7% ($n = 10$) of the 44 profiles reflecting exposure to two victimization forms, 22.7% ($n = 10$) reflecting exposure to three victimization forms, 20.5% ($n = 9$) reflecting exposure to four victimization forms, 13.6% ($n = 6$) reflecting exposure to five different victimization forms, 6.8% ($n = 3$) reflecting exposure to 5 forms and, finally, 2.3% ($n = 1$) reflecting exposure to all seven victimization forms. Findings indicate that only two of the top 15 victimization profiles reflected exposure to one victimization form, namely Profile 3 (peer and/or sibling victimization) and Profile 5 (conventional crimes). In other words, exposure to

⁴ Results of a cluster analysis are presented in Appendix L.

multiple forms of victimization was experienced by the vast majority of victimized children (approximately 8 of 10 children).

Peer and/or sibling victimization, along with conventional crimes, were represented most often among the top 15 profiles, and the most commonly occurring profile (Profile 1) was that of exposure to peer and/or sibling victimization and conventional crimes. Indeed, with the exception of Profile 10 (no victimization exposure), exposure to either peer and/or sibling victimization or conventional crimes was represented in each of the top 15 profiles. Maltreatment or exposure to family violence were represented in 8 of the top 15 victimization profiles. Interestingly, of the 12 profiles which represented multiple victimization, 7 profiles (58.3%) had maltreatment and/or exposure to family violence as part of the profile. However, exposure to family violence and maltreatment, while often overlapping together, did not always co-occur, with 6 of the 15 profiles (40%) representing either maltreatment or exposure to family violence only. Sexual victimization and Internet victimization were least likely to be experienced by children in the sample. Specifically, Internet victimization was not represented in the top 15 profiles, and sexual victimization was captured in only 2 of the top 15 profiles. Table 11 further illustrates that the victimization forms experienced by school-age children in the current sample appear to be forms that are typically experienced in the home (e.g., maltreatment, peer and/or sibling) or in the school (e.g., conventional crimes, peer and/or sibling, witness/indirect victimization), compared to forms typically experienced in the wider community (e.g., Internet victimization, sexual victimization).

Summary of Objective 2 (Aim 4) results. Results demonstrated significant interconnections among exposure to different victimization forms. Results illustrated that

children in the sample were exposed to *multiple* forms of victimizations, with peer and/or sibling victimization as well as conventional crimes most often characterizing the victimization experiences of children. Exposure to family violence and maltreatment often co-occurred with peer and/or sibling victimization. In addition, witness/indirect victimization often co-occurred with exposure to conventional crimes and with peer and/or sibling victimization. Interestingly, exposure to family violence and/or maltreatment were identified in the majority of profiles that captured exposure to multiple forms of victimization. The overlap among forms tended to be more pronounced with severe forms of victimization (e.g., sexual victimization), albeit these were not a common experience in this sample (as indicated by the profiles). On the other hand, less severe victimization forms (e.g., peer and/or sibling victimization), which were more frequently experienced by children in the sample, co-occurred less often with these more severe forms. In other words, findings illustrated that, while a minority, there exists a subgroup of children exposed to severe victimization forms and these children tend to be exposed to a noteworthy breadth of victimization forms.

The notable associations among victimization forms speak to a *condition* of victimization, with exposure to multiple forms being the norm among victimized children. Specific to this school-age sample, it appears that most forms experienced represent victimizations that typically occur in the home or at school and that, in addition, exposure to family violence and maltreatment often co-occur with multiple other victimization forms.

Objective 3: Associations Between Victimization and Psychosocial Difficulties

Aim 5: Psychosocial correlates of multiple victimization. To examine the relationship between victimization exposure and caregiver-reported psychosocial functioning in children, the following Trauma Symptom Checklist for Young Children (TSCYC)

symptom scales were used: Posttraumatic Stress; Anxiety; Anger/Aggression; and Depression. Figures 3 through 6 illustrate the association between children's victimization exposure and psychosocial functioning. Findings suggest a linear or dose-response relationship between lifetime victimization and psychological difficulties, across all four psychosocial correlates. Specifically, as exposure to victimization increased, psychosocial symptoms also increased. Also, children with the greatest number of victimizations, which were a minority of the overall sample, were generally represented in the top of the distribution of psychosocial scores. The figures also demonstrate that 75% of the sample was exposed to 7 or fewer victimization types and that most children in the sample obtained generally low scores on the TSCYC scales.

Several analyses were conducted to elucidate the various ways in which exposure to lifetime victimization was associated with psychosocial difficulties. First, by way of a one way ANOVA, the association between these four scales and the following lifetime victimization groups was examined: (a) single victims ($n = 22$); (b) multiple-victims ($n = 162$); and (c) poly-victimization ($n = 23$). Results revealed that the groups varied across Posttraumatic Stress ($F[204, 2] = 18.82, p < .001; \eta^2 = .16$), Anxiety ($F[204, 2] = 14.28; p < .001; \eta^2 = .12$), Anger/Aggression ($F[204, 2] = 8.33; p < .001; \eta^2 = .08$), and Depression ($F[204, 2] = 8.97, p < .001; \eta^2 = .08$). Post hoc analyses (LSD) revealed that poly-victims experienced a significantly greater number of Posttraumatic Stress symptoms ($M = 12.83, SD = 5.72$), compared to single-victims ($M = 4.46, SD = 4.71; d = 1.59, 95\% CI = [0.92, 2.27]$) and multiple-victims ($M = 6.86, SD = 4.83; d = 1.21, 95\% CI = [0.75, 1.66]$). Poly-victims had a significantly greater number of Anxiety symptoms ($M = 5.48, SD = 3.40$), compared to single-victims ($M = 1.82, SD = 2.65; d = 1.20, 95\% CI = [0.56, 1.83]$) and

multiple-victims ($M = 2.77$, $SD = 2.35$; $d = 1.08$, 95% CI = [0.63, 1.54]). Poly-victims had a significantly greater number of Anger/Aggression symptoms ($M = 5.09$, $SD = 3.37$), compared to single-victims ($M = 1.77$, $SD = 2.18$; $d = 1.16$, 95% CI = [0.53, 1.80]) and multiple-victims ($M = 3.09$, $SD = 2.76$; $d = 0.70$, 95% CI = [0.26, 1.15]). Finally, poly-victims had a significantly greater number of Depression symptoms ($M = 4.44$, $SD = 2.29$), compared to single-victims ($M = 1.64$, $SD = 1.56$; $d = 1.42$, 95% CI = [.77, 2.08]) and multiple-victims ($M = 2.94$, $SD = 2.29$; $d = 0.66$, 95% CI = [.21, 1.10]). In terms of potential differences between the single-and multiple-victimization groups, results indicated statistically significant differences on Depression ($d = 0.59$, 95% CI = [0.14, 1.04]), Anger/Aggression ($d = 0.49$, 95% CI = [0.05, 0.94]), and Posttraumatic Stress symptoms ($d = 0.50$, 95% CI = [0.05, 0.95]). Specifically, children who experienced multiple victimization had higher scores across these three subscales, compared to children with single victimization experiences.

The next series of analyses examined the ways in which specific lifetime victimization forms might be related with psychosocial difficulties, controlling for socio-demographic variables and victimization exposure (sum of lifetime victimization experiences). It was important to include this latter variable in order to evaluate the predictive ability of individual victimization forms after controlling for lifetime exposure. Considering the rows where analyses have not taken lifetime victimization exposure into account, Tables 12 and 13 show that the majority of lifetime victimization forms were significantly associated with psychosocial functioning. In particular, the greater the number of experiences within the various victimization forms, the greater the number of posttraumatic symptoms (range $B = .73$ to 2.98), anxiety (range $B = .47$ to 2.53), depression

(range $B = .28$ to $.99$), and aggression/anger (range $B = .45$ to 1.25). There were several exceptions: Internet victimization was not significantly associated with depression or anger/aggression, maltreatment was not significantly associated with anger/aggression, and sexual victimization only approached a statistical trend for anxiety.

Tables 12 and 13 also indicate that, after controlling for lifetime victimization exposure, none of the associations between specific lifetime victimization forms and psychosocial difficulties remained statistically significant. Indeed, the greater the exposure to lifetime victimization, the weaker the association with the psychosocial difficulties. There appear to be exceptions, however, for sexual victimization, Internet victimization, and maltreatment. While these forms were no longer statistically significant, they were still positively associated to psychosocial difficulties. This suggests that, with a larger sample size (and therefore greater statistical power), these victimization forms may have remained important predictors of psychosocial difficulties, even after controlling for lifetime victimization exposure. The inclusion of the lifetime victimization exposure score significantly increased the variance accounted for by the model (R^2) for all psychosocial correlates (F_{change} range = 5.81 to 46.03), and this increase was most elevated for Internet victimization. While all models with the victimization exposure variable were significant, victimization exposure accounted for the greatest amount variance in posttraumatic stress (R^2 range = $.25$ to $.50$), followed by anger/aggression (R^2 range = $.18$ - $.21$), anxiety (R^2 range = $.16$ to $.19$), and, lastly, depression (R^2 range = $.11$ - $.19$).

Aim 6: Weighting techniques. The purpose of these analyses was to examine the impact of weighting methods on the predictive ability of victimization models. Finkelhor et al.'s (2009b) methodology was adopted so that victimization forms (which were

dichotomized into no or any exposure) that continued to predict psychosocial symptoms over-and-above the lifetime victimization exposure variable were weighted by 1-unit increments. This process was continued until each individual victimization form no longer contributed to the variance of the model, over-and-beyond the lifetime victimization exposure variable.

These analyses did not include the forms of Internet victimization and exposure to family violence in order to be consistent with Finklehor et al. (2009b), who used an earlier version of the JVQ that did not include these supplementary forms. Instead, the following victimization forms were examined: (a) maltreatment; (b) sexual victimization; (c) sexual assault; (d) physical assault; (e) property crimes; and (f) witness/indirect victimization. Items were summed within each of the forms but also across the forms to create a lifetime victimization exposure variable. The sexual assault scale was essentially a subscale of sexual victimization (items 1 through 4 of the seven sexual victimization items), and it was significantly correlated with the sexual victimization scale ($r = 0.53$). As such, it was dropped from analyses to avoid redundancy. A total psychosocial difficulty score was created by summing the scores across the Anxiety, Depression, Anger/Aggression, and Posttraumatic Stress subscales of the TSCYC. As this scale was found to be significantly skewed, a square root transformation was undertaken to ensure normality of the distribution of scores.

A series of hierarchical regression analyses were conducted separately for each of the five victimization forms and controlled for a number of socio-demographic variables (entered in Block 1). Specifically, these models examined whether the unique contribution of the lifetime victimization exposure variable (entered in Block 3) would reduce the predictive

ability of the specific victimization form (entered in Block 2). Results demonstrated that sexual victimization ($B = 0.70$; $SE = 0.33$; $p < .001$), maltreatment ($B = 0.81$; $SE = 0.22$; $p < .001$), and indirect/witness victimization ($B = 0.81$; $SE = 0.55$; $p < .01$) were significantly associated to psychosocial difficulties. However, these associations were no longer significant when the lifetime victimization exposure score was entered into the regression models.

A final series of regression models were conducted (two models for each of the five victimization form assessed), one model with the unweighted lifetime victimization exposure score and one model with the weighted score. This was done in order to test whether the ability of the lifetime victimization exposure variable to predict psychosocial difficulties would increase if victimization forms were weighted differently. Specifically, following Finkelhor et al.'s (2009b) suggestion, sexual assault items were given a weight of +3, and maltreatment items were given a weight of +4, when calculating the overall victimization exposure scale. Results demonstrated that the standardized coefficient for the psychosocial functioning scale increased from .43 to .48 when using the weighted victimization scale ($R^2 = .18$ to .23 for weighted model). While it is appealing to make statements about the utility of the weighted data based on these standardized betas (as in Finkelhor et al., 2009b), a further calculation was required to evaluate whether the differences between the two models were actually statistically significant. This calculation, based on Tabachnick and Fidell (2007), involved obtaining the Z -score for the differences between the multiple correlation (i.e., correlation between obtained psychosocial functioning score and predicted psychosocial functioning score) for the two models.

The following equation was used to determine the Z score for the differences in prediction from the weighted and non-weighted total score:

$$Z^* = (z_{ya} - z_{yb}) \sqrt{N-3/2-2s_{ya,yb}}$$

$$\text{Where } z_{ya} = (1/2) \ln (1+r_{ya} / 1- r_{ya}) \text{ and } z_{yb} = (1/2) \ln (1+r_{yb} / 1- r_{yb})$$

$$\text{Where } s_{ya,yb} = [(r_{ab}) (1-2r^2)] - [(1/2) * r^2 (1-2r^2 - r^2_{ab})] / (1 - r^2)^2$$

More specifically, the correlation between the psychosocial functioning score and predicted scores using the weighted victimization exposure total (r_{ya}) was .482, and the correlation between the psychosocial difficulties scores and predicted scores using the non-weighted victimization total (r_{yb}) was .425. Finally, the correlation between psychosocial functioning scores as predicted from the weighted victimization total and psychosocial functioning scores as predicted by the non-weighted victimization scores was .898 ($r_{ab} = .898$). With this information, the Z score for the difference between the predictive ability of the weighted model and the non-weighted model can be calculated:

$$z_{ya} = 0.53$$

$$z_{yb} = 0.45$$

$$s_{ya,yb} = 2.15$$

$$Z^* = - 0.66$$

The obtained Z-score was - 0.66, which is within the critical value of ± 1.96 for a two-tailed test. Hence, it can be concluded that, while the coefficients were larger for the weighted victimization exposure model compared to the non-weighted victimization exposure model, these differences were not statistically significant. In other words, weighting the victimization total according to maltreatment and sexual assault experiences did not significantly increase the prediction of psychosocial difficulties.

Summary of results for Aims 5 and 6. The purpose of Aims 5 and 6 was to examine the associations between lifetime exposure to various victimization forms and children's psychosocial difficulties. These associations were examined while taking into account total lifetime victimization exposure and weighting techniques for different victimization forms (specifically sexual assault and maltreatment). Findings revealed a positive linear association between lifetime victimization exposure and psychosocial difficulties such that increasing exposure was related to increasing difficulties, and the effect sizes obtained were generally large. These findings highlight the strong association between victimization and psychosocial dysfunction. More specifically, children who experienced poly-victimization experienced a significantly greater number of anxiety, depression, posttraumatic stress, and anger/aggression symptoms than children who experienced multiple victimization or children who were exposed to only one type of victimization in their lifetime. Furthermore, multiple-victims experienced significantly greater symptoms of depression, posttraumatic stress, and anger/aggression symptoms than single-victims.

Findings also indicated that, after controlling for lifetime victimization exposure, statistically significant associations between specific victimization forms and psychosocial difficulties were no longer significant. However, maltreatment, sexual victimization, and Internet victimization were still positively associated (although non-significant) with psychosocial difficulties after controlling for lifetime victimization exposure. This may suggest that, with a larger sample size (and greater statistical power), these forms would have remained significantly associated to psychosocial functioning. With regard to weighting techniques, findings demonstrated that, in this sample, weighting techniques did not increase the predictive power of models to any statistically significant degree.

Part II: Ecological Risk Models of Childhood Multiple Victimization

Objective 1: Childhood Multiple Victimization Risk Model

The first objective of Part II involved testing a risk model for lifetime exposure to victimization. A hierarchical linear regression analysis was conducted to examine 15 potential correlates of lifetime victimization exposure (i.e., a cumulative count of exposure) and included a number of child (sex, age, ethnicity, and medical condition), family (caregiver age and education, family income, family structure, caregiver psychosocial symptoms, caregiver substance abuse, positive parenting, supervision, and family functioning), and community (neighbourhood involvement/cohesion; neighbourhood safety) correlates. The descriptive statistics for the above-mentioned correlates are presented in Table 14.

Table 15 indicates that the model was significant ($F(14, 198) = 5.50, p < .001$) and that the included variables accounted for approximately 23% of the total variability in lifetime victimization exposure ($\Delta R^2 = .23$). The R_{change} statistic similarly indicated that the addition of family variables into the model significantly increased the prediction of lifetime victimization, over-and-above the child and community factors ($R_{change} = .23, p < .001$). On the other hand, while child variables ($R^2_{change} = .03$) and community variables ($R^2_{change} = .01$) were related to lifetime exposure to victimization, these blocks were not found to significantly contribute to the overall predictability of the model prediction, over-and-above the variance accounted for by the family block ($p > .10$).

Turning to the individual correlates, the results suggested that boys were more likely than girls to experience higher rates of lifetime victimization ($B = 0.13, p < .05$). There was also a statistical trend for increasing age to be associated with higher rates of lifetime

victimization ($B = 0.11, p < .10$). For family factors, the following were associated with greater exposure to lifetime victimization: (a) lower family income ($B = 0.18, p < .05$); (b) younger caregiver age ($B = -0.17, p < .05$); (c) greater psychosocial symptoms in caregivers ($B = 0.16, p < .05$); (d) caregiver substance use ($B = 0.14, p < .05$); and (e) greater family dysfunction ($B = 0.25, p < .001$). There was also a statistical trend for children from non-intact families to experience a greater number of lifetime victimizations ($B = 0.11; p < .10$). Semi-partial squared correlations indicate the unique contribution of a factor over and above that of the other factor in the model. According to this statistic, family dysfunction uniquely accounted for 5.5% of the total variance in victimization rates whereas family income accounted for 2.8%. Caregiver psychosocial symptoms and caregiver age accounted for 2.7% and 2.3% of the total variance, respectively. Finally, the presence of a caregiver substance abuse problem accounted for 2.3% of the total variance, and child sex accounted for 2.2% of the total variance.

The risk model was conducted a second time, with the addition of the interaction terms. Specifically, the predictors (main effects) were entered into the first block and the interaction terms were entered subsequently into the second block. Four interactions were tested: (a) caregiver supervision and neighbourhood safety; (b) caregiver supervision and non-intact family; (c) caregiver psychosocial symptoms and neighbourhood safety; and (d) caregiver psychosocial symptoms and non-intact family. None of these interaction terms reached statistical significance.

Objective 2: Modeling across Victimization Forms

While the first objective was to test an ecological risk model of multiple victimization, this second objective aimed to examine the generalizability of the ecological

model across specific victimization forms. The seven victimization forms were dichotomized into *exposure* or *no exposure* if at least one of the items within that form was indicated as having been experienced by the child over his/her lifetime. Note that dichotomies were used because some of the victimization forms remained skewed despite transformations (i.e., sexual victimization, Internet victimization). However, as the goal was to compare the model fit across victimization forms, the same analyses needed to be conducted for each model.

Table 16 presents findings from the series of binary logistic regressions that were conducted. The risk models were significant for exposure to family violence ($\chi^2 = 51.03, p < .001$), maltreatment ($\chi^2 = 51.09, p < .001$), and conventional crimes ($\chi^2 = 27.93, p < .05$). The overall model was not statistically significant for the four remaining victimization forms, namely sexual victimization ($\chi^2 = 19.36, p > .10$), Internet victimization ($\chi^2 = 14.02, p > .10$), peer and/or sibling victimization ($\chi^2 = 10.40, p > .10$), and witness/indirect victimization ($\chi^2 = 20.46, p > .10$). In regards to the significant models, the model did have very similar classification accuracy across the three significant victimization forms, ranging from 73-77%. This finding is important as it suggests that the model is functioning similarly across these different victimization forms. However, examining the Nagelkerke *R* Square values, the R^2 value indicates that the model for conventional crimes ($R^2 = .18$) accounted for less of the variance in victimization exposure scores compared to exposure to family violence ($R^2 = .30$) and maltreatment ($R^2 = .31$) models. More specifically, it is possible that the addition of a predictor that is not included in the current model could increase the model fit (i.e., explain more of the variance) in conventional crimes. Note that the three victimizations forms that reached statistical significance were also the models with the greatest statistical power as they were closest to a 50/50 base rate.

Table 16 examines the individual predictors across the seven models. As illustrated in this table, overlap was found and the direction of the predictors tended to remain static across the various victimization forms. Across models, family variables were most often significant, followed by child variables and, lastly, by neighbourhood variables. Of note, family dysfunction as well as caregiver substance abuse problems, psychosocial functioning, and caregiver age were commonly statistically salient risk factors across most victimization forms, and particularly for maltreatment and exposure to family violence. Turning to child variables, older age and the presence of a medical condition were significantly associated with an increased risk of maltreatment. The results of the logical regressions also showed that boys were more likely to experience exposure to family violence. The only neighbourhood variable to reach statistical significance was neighbourhood safety so that as neighbourhood safety increased, the risk for maltreatment decreased.

While directions of associations tended to remain stable across models, several exceptions were found, such as child age and caregiver-reported neighbourhood cohesion/involvement. For example, while a decrease in child age was associated with increases in witness/indirect victimization, exposure to family violence, and sexual victimization, an increase in child age was associated with increases in the incidence of conventional crimes, peer and/or sibling victimization, maltreatment, and Internet victimization. Further, whereas neighbourhood involvement/cohesion was associated with increases in conventional crimes, it was also associated to decreases in witness/indirect victimization. Exceptionally, peer and/or sibling victimization, which was experienced by 83.6% of the total sample, was not significantly related to any of the risk factors tested, with the exception of a statistical trend for positive parenting. In sum, the observed overlap and

variability across models lend partial support to the specificity and generalist modeling of childhood victimization.

Summary for Objective 1 and 2

Part II of the current dissertation was divided into two objectives, the first objective of which was to test a general risk model of victimization and the second objective of which tested the applicability of the risk model for specific forms of victimization. Findings highlighted the important association between family factors, such as greater family dysfunction, greater caregiver psychological distress, and the presence of substance use, and greater victimization experiences. Child factors, such as age (older) and sex (boys), were also significantly associated with greater victimization. On the other hand, neighbourhood factors (safety, cohesion/involvement) and interaction effects did not significantly contribute to the model.

When this general risk model was applied to specific victimization forms, it was only significant for maltreatment, exposure to family violence, and conventional crimes. This finding provides partial support for the specificity assumption of childhood victimization, whereby different victimization forms are posited to be best predicted by distinct sets of risk models. Specifically, while family factors tended to contribute consistently across victimization forms, child factors (e.g., sex, age, medical condition, ethnicity) and neighbourhood factors showed the most variability across the victimization forms. Taken together, these findings suggest that, in this school-aged sample, family factors (e.g., caregiver young age and psychosocial difficulties, family dysfunction, etc.) might increase risk for victimization across multiple forms of victimization, creating a condition of vulnerability, but that neighbourhood and child factors may increase or decrease the risk of a

particular form of victimization. Results of Objective 1 and 2, therefore, appear to support a *both-and* approach to the specificity and non-specificity assumptions, whereby there may exist risk factors that are common across all victimization forms *and* a sub-set of risk factors that is specific to particular victimization forms.

Discussion

The current dissertation contributes to the childhood multiple victimization literature, which aims to examine the full spectrum of victimizations that could be experienced by children across time and in various contexts. This is a notable contrast to the bulk of scientific inquiry on childhood victimization to date, which has tended to examine different types or forms of victimization in isolation of one another and which has tended to formulate specific and separate theories of risk accordingly (Hamby & Grych, 2013). While this approach has contributed significantly to the field by forming the foundation of our understanding on childhood victimization, it is inherently problematic as research has found that most victimized children are multiply victimized (i.e., exposed to more than one type of victimization) and that victimization exposure across multiple contexts exerts a greater impact (both in terms of psychosocial outcomes and risk for future victimization) than any single type of victimization (Finkelhor et al., 2005a; Finkelhor et al., 2010).

Given that children of varying ages often react differently to victimization (Finkelhor, 2009; Finkelhor & Dziuba-Leatherman, 1995), this study focused on school-aged children, a population that is often neglected in epidemiological and research studies of childhood multiple victimization (Finkelhor & Hashima, 2001; Turner et al., 2012). Specifically, the majority of the scientific inquiry to date has focused on adolescent populations or has not been developmentally sensitive (collapsing 0-17 year olds into a general sample). However, school-aged children are particularly vulnerable to multiple- and poly-victimization due to the school transitions experienced in this age group (i.e., Grade 1 and middle school). Furthermore, focusing on more distinct age groups would allow for a more developmentally specific examination of risk.

The current dissertation was divided into two parts. The first part examined the frequency of victimization (past year and lifetime) and non-victimization (lifetime) adversities, the co-occurrence among victimization forms, and the association between victimization and socio-demographic factors as well as psychosocial functioning. The second part examined the risk factors associated with childhood multiple victimization and the applicability of a general victimization risk model to risk models of specific victimization forms in an attempt to disentangle questions surrounding the specificity or non-specificity assumption of childhood victimization.

**Part I: The Frequency and Co-Occurrence of Victimization Experiences and
Associations to Psychosocial Difficulties**

Key Findings

Objective 1: The frequency of victimization and non-victimization adversities.

The first research objective examined the frequency of a wide range of victimizations (lifetime and in the past year) and non-victimization (lifetime) adversities in a sample of 213 school-aged children living in the Ottawa/Gatineau area. In addition, the frequency of multiple and poly-victimization was assessed. Finally, potential group differences on socio-demographic factors were examined.

Aim 1: Frequency of lifetime non-victimization adversities. This aim was of particular importance in order to obtain a more comprehensive portrait of the various hardships experienced by children. Similar to previous studies (Gustafsson et al., 2009; Turner et al., 2013a), results demonstrated that most children experienced at least one adversity in their lifetime (range 0-7). While less severe adversities (e.g., hospitalization of loved one) were more common in this sample, it should be noted that even severe

adversities, such as having a caregiver in jail (5.2%) or having a caregiver with substance abuse problems (8.9%), were found among the sample. Similar to Gustafsson and colleagues (2009), the adversities most commonly experienced by the sample in the current study was knowing someone close who had died and knowing someone close who had experienced a serious illness or who required hospitalization. However, a higher rate of caregiver unemployment was endorsed in the current sample, with approximately 1 in 5 children having a caregiver who was unemployed and could not find employment. In sum, the results supported the hypothesis that lifetime non-victimization adversities would be common among school-aged children and that most children would have experienced at least one adversity over their lifetime.

Aim 2: Frequency of victimization experiences and demographic differences.

Despite methodological differences, lifetime and past-year victimization rates in the current study were comparable to those found in past studies (Finkelhor, et al., 2009a; 2009b; Gustafsson et al., 2009; Mrug, Loosier, & Windle, 2008) and supported the common-nature of childhood multiple victimization, as a number of children in the sample were reported by caregivers to have been exposed to high levels of victimization, and the majority experienced multiple victimization in the past year and in their lifetime. As was hypothesized, lifetime victimization rates were greater than past-year victimization rates. Similar to past studies, it was hypothesized that, for both lifetime and past-year rates, peer and/or sibling victimization would be most prevalent in this sample, followed by conventional crimes, witness/indirect victimization, maltreatment, exposure to family violence, Internet victimization, and finally, sexual victimization. This hypothesis was partially supported in that peer and/or sibling victimization was the most prevalent, followed

by conventional crimes and witness/indirect victimization. The remaining victimization forms were reported to have occurred in the following order (descending order): exposure to family violence; maltreatment; sexual victimization; and Internet victimization. Furthermore, similar to previous research, results demonstrated that exposure to victimization tended to vary according to a number of socio-demographic factors (Finkelhor, 2009). The following sections review the key findings for lifetime and past-year victimization frequencies and highlight key findings related to socio-demographic differences across victimization exposure.

Lifetime victimization rates. As hypothesized, the majority of children in the current study (86.4%; excluding the supplementary scales of Internet victimization and exposure to family violence) experienced multiple victimization. More specifically, results indicated that school-aged children experienced 0 to 23 types of victimization over their lifetime, with a mean of 5.5 (excluding the supplementary scales). These findings were similar to those obtained in a nationally representative U.S. study of 1,467 children aged 2-17, where the range was 0 to 26 and the mean was 3.6 (Finkelhor et al., 2009b). Table 17 compares frequencies of lifetime victimization from the current sample to the NATSCEV rates. As illustrated in this table, results were generally similar to the NATSCEV, with the exception of lifetime physical assault and maltreatment rates, which were significantly higher in the current sample compared to the NATSCEV findings.

It is unclear whether these differences are a result of methodological or demographic differences among the samples. For example, the inclusion of 13 year olds in the NATSCEV may have confounded frequencies depending on victimization experiences. Indeed, Finkelhor and colleagues (2009a) found that rates of property crimes (i.e., theft) and physical

assaults (i.e., assaults without a weapon, bullying) peaked in mid-childhood (6-9 years of age) so the inclusion of 13 year olds in the NATSCEV may have lowered the sample average. Higher rates of lifetime maltreatment in the current study may have been a function of the anonymous study design. Unlike the NATSCEV study that utilized a telephone-survey design (where researchers were bound to report child abuse or neglect), caregivers in the current study could not be identified so they may have been more willing to accurately report maltreatment. In addition, differences may related to the measurement of victimization. Indeed, this study relied on caregiver reports for all ages (whereas the NATSCEV uses child-reports after the age of 10) and employed the JQV screener sum version (as oppose to the long-form version). More generally, differences among actual community violence rates in the U.S. compared to the Ottawa (Canada) area may explain the obtained differences on victimization frequencies across both studies.

Research findings can also be compared to findings from Cyr and colleagues (2013b), who examined the multiple victimization experiences in a stratified random sample of 797 children (6 to 11 years old) living in Québec, Canada. The frequency rates from the current study tended to be higher than those in Cyr and colleagues (2013c), particularly for physical assaults (82.6% vs. 49.8%), witness/indirect victimization (43.7% vs. 24.0%), and maltreatment (27.7% vs. 10.8%). Rates of property crimes (39.9% vs. 35.3%) and sexual victimization (9.4% vs. 6.2%) were generally comparable. While the indirect/witness victimization rates obtained were higher than Cyr et al. (2013b), they were similar to results from the NATSCEV (see Table 17). As aforementioned, the differences between the two study on physical assaults and maltreatment may be a function of age differences across samples. Interestingly, while Cyr et al. (2013b) used a telephone design, they reported

having guaranteed the anonymity of participants. As such, while differences in maltreatment rates between the current study and Cyr et al. (2013b) may not necessarily be related to fear of reprisal (disclosure to authorities), it is possible that the anonymous Internet design of the current study may have lowered socially-desirable responding (Gosling et al., 2004) and contributed to more accurate reporting. However, differences between the two studies might also be a function of sample characteristics, including the geographical area from which participants were recruited, age range of participants, the convenience sample design, and the portion of children receiving clinical services. Specifically, the current study oversampled children in clinical samples to obtain a clinical subsample (approximately 16.9% of the sample). While the proportion of children in the clinical subsample is comparable to rates in the general community (approximately 15% of children in Ontario suffer from mental illness; Waddel & Shepherd, 2002), its inclusion may have inflated victimization rates in the current study, comparatively to studies that do not aim to include a clinical subsample.

Past-year victimization rates. Turning to past-year rates, multiple victimization was again experienced by the majority of children in the sample (65.4%). Of the children exposed to multiple victimization, the average number of victimization was 2.91. This rate was comparable to data from the DVS study, wherein children (ages 2-17) exposed to victimization (71% of the total sample) experienced an average of three victimization types (Finkelhor et al., 2005a). More specifically, children in the current sample (ages 6-12) were exposed to a similar level of sexual victimization, maltreatment, property victimization, and witness/indirect victimization than children ages 6-13 ($N = 1,824$) in the NATSCEV study (see Table 18; Finkelhor et al., 2009a). However, the current study found higher rates of

physical assault and witness/indirect victimization than what was found in the NATSCEV study. As was the case for the variance found in lifetime rates, it may be that the inclusion of 13 year olds in the NATSCEV sample, as well as the anonymous design, may account for these changes. Indeed, the witness/indirect victimization scale includes items that assess exposure to domestic violence and family abuse.

The results from the current study can also be compared to Cyr et al. (2013b). As was the case with lifetime rates, past-year victimization rates appear to be more elevated compared to Cyr et al. (2013b) in the following way: property victimization (34.7% vs. 22.0%); physical assault (63.8% vs. 34.7%); and witness/indirect victimization (22.1% vs. 13.3%). Rates of sexual victimization and maltreatment appeared similar across the two samples (4.2% vs. 3.7%; 9.4% vs. 5.8%, respectively). As aforementioned, the differences may be associated with differences in methodology and sample characteristics across the two studies.

Sex differences in lifetime and past-year victimization rates. In regards to sex differences, boys and girls were exposed to a similar number of victimizations in their lifetime. However, there was a statistical trend for boys to experience more victimization, including multiple- and poly-victimization. Boys and girls were exposed to similar forms of victimizations, with the exception of the physical assault subscale of the conventional crimes scale and the exposure to family violence scale, although effect sizes tended to be small. Turning to victimization types, according to caregiver reports, boys were more likely to experience assaults with and without weapons, theft, caregiver-perpetrated psychological/emotional abuse, genital assaults, and exposure to a war zone. Similar to lifetime rates, boys tended to be exposed to more victimizations than girls in the past year,

however both sexes were exposed to similar *forms* of victimization, with the exception of the maltreatment and the physical assault subscale of conventional crimes (where exposure was higher for boys). Some sex-based differences, however, were found among exposure to victimization *types*, with boys more frequently exposed than girls to such experiences as physical assault with a weapon, attempted assaults, and genital assaults. Girls did experience more exposure to seeing a grown-up or teen push, hit or beat up another adult, for both lifetime and past year rates.

The sex differences found in the current study were similar to those in previous research, with boys often experiencing a greater number of physical assaults than girls (Turner et al., 2010). Indeed, boys have been found to be victims of violent crimes more frequently than girls (Canadian Centre for Justice Statistics, 2008), with the exception of sexual assaults and kidnapping (Finkelhor, 2007a). The sex differences in physical assaults may be explained by gender norms, wherein physical aggression is more accepted in boys than in girls (Romano et al., 2011). Interestingly, in this sample, boys tended to experience a greater number of victimizations classified under maltreatment and exposure to family violence⁵. Finkelhor et al. (2009a) did not find that maltreatment rates differed significantly between the sexes (10.6% for girls, 9.7% for boys), and Cyr et al. (2013b) found that girls experienced a slightly greater number of maltreatment experiences than boys (15.2% vs. 10.4%) and that this sex difference was significant for adolescents ages 12 to 15. However, sex differences vary by age (Canadian Centre for Justice Statistics, 2008), and the examination of a broad development period (0-17 years) in Finkelhor et al. (2009a) and in

⁵ There currently does not exist similar comparative data on the exposure to family violence scale of the JVQ-R-1 (new and supplemental scale).

Cyr et al. (2013b) may have concealed sex differences. Indeed, sex differences in maltreatment rates specifically (including exposure to domestic violence) appear to vary by age, according to the Canadian Incidence Study. For example, in children aged 4 to 11 years, it appears as though girls and boys have similar rates of maltreatment investigations (13% for girls and 14% for boys ages 4 to 7; 12% for girls and 13% for boys ages 8 to 11) and substantiated maltreatment (47% vs. 44% of cases). However, from 12 to 15 years of age, females have slightly more maltreatment investigations (14% for girls vs. 11% for boys), but boys tend to have more substantiated maltreatment than girls (51% vs. 46% of cases).

Age differences in lifetime and past-year victimization rates. Turning to age differences, results indicated that older children were more likely experience a greater number of lifetime victimization forms, specifically maltreatment, conventional crimes, and Internet victimization, and effect sizes tended to be moderate. This finding, which has been commonly found in the literature (Finkelhor, 2009; Hamby & Grych, 2013), makes intuitive sense as older children tend to accumulate more lifetime victimizations as a function of their age. However, poly-victims (as assessed in the past year) were more likely to be younger (7.38 vs. 8.23 years) than non-poly-victims. Specifically, younger children experienced a greater number of peer and/or sibling victimizations and physical assaults than older children. The vulnerability of younger children for multiple and poly-victimization, specifically around the age of 7, has been found in the literature and has been explained by school transition (Grade 1) and its associated features, such as navigating a new environment and meeting new peers (Finkelhor et al., 2009c; Finkelhor et al., 2011).

As hypothesized, older children were more likely to experience Internet victimization and maltreatment (both past year and lifetime). This is consistent with previous research

(Finkelhor et al., 2009b), which has found that older children experience a greater number of past-year and lifetime maltreatment than younger children. Further, young children's Internet use is often monitored or even restricted, but, as children age, they tend to be provided with increased Internet access. This access may not be as closely monitored, which can increase vulnerability to victimization (Mitchell et al., 2011). Contrary to hypotheses, sexual and witness/indirect victimization (past year and lifetime) were not found to be more prevalent in older children. While it may be that methodological differences between the studies may account for this, it is also possible that the focus on school-aged children may have decreased the effect of age as the available research (Finkelhor et al., 2009b) has focused on a broad developmental age period (0-17). The inclusion of 14 to 17 year olds in Finkelhor et al.'s (2009b) analyses may have increased the effect of age as, in their sample, the largest prevalence of sexual and witness/indirect victimization was in 14-17 year olds.

Socio-demographic differences in lifetime and past-year victimization rates. In line with the research hypotheses, results indicated that children with higher rates of *lifetime* victimization tended to come from lower income, single-parent or step-families and to have caregivers with lower education (moderate to large effect sizes). Analyses comparing *past-year* victimization exposure across socio-demographic factors did not yield any significant differences, with the exception of family structure where children exposed to a greater number of victimizations were more likely to come from single-parent households. While this lack of significant effect may be a result of low power, it may also speak to the disparate effect of socio-demographic factors on victimization exposure. Specifically, Finkelhor and colleagues (2005a) found a general trend for children in low income and ethnic minority families to experience more victimization; however the effect was not large and varied

considerably according to victimization forms. Finkelhor and colleagues (2005a) have argued that the inconsistent effect of socio-demographic factors on victimization exposure may be related to differences inherent to the study design (i.e., population surveys/convenience sampling), which is less impacted by social class and ethnic bias compared to data from official government sources, which frequently identify an effect of socio-demographic factors. In other words, differences across studies may reflect differences in methodology or sample composition, rather than a true effect of family income and ethnicity.

Aim 3: Adversities and victimizations across clinical and community subsamples.

As was anticipated, children in the clinical subsample experienced greater lifetime and past-year victimization, as well as greater lifetime adversities, compared to children in the community subsample. It was hypothesized that children in the clinical subsample would experience greater maltreatment, sexual victimization, and Internet victimization. These hypotheses were partially supported in that children in the clinical subsample tended to experience a greater number of these victimization forms, with effect sizes ranging from small to moderate, but the differences did not reach statistical significance for all forms. Interestingly, the clinical subsample experienced a significantly greater number of conventional crimes (lifetime and past-year) and peer and/or sibling victimization (lifetime, trend for past-year). It is difficult to compare these results with existing research, as studies up to now have examined clinical and community samples separately. However, studies that have sampled children from clinical settings (Álvarez-Lister et al., 2014; Cyr et al., 2012; Ford et al., 2013) report higher rates of victimization across all forms as well as higher rates

of multiple and poly-victimization, compared to studies that examine community samples (e.g., Cyr et al., 2013c; Finkelhor et al.; 2009b).

Objective 2: Co-occurrence among lifetime victimization forms (Aim 4). A second main research objective was to examine which forms of victimization typically occur together in order to better understand the phenomenon of multiple victimization. This objective was addressed through a number of analytical methods, such as cross-tabulations and common profiles of victimization. Significant co-occurrences were found among the seven victimization forms, with most children (84.5%) experiencing more than two of the seven victimization forms in their lifetime. In particular, in this school-aged sample, peer and/or sibling victimization as well as conventional crimes were most often represented in the identified profiles, followed by maltreatment and exposure to family violence. In addition, while considerable overlap was found among all victimization forms, the overlap was most prominent in more *severe* victimization forms (i.e., sexual victimization, Internet victimization and maltreatment). This is coherent with past research, which has found that these forms are associated to an increase risk of other victimization experiences (Finkelhor et al., 2009b; Mitchell et al., 2011).

Nevertheless, comparisons with past research are difficult because the bulk of the literature has not examined co-occurrences among victimization forms (Hamby & Grych, 2013). Of the minority of researchers who have examined the interconnections among forms (e.g., Cyr et al., 2013; Finkelhor et al., 2009a), they have usually been calculated by way of odds ratios and, therefore, it is difficult to compare the results from profile analyses. Nevertheless, the multiple victimization literature has established that victimization forms, even those that seem morphologically dissimilar (e.g., conventional crimes and

maltreatment), tend to co-occur (Hamby & Grych, 2013); as was found in the profile analyses. Holt and colleagues (2007) used cluster analysis to examine profiles of past-year victimization among 689 school-aged children. Similar to results from the current study, these researchers found that peer and/or sibling victimization, along with conventional crimes, frequently co-occurred. The prevalence of conventional crimes (e.g., assaults, theft, robbery) obtained in this school-aged sample may be reflective of greater exposure to schoolyard violence in this age group, as opposed to a greater exposure to neighborhood violence (victimized by peers vs. strangers in their neighbourhood).

Objective 3: Associations between victimization and psychosocial difficulties (Aim 5 and 6). The third objective sought to better understand the association between lifetime victimization and psychosocial difficulties. As most research has focused on the association between victimization and posttraumatic symptoms (Turner et al., 2013a), the current study examined broader categories of psychosocial difficulties, including symptoms of depression, anxiety, and aggression (in addition to posttraumatic stress). The applicability of weighting techniques was also examined in this third research objective.

Aim 5. Psychosocial correlates of multiple victimization. Significant group differences on psychosocial difficulties were found between single, multiple-, and poly-victims, and the largest effect sizes (although all were large) were found on posttraumatic stress symptoms followed by anxiety, anger/aggression, and depressive symptoms. More specifically, poly-victims were found to experience significantly greater symptoms of posttraumatic stress, anxiety, anger/aggression, and depressive symptoms, compared to multiple- and single-victims. Multiple-victims, on the other hand, were found to experience significantly greater symptoms of posttraumatic stress, anger/aggression, and depressive

symptoms than single-victims. These analyses elucidate the important association between victimization and psychosocial difficulties, an established finding in the childhood victimization literature (Finkelhor, 2009).

The next step of analyses evaluated the predictive ability of individual victimization forms after controlling for lifetime exposure. The hypothesis that multiple victimization status would be associated with post-traumatic stress, depression, anxiety, and physical aggression symptoms more so than any victimization form alone was supported. Even with the inclusion of control variables (i.e., child age, sex, ethnicity, family structure and income), the relationship between multiple victimization and psychosocial difficulties remained significant, indicating the powerful association between victimization and children's psychosocial functioning. Indeed, the more victimization exposure children had, the weaker the association between a particular victimization form and outcomes. The exceptions, however, were sexual victimization, Internet victimization, and maltreatment. While these forms were no longer statistically significant after the inclusion of lifetime victimization exposure, they were still positively associated with the measured outcomes. This suggests that, perhaps with a larger sample size (and therefore greater statistical power), these victimization forms may still remain an important predictor of psychosocial difficulties, even after controlling for multiple victimization experiences. Indeed, the various victimization forms were strongly correlated to the multiple victimization variable (range $r = .13$ to $.69$). As such, it may be that limited statistical power due to large correlations between several of the victimization types, the lifetime victimization variable, and the low base rate victimizations (e.g., Internet) may have obscured the detection of statistical significance. Indeed, the size of the 95% Confidence Interval supports the hypothesis that low power may

have impacted our results (i.e., low base rates events and those highly correlated with multiple victimizations had larger confidence intervals).

Aim 6. Weighting techniques. As no consensus exists as to the utility of weighting methods to control for the unique contributions of individual victimizations (Finkelhor et al., 2009c), weighting techniques were also assessed. Specifically, previous research has found that sexual victimization and maltreatment exert particularly salient effect on trauma symptoms (Finkelhor et al., 2009b), and as such, researchers have argued that sexual victimization and maltreatment experiences should be allocated additional weight when calculating cumulative scales. No similar analyses have been completed with Internet victimization, as it is a new and supplemental scale of the revised version of the JVQ.

Similar to previous literature (Finkelhor et al., 2005a; 2009a; 2011), it was hypothesized that weighting techniques would increase the predictive ability of lifetime victimization experiences on symptom distress. Contrary to the hypothesis, the findings indicated that weighting did not increase the predictive ability of lifetime victimization rates on psychosocial difficulties to any statistically significant degree. It is unclear how to interpret these findings as the research examining this issue (Finkelhor 2005a; 2009b) has not evaluated the statistical significance of the coefficient increase (so one cannot discuss meaningful change). However, similar to Finkelhor et al. (2009a), weighting techniques did slightly increase the beta values in the regression model. These findings highlight the importance of evaluating statistically significant change when examining the issue of weighting, as opposed to qualitatively examining increases in beta values. If replicated, these findings may suggest that weighting certain lifetime victimization forms differently may not statistically significantly increase the predictive value of victimization scales.

Theoretical, Research, and Applied Implications of Part I

Theoretical implications. The common overlap among victimization experiences speaks to the *condition* of childhood victimization. Indeed, findings from the current study provide convincing evidence that exposure to victimizations in childhood coalesce in accordance with specific individual and systemic factors (Finkelhor et al., 2011). In addition, the documented co-occurrence among victimization forms and the salient effect of multiple and poly-victimization on children's psychosocial functioning lend support to the ecological perspective, which argues that distinct victimizations share some common etiological pathways and the association to children's psychosocial functioning is multifaceted (Cicchetti & Lynch, 1993).

Attempts to unravel and better understand the co-occurrence among victimization forms will allow us to develop more holistic and complete theories of victimization (Hamby & Grych, 2013). Theories that attempt to explicate the mechanisms at the centre of the interconnection across victimizations, as well as over time and across contexts, are needed as most existing theoretical models of victimization have focused on a particular context (e.g., school, home) or a victimization form (Hamby, 2011). The formulation of holistic theories of childhood victimization (and its associated research) has been termed as the second wave of violence scholarship (Grych & Swan, 2012). The ecological perspective is an important framework for such endeavours, as it underscores the dynamic and transactional relationships across various ecological systems and their characteristics and characteristics of the child.

Also essential to this second wave of creating more complete theoretical models of childhood victimization is the developmental principles of multifinality and equifinality. An

appreciation of these principles requires theorists to entertain a complex and multifaceted approach to the conceptualization and investigation of a particular condition (Cicchetti, 2006), such as childhood victimization. It further underlines the importance of person-centered approaches to risk and outcome modelling. Indeed, the principle of multifinality posits that the same event or risk factor may lead to a multitude of different outcomes and thereby argues, perhaps similar to the ecological perspective, that to understand a given condition or process, theorists need to consider the complex and transactional associations across an individual and their environmental contexts (Cicchetti & Rogosch, 1996). The principle of equifinality, on the other hand, upholds that a diversity of pathways may lead to the same outcome or condition (Cicchetti, 2006), such as multiple victimization. It further highlights that, to more fully understand a particular phenomenon, theorists need to adopt a holistic or comprehensive etiological view of a particular phenomenon (i.e., the phenomenon is multi-determined), and uncover the various pathways that may lead to a given outcome. This latter principle again ties in well with the ecological perspective that similarly highlights the malleable and transactional nature of human development.

The non-significance of weighting techniques in predicting psychosocial difficulties (Aim 6) may also lend support to the cumulative risk theory, which proposes that the total accumulation of ecological risk factors or adversities is more predictive than any one risk factor or adversity. Indeed, various studies have found that the number of risk factors is a better predictor of a host of cognitive, behavioural, and social outcomes than any single risk factor (Hamby, 2011; Raviv, Taussig, Culhane, & Garrido, 2010) and that cumulative victimization exposure is a better predictor of psychosocial functioning and risk of revictimization than any single victimization experience (Finkelhor, 2009). While

cumulative risk theory has been found to be highly predictive of child outcomes, a more nuanced examination of the association between individual victimizations and psychosocial functioning is nevertheless important to deepen our understanding of how certain victimization experiences may influence the context of risk. Indeed, multiple victimization is often studied as a dichotomous concept (yes or no); however, it remains that the concept of multiple victimization is far from invariable, as illustrated by the victimization profiles identified in the current study.

In a similar vein, an additional theoretical implication relates to the conceptualization of the terms “multiple victimization” and “poly-victimization”. There exists limited consensus on the definition and measurement of multiple and poly-victimization, including the theoretical and empirical basis for weighting techniques. Consensus regarding the concept and measurement of multiple and poly-victimization is sorely required and would create more clarity and integration in this field of research.

Research implications. To advance understanding of multiple victimization, large-scale studies that make use of data that do not rely on substantiated or reported violence and that include Canadian community- and clinic-based samples are needed. Large-scale studies would allow for advancements in the quantification and analysis of the co-occurrence among forms. Findings stemming from such studies would allow for a true synthesis of the literature (encompassing domains such as child development, sociology, and criminology; Hamby & Grych, 2013). The majority of large-scale and nationally-representative data are specific to U.S. samples, with the exception of a recent U.K. study (Radford et al., 2013). A similar Canadian endeavour would be beneficial not only to better understand the phenomenon of childhood victimization but also to inform and advocate for evidence-based preventative and

intervention programs. Longitudinal research would be helpful to uncover and better appreciate the developmental pathways that lead to childhood multiple and poly-victimization. Such research would provide indispensable information to create evidence-based intervention and prevention programs.

The prominent co-occurrence among victimization forms and adversities lend support to the argument that research should control for additional victimization experiences when assessing a particular victimization form or type (Hamby & Grych, 2013). Without controlling for the breadth of victimizations potentially experienced by children, those in the non-victimized control groups may in fact be victims of an unmeasured victimization type (or adversity). In addition, the victimized group may in reality have a significant proportion of multiple- and poly-victims, depending on the victimization form of interest to the researchers (with severe victimization forms such as sexual abuse and maltreatment yielding the largest proportion of poly-victims at approximately 50%; Turner et al., 2013b). These methodological limitations confound results and threaten the accuracy of their conclusions. Indeed, the disparate findings in the victimization literature (in terms of the psychosocial impact and risk factors of victimization) may in actuality be a consequence of researchers not controlling for multiple victimization in their analyses (Finkelhor, 2009).

Results of the current study underline that the accumulation of multiple victimization, compared to specific victimization forms, is best predictive of psychosocial difficulties. It has been found that multiple and poly-victimization are linked to greater psychosocial difficulties than chronic victimization of a single victimization as they inherently threaten safety, stability, and nurturance in multiple contexts (e.g., school, home, neighbourhood) and erode key developmental processes and resources that help buffer against the negative

effects of victimization (Romano et al., in press; Turner et al., 2013c). The important impact of multiple victimization over chronic or single victimization provides strong support for the continued study of multiple victimization, compared to the study of single victimization experiences, which can lead to simultaneously over-estimating the impact of single events and under-estimating the impact of other victimizations on individual functioning (Finkelhor, 2009). The absence of controlling for children's multiple victimization experiences when examining links between particular victimization forms and either risk factors or outcomes simply leaves too many alternative explanations for findings yielded by such studies. While it may not be feasible for all studies on the topic of childhood victimization to include a broad screen of the many forms of victimization experiences that exist, the inclusion of a few additional forms would nevertheless be an important improvement, and conclusions of such studies need to reflect the limitations inherent to not controlling for the known interconnection among victimizations (Hamby & Grych, 2013).

An additional avenue for future research is related to the quantitative methods used to evaluate the co-occurrence among victimization forms. While it would require a large sample size, latent class modeling would help elucidate the various ways in which victimizations cluster together. These clusters could then be used to examine risk and outcome models. Similarly, research could use logic probability modeling to further shed light on the ongoing debate regarding the utility of weights in the prediction of outcomes. Such methodologically rigorous studies are starting to take root in the multiple victimization literature and are further cementing the validity of the concepts of multiple and poly-victimization. For example, Ford and colleagues (2013) examined latent classes of justice-involved youth (age 10 to 13) using a 19-item adversity scale, and they identified various

subgroups of poly-victims, multiple-victims, and a low adversity class as well as psychosocial outcomes related to these different groups. Recent studies have also used Structural Equation Modeling to examine dynamic outcome models of multiple and poly-victimization (e.g., Turner et al., 2013c). These more advanced statistical methodologies would allow us to explore the pathways to and profiles of multiple victimization. For example, an interesting avenue for future research would be to better understand the various profiles of multiple victimization and to examine the differences and similarities between them. Examples of such research would include studies that examine whether multiple victimization that involve multiple perpetrators or that occurs in specific contexts or ecologies (e.g., home), is related to different associations to psychosocial difficulties or, perhaps, different ecological risk factors.

Finally, when collecting sensitive data such as data on childhood victimization, methods of data collection from caregivers need to anticipate and overcome barriers to participation, such as fear of child welfare involvement for disclosure of maltreatment or social desirability. Anonymous Internet designs may be a promising avenue for future research on the topic. With the growing availability and use of the Internet, even among families with low incomes and from rural settings (83% of all households in Canada; Statistics Canada, 2013b), researchers are now able to access a wide diversity of populations through the use of Internet surveys in cost-effective manner.

Applied implications. Practitioners and organizations in the area of childhood victimization tend to work in isolation from one another (Grych & Swan, 2012). For example, child welfare focuses primarily on childhood maltreatment, schools focus primarily on peer victimization, law enforcement focuses primarily on neighbourhood crimes, and so

on. It has been argued that this narrow focus is an obstacle to the mandate of all these sectors, which is to promote and support the well-being of children (Turner, Hamby, & Baynard, 2013b).

The ubiquitous nature of multiple victimization suggest that clinicians need to inquire about a broad range of potential victimizations in applied settings in order to obtain a comprehensive portrait of children's victimization experiences. As most victimized children have experienced multiple victimization and a significant minority (i.e., 10-20%) poly-victimization, assessment and intervention efforts need to pay particular attention to the fact that children exposed to one type of victimization are highly likely to have experienced additional forms of victimization and, in addition, that the breadth of victimization exposure (e.g., in home and school) is more strongly related to psychosocial difficulties than any one type of victimization. Broad assessment of children's victimization histories with the use of such measures as the JVQ enables practitioners to gather a comprehensive understanding of children's risk and prevent potentially minimizing children's victimization history that could occur, for example, when asking children only about exposure to bullying or child abuse (Finkelhor, 2009). Furthermore, a broad assessment of victimization is required to identify the most at-risk children, that is multiple and poly-victims.

As most victimized children are multiply-victimized and there are large interconnections among victimizations, prevention and intervention programs need to consider childhood victimization as a condition. The documented finding that victimization forms, particularly severe forms, tend to co-occur with one another incite practitioners and program developers to expand their treatment or prevention efforts beyond a single focus to a multifaceted approach (Finkelhor et al., 2011; Turner et al., 2013b). This would

undoubtedly necessitate a more robust collaboration among varying fields of expertise, both in terms of discipline (e.g., criminology, social work, psychology) and field of research (e.g., maltreatment, bullying, parenting, neighbourhood systems), as has been suggested by Hamby & Grych (2013).

There exists a need for practitioners to address the underlying vulnerability (e.g., emotion deregulation, victim-schema) that places children at risk for multiple forms of victimization in order to divert the common re-victimization trajectory of multiple victimization (Finkelhor et al., 2011; Turner et al., 2012). Finkelhor (2009) attested that children are particularly at risk for multiple and poly-victimization during school transitions, particularly Grade 1 and entry into high school. As Finkelhor and colleagues (2011) have argued, prevention and intervention efforts during these transitions into new schools could thwart the onset of multiple and poly-victimization.

Part II: Ecological Risk Models of Childhood Multiple Victimization

Key Findings

Objective 1: Childhood multiple victimization risk model. A general childhood victimization risk model was developed, grounded within the ecological framework. As has been established by empirical studies (Cicchetti & Lynch, 1995; Nader, 2008), family risk factors were anticipated to make the greatest contribution to the risk of victimization, followed by child factors and then neighbourhood factors. Results supported this hypothesis, with family factors accounting for a greater porportion of the variance in the risk model, followed by child factors. Neighbourhood factors were not significantly associated to victimization experiences. The lack of statistical significance for the neighbourhood variables may have been a function of the sample. Specifically, school-aged children

typically spend less time unsupervised in their neighbourhood than adolescents, thereby reducing the possible influence of the neighbourhood on various victimization experiences. Instead, measures of school yard safety and supervision, as well as involvement in afterschool programs or camps, may be a more salient correlate of victimization in a school-aged sample. Also, as this sample was limited to the Ottawa/Gatineau area, it is possible that low variance on neighbourhood characteristics would have diminished statistical power to uncover neighbourhood effects.

Turning to family factors, younger caregiver age, greater caregiver psychosocial difficulties, and greater family dysfunction as well as the presence of substance abuse problems and low family income, were found to be significant correlates of childhood victimization experiences. Family dysfunction (i.e., little emotional support, little cohesion, greater conflict) accounted for the most variance (23%) in children's victimization scores. The important role of caregivers has been well established in the resilience and victimization literature (Masten, 2006; Romano et al., in press), with the absence of warm and nurturing family bonds not only directly placing children at risk for victimization in the home but also indirectly placing them at risk for victimization in other settings (school, neighbourhood). This latter finding may be the results of caregivers in dysfunctional homes modelling aggressive or uncooperative behaviours or it may be that children that are victimized at home lead to emotional deprivation or a victim-schema that may place children at risk for victimization outside of the home (Finkelhor, 2009). Results also indicated that greater caregiver psychosocial distress and the presence of caregiver substance abuse problems were associated with greater victimization exposure. These results are similar to a previous study of 2,017 children ages 6 to 9 year olds (Turner et al., 2012), wherein childhood

victimization, in particular victimization occurring within the family, was found to co-occur with the presence of caregiver psychosocial difficulties, substance abuse problems, and dysfunctional parental practices.

The hypothesis that positive parenting and caregiver supervision would be associated with victimization risk was not supported. It may be that these variables were not significant as the family dysfunction variables accounted for the statistical variance of this construct of parenting. Indeed, family dysfunction was significantly associated at the .001 level with positive parenting ($r = -.31$) and supervision ($r = .27$). Further, while caregiver psychosocial distress and substance abuse problems were not significantly associated with the parenting variables ($r > .10$), these parenting variables may tap into the general construct of caregiver adversities. Indeed, Turner et al. (2012) found that caregiver mental health and substance abuse were most strongly related to indicators of family risk and stability, such as inconsistent parenting and poor supervision. This shared construct variance, merged with limited statistical power (associated with sample size, modest internal consistency of the parenting variables, and the dichotomization of the supervision variable), would have required a large effect from the two parenting variables in order to reach statistical significance. In short, it may be that, while these parenting variables are indeed important predictors of childhood victimization, as supported by past research (e.g., Romano et al., 2011), these parenting variables did not reach statistical significance in the current study due to the comprehensive nature of the risk model tested and associated restricted power. In addition, multiple victimization researchers have posited that the link between poor parental supervision and victimization may be mediated by one or more constructs. For example, Finkelhor et al. (2007b) found that poor parental supervision was associated to an increased

likelihood of revictimization one year later, but this association was only noted in bivariate analyses (i.e., correlations) and was no longer significant in multivariate analyses (i.e., multiple regression model).

For socio-demographics, the following predicted greater victimization exposure: low family income and younger caregiver age. There was also a statistical trend for non-intact family. Similar to past research (Finkelhor et al., 2009b), low income was found to be associated to increased risk of childhood victimization. The association between household income and victimization has been posited to exist as conditions of poverty inevitably increase stress levels in a family and subsequently the risk of family-perpetrated victimization, especially when combined with such caregiver characteristics as low warmth and harsh discipline (Cicchetti & Valentino, 2006). In addition, low family income may dictate housing options, which may also place children at risk if they live in neighbourhoods with high population density and crime rates coupled with limited caregiver supervision (Grych & Swan, 2012). Similar to past research (Finkelhor et al., 2007a; Jablonska & Lindberg, 2007), there was a trend for children from non-intact households (i.e., single or step-families) to experience greater victimization. However, researchers have also found that, with more detailed analyses, family composition is a proxy for additional risk factors such as family dysfunction and neighbourhood violence (Turner et al, 2012). It may be that this risk factor did not achieve statistical significance as the model controlled for additional risk factors such as family dysfunction, neighbourhood safety, and caregiver age, which may have limited the statistical variance that may be accounted for by family composition.

Turning to child factors, the following were predictive: sex and age. More specifically, boys had increased risk of experiencing victimization. Generally, the prevalence

of multiple victimization generally has not been found to vary according to sex (Finkelhor, 2005a; 2005b; 2007a; 2007b). However, these studies have examined a heterogeneous age group (2-17) and so the significance of child sex may be related to age. For example, whereas girls have been found to be at greater risk of violence from the ages of 0 to 8 years, boys have been found to be at greater risk between the age of 9 and 12 (Canadian Centre for Justice Statistics, 2008). However, it has been argued that the effect of child sex on victimization patterns tends to be increasingly pronounced as children get older (Finkelhor, 2009). There was also a trend for older child age to be associated with increases in victimization scores. This finding corresponds to a number of studies demonstrating that children's lifetime victimization counts increase with age, as do multiple and poly-victimization (Finkelhor et al; 2005a; 2007b).

Objective 2: Risk modeling across victimization forms. The purpose of this objective was to contribute to the ongoing debate regarding the specificity and non-specificity assumptions of childhood victimization. Results were generally expected to be similar when comparing the fit of the general childhood victimization risk model to the specific risk models of victimization forms. Specifically, it was anticipated that family factors would most likely remain consistent predictors across the various victimization forms. Several differences across socio-demographic risk factors were anticipated, and it was posited that these differences would be greater across victimization forms that are morphologically dissimilar.

Results generally corresponded to the hypotheses. Specifically, the observed overlap and variability across models lent partial support to the specificity or generalist modeling of childhood victimization. Similar to previous research (Turner et al., 2013a), socio-

demographic factors, particularly child age, ethnicity, and sex, showed the greatest variance across victimization forms. Family characteristics, such as greater positive parenting, greater caregiver psychosocial symptoms, and the presence of substance abuse problems, were common risk factors of childhood victimization and were particularly salient for victimization forms within the home (e.g., maltreatment, exposure to family violence). Nevertheless, only three of the seven models tested reached statistical significance; that is, the set of risk factors which predicted general childhood victimization did not also significantly predict the following forms of victimization: peer and/or sibling; witness/indirect; sexual; and Internet. It should be noted that the non-significant findings might have been a function of low statistical power. Indeed, the significant models (exposure to family violence, maltreatment, and conventional crimes) were also the models with the greatest statistical power as they were closest to the 50/50 base rate⁶.

Theoretical, Research, and Applied Implications of Part II

Theoretical implications. The results of the risk models, as well as the overlap found among general (Objective 1) and specific risk models (Objective 2), can be construed as support for the cumulative risk theory and ecological perspective. In particular, results suggest that victimization risk is multi-faceted, and risk emerges from a transactional interplay between the various ecological systems. In addition, risk modeling demonstrated the important role of family correlates. This is in keeping with the ecological perspective, which highlights that distal systems (e.g., neighbourhood factor) may only be associated with child functioning to the extent that they impact more proximal systems, such as the

⁶ High and low base rates constrict statistical power (the closer the rates are to 50/50, the better the power).

family. Results from the current study supported the importance of a “*both-and*” approach to examining the specific and general risk factors of childhood victimization. That is, while research on the development of risk models for specific forms or types of victimization is important, it is also important to consider that each victimization is part of a larger pattern of violence, and its etiology overlaps considerably with those of other victimizations. As such, the continued development of complex and integrative theoretical models is needed to better understand the mechanisms underlying the interconnection among victimizations. Such theories would allow us to synthesize and integrate findings stemming from the multiple victimization literature (Hamby, 2011).

The majority of existing theories of victimization focus on distinct victimization forms or specific contexts (Hamby & Grych, 2013). However, the interconnections among various experiences of violence also suggest that theoretical integration is required as it would allow for a better understanding of violence, including the mechanisms that underlie the interconnections among violence across forms, contexts, and time (Hamby, 2011). As the field of multiple and poly-victimization is relatively new, such theories are only recently emerging. For example, Hamby and Grych (2013) have proposed a theoretical model of violence that attempts to synthesize current theoretical models, such as the General Aggression Model and the I³ theory of intimate partner violence. The ecological perspective, as has been argued by Finkelhor (2009), is an excellent theoretical framework of childhood multiple and poly-victimization as it acknowledges the complex, dynamic, and interactional nature of childhood adversity and risk. The principles of equifinality and multifinality can further inform such theoretical endeavours by highlighting the complex and dynamic relations between various risk factors and childhood victimization. As research in this field

continues to grow and develop, so do its theoretical and conceptual frameworks. Such frameworks are essential to better understanding and integrating research data and to guide preventative and intervention programs (Hamby, 2011).

Research Implications. Part II of the dissertation attempted to identify the risk factors of childhood victimization (Aim 1) and to examine the overlap between the risk factors assessed and various forms of victimization (Aim 2). Future research should endeavour to continue unraveling these research questions and addressing the limitations inherent to the current sample. In particular, as many of the victimization forms have low base rates or, in some cases (e.g., peer and/or sibling) large base rates, statistical power for Aim 2 was constrained. A large-scale study would allow for a more in-depth and accurate examination of the overlap among risk factors across victimization forms. For example, due to constrained statistical power, family structure was dichotomized. The examination of the various categories of this variable (i.e., step-families, single parents) would allow for a more nuanced evaluation of the impact of family structure on victimization risk. Furthermore, while a number of risk factors were evaluated, the ecological perspective suggests that risk factors for victimization are remarkably broad and, as such, relevant risk factors may have been ignored (e.g., relationships with school personnel or substitute attachment figures). However, given that data collection was conducted online and restricted to 30 minutes to reduce attrition rates, the current study could only collect a limited number of risk factors or correlates. Nevertheless, findings highlighted the important role of the family in creating a context of risk for most forms of victimization, as well as multiple victimization more broadly.

In terms of risk models, additional studies should continue to delineate the risk factors of childhood multiple victimization, including dynamic factors across multiple contexts (e.g., family, school) and specific developmental periods. A better understanding of dynamic and changeable risk factors (as opposed to static risk factors such as ethnicity and child sex) is an important avenue of research as it is particularly informative for the formulation of prevention and intervention programs for children. One avenue for future research would include examining these dynamic family-level risk factors in longitudinal studies to better understand how these factors are related to multiple- and poly-victimization. Additional studies are also required to develop outcome models that examine moderators and mediators and that expand beyond trauma symptoms to a range of outcomes, including emotional/behavioural, educational, and cognitive functioning.

Pundits in the field stress the need to move towards child-centered or child-informed research and theories. For example, Hamby and Grych (2013) argue that a child-focused approach to victimization research would promote holistic interdisciplinary research and would collapse “domain-based” research that inherently fragments our understanding of childhood victimization. Indeed, as explained by Baynard and colleagues (2013), a hallmark of childhood multiple victimization is that victimization extends across multiple contexts and involves multiple perpetrators. A child-centered and holistic approach to childhood victimization scholarship would in turn avoid compartmentalization of research and services (Hamby & Grych, 2013). This child-centered and holistic approach to childhood victimization corresponds well with the ecological perspective and the principles of multifinality and equifinality, both of which underscore the need for risk models that account for the multifaceted, transactional, and dynamic nature of development.

In a similar vein, a more holistic approach to risk modelling in childhood victimization is essential. Risk models that focus on a particular form of victimization, such as sexual abuse or peer victimization, while important, may fail to identify relevant risk factors or contexts of risk. On the other hand, a broad-lens conceptualization of childhood victimization encourages researchers to consider the many contexts that might generate risk of victimization as well as the contexts that are a source of protection and may prevent/buffer the effects of victimization. This holistic approach to victimization further encourages researchers to disentangle how multiple forms of victimization might build upon one another and interact with family, child, and neighbourhood factors to create risk. Furthermore, as multiple types and forms of victimizations share common risk factors, prevention and intervention efforts that target these shared risk factors will likely have the strongest effects (Finkelhor et al., 2011). However, research is still needed to help uncover these underlying risk factors and better understand how they influence one another to create risk. On the other hand, research designed to identify the commonalities and disparities among risk factors across the different victimization forms is important as it may help to nuance and inform theoretical risk models.

An interesting avenue for future research that aims to test risk models of victimization in school-aged populations would be to include risk factors at the level of the school, such as schoolyard supervision or safety as well as involvement in after-school programs. Indeed, while neighbourhood factors such as community violence have been found to be a relevant risk factor for children (e.g., Finkelhor, 2009), school-aged children are most in contact with members of their community in the school or daycare settings so it would be important to encapsulate this system in future risk models.

Applied implications. With the exception of the recent study by Turner and colleagues (2013a), there exists limited research that compares the applicability of risk models across a wide range of victimization forms as well as childhood victimization more broadly. Results from the current study highlighted the important role of the family on school-aged children's victimization experiences. Not only did family factors (e.g., substance abuse problems, caregiver age, caregiver psychosocial difficulties, family dysfunction) account for the most variance in children's victimization scores but family risk factors tended to remain salient across victimization forms. The importance of the family has been consistently noted in the childhood multiple victimization literature (Turner et al., 2012) and broader resiliency literature (Masten, 2009). In this school-aged sample, family risk factors were most strongly associated with family-perpetrated violence, such as maltreatment and exposure to family violence.

Within a developmental perspective, it may be that these family risk factors coalesce to create a condition of risk for family-perpetrated violence. However, as has been documented in the multiple victimization literature (Hamby & Grych, 2013), exposure to violence in one context creates risk for additional victimizations, both across different contexts and within different relationships. It may be that the family conditions that first contributed to family-perpetrated violence have longstanding effects on key developmental processes (e.g., attachment, emotional regulation) that radiate outwards and interact with the various contexts in which children find themselves (e.g., school) to create risk for additional forms of victimization (Grych & Swan, 2012). Indeed, it has been argued that the interconnections between victimization forms are dynamic and transactional in nature (Finkelhor, 2009) and are associated with the disruption of cognitive and biological

processes in children that cascade outwards and interact with additional systems to create risk (Romano et al., in press). This developmental and ecological conceptualization of victimization risk emphasizes the importance of early intervention. In particular, early intervention at the level of the family may help to divert children's victimization trajectories.

Furthermore, unlike the bulk of multiple victimization research, the current study examined a number of dynamic risk factors (e.g., caregiver psychological functioning, supervision) in addition to static variables, such as socio-demographic variables. Indeed, new waves of multiple victimization research (e.g., Turner et al., 2013a; Turner et al., 2013b) are expanding the evaluation of multiple victimization risk beyond static socio-demographic variables to include family-related variables. From an applied perspective, the fact that certain risk factors predicted some forms of victimization and not others provides support for the specificity assumption of childhood victimization.

Although there exists a need for replication, research that aims to disentangle common and specific risk factors of victimization can inform victimization theories of risks and effects. Indeed, the field of multiple victimization advocates for the need to evaluate and better understand co-occurrence among victimization forms, including those that are morphologically dissimilar. In addition to deepening our knowledge base of etiological processes related to victimization, such endeavours would allow for the formulation of comprehensive, integrated and evidence-based prevention and intervention programs of childhood victimization. Indeed, the ubiquitous nature of the co-occurrences among victimization forms as well as the subset of shared risk factors further suggests that targeting one form of victimization in either prevention or intervention efforts may have an impact on other victimization forms (e.g., reduction in one may lead to reduction in another; Hamby &

Grych, 2013). Programs targeting risk factors that overlap across various forms of violence may offer a cost-effective solution to sparse government resources.

Conceptual and Methodological Limitations of the Dissertation

It is important to note several limitations inherent to the dissertation's methodology. The current study was cross-sectional in nature and, as such, the precise nature of relationships among variables cannot be determined. Furthermore, the current study relied on a convenience sample and, as such, the generalizability of findings to the Canadian population is unknown. However, a comparison of the sample to Statistics Canada data speaks to the similarities in socio-demographic variables between study participants and individuals living in the Ottawa/Gatineau region. Another limitation was that statistical power was constrained for low base rate events⁷, such as Internet and sexual victimization. As such, effect sizes were interpreted when appropriate. One contribution of the current study was that a clinical subgroup was identified based on whether children were on a waitlist for or receiving psychological services or whether they had received a mental health diagnosis from a health professional. While this method allowed for comparative analyses, the method most likely led to an underestimation of the clinical sample since it is estimated that only 1 in 6 children with a mental health problem receives interventions (OMHS, 1998). As such, it is possible that a significant number of children in the community sample would have had similar rates of victimization and psychological distress as children in the clinical sample, thereby perhaps minimizing the differences found between clinical and community subsamples.

⁷. Of note, such low base rate events require a sample size of over 4,000 (Tosteson, Buzas, Demidenko & Karagas, 2003).

Next, the accuracy of lifetime recall cannot be guaranteed. Selective recall may artificially enhance the association between psychological difficulties and victimization experiences (Widom, Raphael, & DuMont, 2004). In the current study, caregivers with children who were struggling with psychosocial difficulties may have been more likely to remember their children's victimization experiences, perhaps in an effort to help explain their children's difficulties. As such, it is possible that the association between multiple victimization and psychological difficulties was inflated. In a similar vein, as this study relied upon single informants (i.e., caregivers), common method variance may have contributed to an over-estimation of the association among variables.

In addition, the current study relied on caregiver reports of childhood victimization. The use of proxy reports raise important questions surrounding validity, especially for such constructs as victimization. The use of the self-reported JVQ, however, is not recommended for children under the age of 9 years as researchers suggest young children may have difficulty understanding the JVQ items, may be less honest in their responses, and/or may lack the memory retrieval skills required to report on a narrow time frame (Finkelhor et al., 2005b). In a similar vein, in a study on the victimization experiences of children involved with child welfare, Cyr and colleagues (2013a) used the caregiver version of the JVQ as two focus groups found that children under the age of 12 years had difficulty understanding the implications of informed consent, making their involvement in research studies questionable.

The JVQ-CR and the JVQ self-report (JVQ-SR) have been compared to assess respondent effects, and no evidence of reporter bias has been found (Finkelhor et al., 2005b; 2009). Notably, a recent U.S. nationally representative study (NATSCEV) compared response patterns of 9-year olds (i.e., caregiver-reports) and 10-year olds (i.e., self-reports)

on the JVQ-revised (with supplemental scales) and found no differences among caregiver reports and self-reports on maltreatment and caregiver perpetrated victimization (Finkelhor et al., 2009). While no reporter bias has been found to date, it was anticipated that the anonymous Internet design employed in the current study would enable researchers to gather more accurate victimization data by perhaps discouraging some caregivers from misrepresenting children's victimization experiences out of fear of reprisal (e.g., child welfare involvement). Indeed, research has demonstrated that participants in Internet-administrated studies tend to engage in less socially desirable responding than participants in either traditional paper-and-pencil or phone interview administrations (Gosling & Vazire, 2004).

There exist additional limitations related to the dichotomous measurement of victimization experiences. A continuous measurement of victimization, as well as an evaluation of the severity of the victimization (e.g., use of weapons, injury), would have strengthened and nuanced the construct of victimization. It can be argued that the dichotomous strategy employed in the current study limited the sensitivity of the victimization construct, thereby reducing our ability to detect relationships.

Future research should endeavour to address the above-mentioned methodological and conceptual limitations. As is the case for all research, this dissertation represents but one block in the building blocks of knowledge and scholarship of childhood multiple victimization. There exists a need for replication, in particular with studies that examine large samples sizes, utilize population-stratified sampling, identify clinical subsamples, and employ multiple informants to gather victimization data.

Concluding Remarks

The current dissertation was designed to significantly contribute to the literature by examining the victimization experiences and associated risk factors of a school-aged sample of children living in the Ottawa/Gatineau area. This dissertation highlighted the ubiquitous nature of childhood multiple victimization and demonstrated the significant links between childhood victimization and children's psychosocial functioning as well as family characteristics (e.g., caregiver psychosocial difficulties and substance abuse). The dissertation further illustrated the common co-occurrence among different victimization forms.

Findings from the dissertation, along with most research in this field, point to a number of important avenues for future research. Research on multiple victimization risk and outcomes is still in its infancy and, as such, theoretically-grounded and holistic risk and outcome models of multiple victimization are only now beginning to take shape in the scientific literature. There continues to exist a need for research that attempts to both unravel and integrate the risk models across various victimization forms. Comprehensive risk models that include dynamic, malleable risk factors would allow us to create comprehensive risk models, which would then feed into improving current prevention and intervention efforts. In a similar vein, attempts to better understand the co-occurrences among victimization forms would allow for the development of more holistic and complete theories of victimization and, consequently, would also aid in ameliorating current prevention and intervention programs for children at-risk. Indeed, findings stemming from this dissertation, along with a

multitude of other studies, highlight the important interconnections across victimization experiences and contexts. The ecological perspective can guide researchers to adopt a holistic and child-centered approach to the examination of childhood victimization, expanding the focus to a breadth of victimizations and ecologies.

Hamby and Grych (2013) argue that this holistic approach to victimization in both research and applied settings, which requires integration and collaboration across disciplines, is the second wave of victimization/violence scholarship. Additional developmentally-specific and theoretically-driven studies are needed that examine the full scope of victimization to which children are exposed and that aim to disentangle the interconnections among victimization forms, along with their common/unique risk factors and their sequelae. Such scientific inquiry is essential for the effective prevention and treatment of childhood victimization.

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Table 1

Consequences of Violence Against Children

Physical health	
Abdominal/thoracic injuries	Burns and scalds
Brain injuries	Fractures, bruises and welts
Lacerations and abrasions	Damage to the eyes
Central nervous system injuries	Disability
Sexual and reproductive health	
Sexual dysfunction	Sexually transmitted infections
Reproductive health problems	Unwanted pregnancy
Psychosocial health	
Alcohol and drug abuse	Eating and sleep disorders
Cognitive impairment	Hyperactivity
Depression and anxiety	Shame and guilt
Developmental delay	Dysfunctional relationships
Poor academic performance	Psychosomatic disorders
Poor self-esteem	Post-traumatic stress disorders
Suicidal behaviour	Self-harm
Other long-term health consequences	
Cancer	Irritable bowel syndrome
Chronic lung disease	Liver disease
Ischaemic heart disease	Reproductive health problems (e.g., infertility)
Financial consequences	
<i>Direct costs</i>	
Treatment, visits to hospitals or other health services	
<i>Indirect costs</i>	
Lost productivity, disability, decreased quality of life, premature death	
Costs borne by the criminal justice system (apprehending and prosecuting offenders)	
Costs related to social welfare, foster care, education and mental health institutions	
Cost related to the employment sector arising from absenteeism and low productivity	

Source: Adapted from Krugg et al. (Eds). 2002. World Report on Violence and Health. Geneva: World Health Organization.

Table 2.

Sample Description (% unless otherwise specified)

	Total	Community	Clinical
	<i>N</i> = 213	<i>n</i> = 177	<i>n</i> = 36
	%	%	%
Age of child ^a	8.0 (2.0)	7.9 (2.0)	8.6 (1.8)
Sex of child			
Male	52.6	50.6	62.9
Female	47.4	49.4	37.1
Ethnicity of child			
European/Caucasian	79.3	80.3	74.3
African-Canadian	1.0	0.7	2.9
Asian	1.0	1.1	0.0
Middle Eastern	2.3	2.8	0.0
First Nations	2.8	1.1	2.9
Hispanic	1.4	1.1	8.6
Mixed-Ethnicity	12.2	12.9	11.3
Household size ^a	4.5 (1.2)	4.5 (1.2)	4.3 (1.2)
Older siblings	36.0	37.9	25.0
Marital Status			
Married	68.1	69.1	62.9
Cohabiting	10.8	10.7	11.4
Single	6.6	5.6	11.4
Stepfamilies	14.5	14.6	14.3
Caregiver education			
High school	15.0	14.6	17.1
College	25.4	24.2	31.4
Bachelor/undergraduate degree	39.4	39.9	37.1

Master's degree	14.1	15.2	8.6
Doctoral degree	3.8	3.9	2.9
Professional Degree (e.g., law, medical degree, veterinary)	2.3	2.2	2.9
Spouse education ^b			
High school	20.8	18.9	28.1
College	29.5	30.3	25.0
Bachelor/undergraduate degree	30.8	30.9	31.3
Master's degree	14.0	14.9	9.4
Doctoral degree	3.9	4.0	3.1
Professional Degree (e.g., law, medical degree, veterinary)	1.0	1.0	3.1
Household income (before tax)			
Less than 19,999	0.9	1.1	0.0
20-49,999	12.7	11.2	20.0
50-79,999	15.5	14.1	22.9
80-109,999	25.9	27.6	17.8
110-119,999	20.2	19.7	22.2
Over 140,000	24.8	26.3	17.1

Note. ^aMean (Standard Deviation), ^bApplicable in 97.2% of cases. No statistical differences found between the groups (all *T*-tests and Chi-Squares $p > .05$)

Table 3.

Univariate Assumption Testing and Remedy for Violations (Part I)

Assumption	To Detect a Violation	Violation Detected	Remedy
<i>Ratio of cases to independent variables</i>	<p>In order not to violate this assumption, the sample size must be larger than $50 + 8m$ (where m is the number of independent variables). The largest m was 20 for the multiple linear regression (risk model), requiring a sample size of 210.</p> <p>For Chi-square all expected cell counts should be above 1 and no more than 20% should be less than 5.</p>	None	n/a
<i>Absence of univariate outliers</i>	<p>Categorical variables: examination for impossible values</p> <p>Continuous variables: $z = \pm 3.29$</p>		<p>Several univariate outliers (see below) were identified and, to preserve rank order, these outliers were reduced to one unit higher than the highest score for that variable.</p> <p><u>TSCYC</u>: Two cases were found to have Z scores above 3.29 on the anxiety, depression, anger/aggressive subscales of the TSCYC. In addition, four cases had Z scores above 3.29 on the TSCYC PTSD total subscale.</p> <p><u>JVQ</u>: Three scores on the JVQ-CR-R1 lifetime total score also were above 3.29. one outlier on Indirect/Witness and one on lifetime Maltreatment.</p>
<i>Absence of multicollinearity and singularity</i>	<p>Bivariate correlations were conducted for all independent variables. A correlation of greater than .70 was deemed to indicate a problem with multicollinearity (Tabachnick & Fidell, 2007).</p>	none	n/a
<i>Normality</i>	<p>Assessed whether the skew of the variables violated the suggested cutoff of $z = \pm 3.29$ by Tabachnick & Fidell (2007). As the sample size is greater than 200, assessment kurtosis</p>		<p>Several subscales were found to have significant skew:</p>

was not required (Tabachnick & Fidell, 2007).

JVQ: sexual victimization, internet victimization, maltreatment and family abuse/violence. As suggested by Tabachnick & Fidell (2007), square root transformations resulted in acceptable skew values for maltreatment and family abuse/violence. The continuous sexual and internet victimization scores were severely skewed and were required to be dichotomized.

TSCYC:

- While the subscales of the TSCYC (Anxiety, Depression, Anger/Aggression, PTSD) were not skewed, after remedying outliers, the overall psychosocial symptom score of the TSCYC (used for Aim 6) was found to be significantly skewed. A square root transformation resulted in an acceptable skew value for this distress scale.

AP: The positive parenting and parental supervision scales were significantly skewed. The positive parenting scale required a square root transformation. The parental supervision scale was dichotomized (0 = answered never to all three supervision items; 1 = answered yes to any supervision items).

ASR: For the regression analysis in Part II, the ASR Depression, Anxiety and Antisocial scales were first standardized and then summed into a general scale of mental difficulties. This scale was skewed and therefore transformed using the following equation $\text{SQRT}(\text{variable} + K)$

Linearity and Homoscedasticity

Bivariate scatterplots between the one continuous measures were examined for violation of linearity and homoscedasticity

None

n/a

Table 4.

Multivariate Assumption Testing and Remedy for Violations (Part II)

Assumption	To Detect a Violation	Violation Detected	Remedy
<i>Absence of multivariate outliers</i>	The presence of multivariate outliers was assessed by examining Mahalanobis' Distance ($p < .001$) and the influence of multivariate outliers by examining Cook's Distance (Cook's $D > 1$).	None. Mahalanobis' Distance and Cook's Distance statistics were all in acceptable ranges	n/a
<i>Absence of multicollinearity and singularity</i>	Tolerances and VIF statistics were examined. Problems with multicollinearity were assumed if either the tolerance or VIF statistics were very low (tolerance under .10, VIF greater than 10; Tabachnick & Fidell, 2007).	None. The VIF and Tolerance statistics in multivariate models were in acceptable ranges	n/a
<i>Normality of the residuals</i>	Residual scatterplots were examined (ZPRED vs. ZRESID) to test for this assumption.	Scatterplots for the regressions were examined. A concentration of residuals in the center of the distribution was deemed as evidence that this assumption was not violated).	n/a
<i>Linearity and homoscedasticity of the residuals</i>	Residual scatterplots were examined (ZPRED vs. ZRESID) to test for this assumption.	None (see above)	n/a
<i>Independence of errors</i>	It was expected that this assumption would be respected due to the design of the study (i.e., cases are independent from each other; not a repeated-design).	None	n/a

Table 5.

Lifetime Victimization Rates

	Total	Lifetime		²
		Boys	Girls	
Multiple Victimization^a	86.9	90.2	83.2	2.29[†]
Poly-Victimization^b	10.8	14.3	6.9	2.98[†]
Any Conventional Crime	73.7	75.9	71.3	0.58
Any physical assault	82.6	88.4	76.2	5.46*
Assault with a weapon	12.2	18.8	5.0	9.44***
Assault without a weapon	42.3	50.0	33.7	5.81**
Attempted assault	7.5	9.8	5.0	1.81**
Kidnapping	1.4	1.8	1.0	0.24
Bias attack	4.2	4.5	4.0	0.03
Any property victimization	60.1	58.0	62.4	0.42
Robbery	37.6	35.7	39.6	0.34
Theft	17.4	23.2	10.9	5.62**
Vandalism	37.1	33.9	40.6	1.01
Any Maltreatment	27.7	32.1	22.8	2.34[†]
Physical abuse	11.3	13.4	8.9	1.07
Psychological/emotional abuse	18.8	24.1	12.9	4.40*
Neglect	2.3	2.7	2.0	0.11
Custodial interference	5.2	3.6	6.9	1.22
Any Peer and/or Sibling Victimization	83.6	84.8	82.2	0.27
Gang/group assault	5.6	7.1	4.0	1.01
Peer/sibling assault	74.2	75.0	73.3	0.08
Genital assault	13.6	25.0	1.0	26.03***
Bullying	31.5	32.1	30.7	0.05
Emotional bullying	45.1	47.3	42.6	0.48
Dating violence	0.9	0.9	1.0	0.01
Any Sexual Victimization	9.4	9.9	8.9	0.06
Any sexual assault	2.8	4.0	1.8	0.92
By a known adult	0.0	0.0	0.0	-
By a non-specified adult	0.0	0.0	0.0	-
By a peer	2.8	4.0	1.8	0.92
Rape, completed/attempted	0.0	0.0	0.0	-
Sexual exposure/flashed	5.6	6.3	5.0	0.17
Sexual harassment	1.9	1.8	2.0	0.01

Sexual misconduct/statutory rape	0.9	0.9	1.0	0.01
Any Witness/Indirect Victimization	43.7	46.4	40.6	0.74
Witnessed an assault with a weapon	8.5	8.0	8.9	0.05
Witnessed an assault without a weapon	22.1	23.2	20.8	0.18
Someone close murdered	4.7	3.6	5.9	0.67
Saw a murder	5.6	7.1	4.0	1.01
Exposed to shooting, bombs and/or riots	1.9	0.9	3.0	1.24
In a war zone	3.3	5.9	0.9	4.26*
Internet Victimization	6.1	6.9	5.4	0.23
Cyber bullying	5.2	5.9	4.5	0.24
Sexual harassment	1.4	0.9	2.0	0.45
Any Exposure to Family Violence	32.4	38.4	25.7	3.88*
Parent threatened to hurt other parent	5.6	7.1	4.0	1.01
Parent break/punch object	21.6	24.1	18.8	0.88
Parent pushed by other parent	12.2	14.3	9.9	0.95
Parent hit/slapped by other parent	7.5	9.8	5.0	1.81
Parent kicked/choked or beat up other parent	3.8	3.6	4.0	0.02
Grown-up/teen push, hit or beat up other	7.5	4.5	10.9	3.16**

Note. ^a exposure to two or more victimization types, excluding the supplemental JVQ scales (i.e., Internet Victimization and exposure to family violence and abuse). ^b poly-victim status classification varies by age in the following way: 6 years > 9 types; 7-10 years >10 types; 11-12 years >12 types *** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

Table 6.

Demographic Characteristics by Lifetime Victimization Exposure (% unless otherwise specified)

	Non-Victim <i>n</i> = 6	Single-Victim <i>n</i> = 22	Multiple-Victim <i>N</i> = 162	Poly-Victim^b <i>n</i> = 23
Characteristic				
Child Age^a	7.17 (1.84)	7.64 (1.99)	8.09 (1.96)	8.35 (2.08)
Child Sex				
Boys	33.3	40.9	52.5	69.6
Girls	66.7	59.1	47.5	30.4
Child Race/ethnicity				
Caucasian	66.7	68.2	81.5	78.3
Ethnic Minority	33.3	31.8	18.5	21.7
Caregiver Education				
High School	16.7	13.6	14.2	25.0
College/Trade	33.3	18.2	25.4	31.3
Undergraduate degree	50	50.0	38.5	31.3
Graduate degree	0	18.2	18.9	12.4
Professional degree (e.g., Md, LLB.)	0	0	3.0	0
Spouse Education^c				
High School	16.7	19.0	18.7	41.9
College/Trade	16.7	23.8	31.3	28.5
Undergraduate degree	66.6	38.1	30.1	14.3
Graduate degree	0	19.1	18.7	14.2
Professional degree (e.g., Md, LLB.)	0	0	1.2	1.1
Family Income (before tax)				
Less than 19,999	0	0	0.6	4.3
20,000-29,999	0	0	4.9	13.0
30,000-39,999	0	9.1	2.5	4.3
40,000-49,999	0	4.5	4.3	4.3
50,000-59,999	0	0	4.9	17.6
60,000-69,999	0	4.5	4.9	4.3
70,000-79,999	16.7	9.1	4.3	4.3
80,000-89,999	16.7	18.4	7.4	13.0
90,000-99,999	0	4.5	5.6	4.3
100,000-109,999	16.7	4.5	13.0	4.3

110,000-119,999	16.7	4.5	9.9	13
120,000-129,999	16.7	0	6.8	4.3
More than 130,000	16.7	40.9	30.9	8.6
Family Structure				
Married two-parent family	83.3	68.2	69.8	43.8
Common-law two-parent family	0	4.5	11.2	13.0
Stepparent family	16.7	22.8	13.1	21.6
Single-parent family	0	4.5	5.9	21.6
Non-Victimization Adversities	1.00 (1.67)	0.73 (.98)	1.53 (1.48)	3.27 (1.68)
Household Size^a	4 (.63)	4.32 (1.13)	4.54 (1.18)	4 (1.03)
Number of Older Siblings^a	.17 (.41)	.41 (.73)	.55(.81)	.44 (.73)
Clinical Group Membership				
Yes	0	13.6	14.8	39.1
No	100	86.4	85.2	60.9

^amean and standard deviation in parenthesis; ^bthreshold for lifetime poly-victims vary by age (6 years > 9 types; 7-10 >10 types; 11-12 >12 types); ^cwhen applicable

Table 7.

Past-Year Victimization Rates

	Total	Past-Year		²
		Male	Female	
Multiple Victimization	65.7	70.5	60.4	2.42†
Poly-Victimization	23.0	25.9	19.8	1.11
Any Conventional Crimes	50.7	54.5	46.5	1.34
Any physical assault	63.8	70.5	56.4	4.57*
Assault with a weapon	7.0	9.8	4.0	2.78†
Assault without a weapon	25.4	31.3	18.8	4.34*
Attempted assault	4.2	7.1	1.0	4.97*
Kidnapping	0.0	0.0	0.0	-
Bias attack	2.8	2.7	3.0	0.02
Any property victimization	34.7	33.9	35.6	0.07
Robbery	20.7	20.8	20.5	0.01
Theft	7.0	9.8	4.0	2.78†
Vandalism	20.7	18.8	22.8	0.52
Any Maltreatment	9.4	13.4	5.0	4.45*
Physical abuse	2.3	3.6	1.0	1.54
Psychological/emotional abuse	7.0	9.8	4.0	2.79†
Neglect	0.0	0.0	0.0	-
Custodial interference	0.9	0.9	1.0	.01
Any Peer and/or Sibling Victimization	69.0	72.3	65.3	1.21
Gang/group assault	4.7	6.3	3.0	1.28
Peer/sibling assault	55.4	59.8	50.5	1.87
Genital assault	9.9	16.1	3.0	10.26***
Bullying	23	23.2	22.8	0.01
Emotional bullying	34.7	38.4	30.7	1.39
Dating violence	0.0	0.0	0.0	-
Any Sexual Victimization	4.2	4.5	4.0	0.03
Any sexual assault	0.9	0.9	1.0	0.1
By a known adult	0.0	0.0	0.0	-

By a non-specified adult	0.0	0.0	0.0	-
By a peer	0.9	0.9	1.0	0.1
Rape, completed/attempted	0.0	0.0	0.0	-
Sexual exposure/flashed	2.8	3.6	2.0	0.49
Sexual harassment	0.9	0.9	1.0	.01
Sexual misconduct/statutory rape	0.0	0.0	0.0	-
Any Witness/Indirect Victimization	22.1	23.2	20.8	0.18
Witnessed an assault with a weapon	2.3	3.6	1.0	1.54
Witnessed an assault without a weapon	11.7	11.6	11.7	0.01
Someone close murdered	1.4	1.8	1.0	0.24
Saw a murder	0.0	0.0	0.0	-
Exposed to shooting, bombs and/or riots	0.0	0.0	0.0	-
In a war zone	0.0	0.0	0.0	-
Any Internet victimization	3.8	1.8	5.9	2.54
Cyber bullying	3.3	1.8	5.0	1.67
Sexual harassment	0.9	0.0	2.0	2.24
Any Exposure to Family Violence	13.1	12.5	13.9	0.09
Parent threaten to hurt other parent	0.9	0.9	1	0.01
Parent break/punch object	7	7.1	6.9	0.01
Parent pushed by other parent	3.8	4.5	4.0	0.33
Parent hit/slapped by other parent	5.2	5.4	5.9	0.2
Parent kicked/choked or beat up other parent	0.9	0.0	2.0	2.24
Grown-up/teen push, hit or beat up other	3.3	0.9	5.9	2.26*

***p < .001; **p < .01; * p < .05; † p < .10

Table 8.

Demographic Characteristics by Past-Year Victimization Exposure (% unless otherwise specified)

	Non-Victim <i>n</i> = 30	Single-Victim <i>n</i> = 48	Multiple-Victim <i>n</i> = 88	Poly-Victim^b <i>n</i> = 47
Characteristic				
Child Age^a	8.8 (2.3)	8.3 (2.1)	8.0 (2.0)	7.4 (1.5)
Child Sex				
Boys	36.7	52.1	53.4	61.7
Girls	63.3	47.9	46.6	38.3
Child Race/ethnicity				
Caucasian	66.7	79.2	84.1	78.7
Ethnic Minority	33.3	20.8	15.9	21.3
Caregiver Education				
High School	10.0	18.8	15.9	12.8
College/Trade	20.0	20.8	26.1	31.9
Undergraduate degree	56.7	35.4	38.6	34.0
Graduate degree	13.3	23.0	15.9	19.1
Professional degree (e.g., Md, LLB.)	0.0	2.1	3.4	2.1
Spouse Education^c				
High School	20.0	28.9	16.1	22.2
College/Trade	26.7	26.7	31.1	31.1
Undergraduate degree	40.0	24.4	33.3	26.7
Graduate degree	13.3	20.0	19.5	15.6
Professional degree (e.g., Md, LLB.)	0.0	0.0	0.0	4.4
Family Income (before tax)				
Less than 19,999	0.0	0.0	2.3	0.0
20,000-29,999	3.3	2.1	6.8	6.4
30,000-39,999	3.3	4.2	2.3	4.3
40,000-49,999	6.7	2.1	2.3	8.5
50,000-59,999	3.3	6.3	4.5	8.5
60,000-69,999	3.3	4.2	5.7	4.3
70,000-79,999	13.3	4.2	4.5	2.1
80,000-89,999	3.3	12.5	9.1	10.6
90,000-99,999	3.3	6.3	3.4	8.5
100,000-109,999	6.7	16.7	12.5	6.4
110,000-119,999	6.7	8.3	11.4	10.6

120,000-129,999	13.3	2.1	5.7	8.5
More than 130,000	20	31.3	29.5	21.3
Family Structure				
Married two-parent family	63.3	66.7	71.6	66.0
Common-law two- parent family	3.3	10.4	12.5	12.8
Stepparent family	30.0	14.6	12.5	8.5
Single-parent family	3.3	8.3	3.4	12.8
Non-Victimization				
Adversities				
Household Size^a	4.4 (1.2)	4.5 (1.2)	4.5 (1.1)	4.3 (1.3)
Number of Older				
Siblings^a	0.5 (0.9)	0.5 (0.9)	0.5 (0.7)	0.5 (0.8)
Clinical Group				
Membership				
Yes	10.0	14.6	15.9	25.5
No	90.0	85.4	84.1	74.5

^amean and standard deviation in parenthesis; ^bthreshold for past-year poly-victimizations = >5 types (Finkelhor et al, 2009c); ^cwhen applicable

Table 9.

Victimization Rates Across Clinical and Community Subsamples

	Lifetime				Past-Year			
	Total	Community	Clinical	²	Total	Community	Clinical	²
Multiple Victimization	86.9	85.9	91.7	0.88	65.7	63.3	77.8	2.79
Poly-Victimization	23.0	20.9	33.3	2.61	22.1	20.2	31.4	3.20 [†]
Any Conventional Crimes	73.7	70.6	88.9	5.15*	50.7	48.6	61.1	1.88**
Any physical assault	82.6	80.2	94.4	4.21*	63.8	61.6	75.0	2.33 [†]
Any property crimes	60.1	59.3	63.9	0.26	34.7	35.0	33.3	0.04
Any Witness/Indirect	43.7	43.5	44.4	0.01	22.1	21.3	25.7	0.32
Any Peer and/or Sibling	83.6	81.4	94.4	3.73*	69.0	66.1	83.3	4.15 [†]
Any Sexual	9.4	8.5	13.9	1.03	4.2	3.4	8.6	1.96 [†]
Any Maltreatment	27.7	25.4	38.9	2.71	9.4 [†]	8.4	14.3	1.18 [†]
Any Exposure to Family Violence	32.4	30.5	41.7	1.70	13.1	13.5	11.4	0.11
Any Internet	6.1	5.1	11.1	1.90	3.8	3.4	5.6	0.39

Note. ² = Chi-Square.

***p < .001; **p < .01; * p < .05; [†] p < .10

Table 10.

Overlap Across Lifetime Victimization Forms

	Percentage Matched						
	Any Maltreatment <i>n</i> = 59	Any Sexual <i>n</i> = 20	Any Peer and/or Sibling <i>n</i> = 178	Any Witness/ Indirect <i>n</i> = 93	Any Conventional <i>n</i> = 157	Any Exposure to Family Violence <i>n</i> = 69	Any Internet <i>n</i> = 13
Any Maltreatment	-	35.0	30.9	38.7	31.8	44.9	53.8
Any Sexual	11.9	-	10.7	14.0	11.5	14.5	23.1
Any Peer and/or Sibling	93.2	95.0	-	88.2	87.9	88.4	100
Any Witness/Indirect	61.0	65.0	46.1	-	52.9	63.8	46.2
Any Conventional	84.7	90.0	77.5	89.2	-	73.9	76.9
Any Exposure to Family Violence	52.5	50.0	34.3	47.4	32.5	-	30.8
Any Internet	11.9	15.0	7.3	6.5	6.4	5.8	-

Note. Table should be interpreted as such: values represent the number children with a given victimization form as indicated in the top row of the table that also experienced the forms identified on the left column of the table. For example, of the children with any maltreatment experiences, 11.9% also experienced sexual victimization. However, of the children with sexual victimization, 35% also have maltreatment.

Table 11.

Common Lifetime Victimization Profiles

Profile number	% of sample	Victimizations Forms						
		Any Peer and/or Sibling	Any Conventional	Any Maltreatment	Any Witness/ Indirect	Any Sexual Victimization	Any Internet Victimization	Any Exposure to Family Violence
1	15.5%	1	1	0	0	0	0	0
2	11.7%	1	1	0	1	0	0	0
3	9.9%	1	0	0	0	0	0	0
4	8.0%	1	1	1	1	0	0	1
5	5.2%	0	1	0	0	0	0	0
6	4.7%	1	1	1	1	0	0	0
7	4.2%	1	1	0	1	0	0	1
8	3.8%	1	1	0	0	0	0	1
9	3.3%	1	1	1	0	0	0	0
10	3.3%	0	0	0	0	0	0	0
11	2.8%	1	0	0	0	0	0	1
12	2.3%	0	1	0	1	0	0	0
13	1.9%	1	1	0	0	1	0	0
14	1.9%	1	1	0	1	1	0	1
15	1.9%	1	1	1	0	0	0	1

Table 12.

The Influence of Lifetime Victimization Exposure on Posttraumatic Stress and Anxiety Symptoms

Measure	Posttraumatic Stress				Anxiety			
	β	SE	R2	F change	β	SE	R2	F change
Lifetime Victimization Exposure (LV)	0.57***	0.09	0.25	-	0.26***	0.05	0.18	-
Conventional Victimization								
Model without LV	0.96***	0.20	0.17		0.47***	0.11	0.12	
Model with LV	-0.17	0.31	0.25	21.75***	-0.01	0.16	0.18	14.14***
Property Crimes								
Model without LV	1.09**	0.38	0.12		0.61***	0.20	0.08	
Model with LV	-0.57	0.44	0.26	37.98***	-0.09	0.23	0.18	24.39***
Physical Assaults								
Model without LV	1.16***	0.27	0.16	26.79***	0.52***	0.14	0.08	
Model with LV	-0.49	0.41	0.23		-0.26	0.22	0.16	21.52***
Witness/Indirect Victimization								
Model without LV	1.65***	0.33	0.18	19.43***	0.56***	0.17	0.09	
Model with LV	0.4	0.43	0.25		-0.10	0.21	0.18	23.47***
Sexual Victimization								
Model without LV	2.00*	0.92	0.10	40.80***	0.90†	0.46	0.04	
Model with LV	0.74	0.86	0.25		0.32	0.45	0.16	31.30***
Maltreatment								
Model without LV	2.20***	0.53	0.39		1.13***	0.27	0.12	
Model with LV	0.37	0.61	0.50	26.36***	0.35	0.32	0.19	17.48***
Peer and/or Sibling Victimization								
Model without LV	0.73*	0.32	0.11	46.03***	2.53**	0.16	0.08	27.02***
Model with LV	-0.89*	0.37	0.27		-0.20	0.20	0.18	
Exposure to Family Violence								
Model without LV	1.34***	0.69	0.16		0.61***	0.16	0.10	
Model with LV	0.25	0.37	0.25	25.86***	0.10	0.19	0.18	20.19***
Internet Victimization								
Model without LV	2.98*	1.31	0.11		1.40*	0.67	0.06	
Model with LV	2.00	1.20	0.26	42.68***	0.95	0.63	0.19	32.50***

Note. B = unstandardized beta; SE = standard errors; R2 = Variance accounted for by the model. Regression coefficients are from multiple regression models controlling for age, sex, ethnicity, income, and family structure.

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

Table 13.

The Influence of Victimization Exposure on Depression and Anger/Aggression Symptoms

Measure	Anger/Aggression				Depression			
	β	SE	R2	F change	β	SE	R2	F change
Lifetime Victimization Exposure (LV)	0.31***	0.05	0.21	-	0.20***	0.04	0.17	-
Conventional Victimization								
Model without LV	0.45***	0.12	0.11		0.28***	0.09	0.10	
Model with LV	-0.24	0.17	0.21	27.56***	-0.19	0.14	0.18	17.99***
Property Crimes								
Model without LV	0.57**	0.21	0.05		0.33*	0.17	0.08	
Model with LV	-0.35	0.25	0.19	37.99***	-.028	0.20	0.15	23.86***
Physical Assaults								
Model without LV	0.76***	0.15	0.12	15.90***	0.36***	0.12	0.08	
Model with LV	0.05	0.23	0.18		-0.28	0.19	0.15	19.14***
Witness/Indirect Victimization								
Model without LV	0.78***	0.19	0.11	24.21***	0.48***	0.15	0.11	
Model with LV	0.07	0.23	0.21		0.02	0.19	0.17	14.89***
Sexual Victimization								
Model without LV	1.25*	0.51	0.04		0.42	0.41	0.05	
Model with LV	0.57	0.48	0.19	38.56***	-0.03	0.40	0.15	24.77***
Maltreatment								
Model without LV	1.35	0.29	0.13		0.97***	0.23	0.14	
Model with LV	0.43	0.34	0.21	21.79***	0.47	0.28	0.18	10.17***
Peer and/or Sibling Victimization								
Model without LV	0.68***	0.17	0.08		0.35**	0.14	0.09	
Model with LV	-0.01	0.21	0.18	25.96***	-0.14	0.17	0.17	19.62***
Exposure to Family Violence								
Model without LV	0.63***	0.18	0.09		0.99***	0.23	0.14	
Model with LV	-.03	0.21	0.18	29.77***	0.47	0.28	0.19	5.81**
Internet Victimization								
Model without LV	1.06†	0.73	0.04		1.11†	0.58	0.08	
Model with LV	0.52	0.67	0.18	42.17***	0.78	0.55	0.18	24.01***

Note. B unstandardized beta; SE = standard errors; R2 = Variance accounted for by the model. Regression coefficients are from multiple regression models controlling for age, sex, ethnicity, income, and family structure.

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

Table 14.

Descriptive Statistics for Correlates

Child	Mean	SD	Range	%
Age	8.0	1.5		
Sex				
Boys				52.6
Girls				47.4
Physical condition/mental health diagnosis				
Yes				28.6
No				71.4
Family				
Caregiver Education ^a	2.4	0.6	1-3	
Low Income ^b				19.2
Caregiver age	38.8	6.3	23-58	
Marital Status				
Intact				78.9
Non-Intact (Stepfamily, Single)				21.1
Caregiver psychological symptoms ^c	10.3	7.9	0-56	
Substance Abuse Problem				
Yes				8.9
No				91.1
Caregiver Supervision ^d	3.6	1.2	3-12	
Positive Parenting	13.3	1.5	9-15	
Community				
Safety	13.5	1.9	4-16	
Cohesion	5.6	2.9	0-13	

Note. ^amedian parental education was 2.5, indicating 1 parent with University and 1 parent with College degree; ^b < 59,999 (before tax); ^cthe psychological symptoms score was transformed using a square root + K function; ^dscale dichotomized due to skew.

Table 15.

Correlates of Childhood Multiple Victimization

	B	SE	T
Child Variables			
Age	0.11†	0.19	1.59
Sex (boys)	0.13*	0.66	2.12
Ethnicity (minority)	-0.02	0.84	-0.31
Medical condition	0.06	0.73	0.87
Caregiver Variables			
Caregiver Education	0.06	0.56	0.95
Family Income	0.18*	1.01	2.39
Age of Caregiver	-0.17*	0.07	-2.17
Non Intact Family	0.11†	0.83	1.62
Caregiver Psychological Symptoms ^a	0.16*	0.70	2.32
Caregiver Substance Abuse Problem	0.14*	1.17	2.16
Positive Parenting	0.01	1.67	0.10
Caregiver Supervision ^b	0.04	3.40	0.61
Family Dysfunction	0.25***	0.95	3.37
Neighbourhood Variables			
Safety	0.10	0.18	1.50
Social Involvement/Cohesion	0.01	0.12	0.19

Note. B = Unstandardized beta; SE = Standard error; t = t-score

^aThe psychological symptoms score was transformed using a square root + K function. ^bScale dichotomized due to skew. *** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$.

Child variables were entered first, followed by family and then community variables.

Table 16.

Correlates Across the Seven Victimization Forms

	Conventional Crimes		Witness Indirect		Peer and/or Sibling		Maltreatment		Exposure to Family Violence		Sexual Victimization		Internet Victimization	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Child Variables														
Age	0.03	0.10	-0.02	0.09	0.05	0.11	0.21*	0.10	-0.01	0.10	-0.24	0.18	0.11	0.19
Sex (male)	0.30	0.35	0.32	0.30	0.14	0.40	0.45	0.38	0.82*	0.36	0.02	0.52	-0.53	0.63
Ethnic Minority	0.23	0.45	-0.01	0.39	-0.63	0.47	0.05	0.46	-0.52	0.46	0.62	0.60	-1.13	0.91
Medical Condition	0.75†	0.42	-0.07	0.34	0.12	0.45	1.00**	0.39	0.11	0.39	-0.48	0.64	0.79	0.71
Caregiver Variables														
Parental Education	0.16	0.31	0.26	0.26	0.14	0.34	0.20	0.32	-0.34	0.29	0.30	0.49	0.44	0.58
Low Family Income	0.02	0.57	-0.21	0.46	0.43	0.62	0.10*	0.52	0.48	0.50	-0.62	0.84	-0.31	1.14
Age	-0.11***	0.04	-0.03	0.03	-0.02	0.04	0.01	0.03	-0.06†	0.03	-0.04	0.06	-0.03	0.07
Non-Intact Family	-0.73	0.43	0.54	0.38	-0.32	0.48	0.51	0.43	1.02**	0.42	0.53	0.65	-0.38	0.86
Psychosocial Symptoms	-0.03	0.38	0.15	0.32	0.15	0.43	0.97**	0.39	0.56†	0.37	1.36**	0.54	0.87	0.70
Substance Abuse Problems	-0.71	0.57	0.13	0.53	0.76	0.83	0.78	0.57	1.04†	0.57	0.76	0.75	1.99**	0.79
Positive Parenting	-1.17	0.94	-0.51	0.76	-1.97†	1.10	-0.92	0.89	0.09	0.88	-1.59	1.31	-0.57	1.65
Parental Supervision	2.39	2.11	1.04	1.59	1.43	2.37	0.35	1.77	1.65	1.73	1.62	2.40	3.80	2.84
Family Dysfunction	0.61	0.51	1.15**	0.46	0.09	0.62	-0.22	0.52	1.47**	0.52	0.09	0.74	-0.46	0.84
Neighbourhood Variables														
Safety	0.02	0.10	-0.05	0.08	0.08	0.11	-0.27**	0.10	0.11	0.09	0.12	0.15	0.06	0.19
Social Cohesion	0.09	0.06	0.05	0.05	0.05	0.07	-0.02	0.07	0.04	0.06	0.14	0.09	-0.07	0.12
Model Summary														
χ^2	27.94*		20.45		10.4		51.09***		51.03***		19.36		14.02	
O/P	76.1%		63.8%		83.6%		77.0%		73.2%		90.1%		94.4%	
R^2	0.18		0.12		0.08		0.31		0.30		0.19		0.17	

Note. B = Beta coefficients; SE = Standard Errors; χ^2 = Chi-Square; O/P = Observed/predicted percentage match or model fit; R^2 = Percentage of variance accounted for by the model.
 *** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$.

Table 17.

Percentage of Sample with Lifetime Victimization Compared to NATSCEV Rates

	Current Sample Rates (6-12 yrs)	NATSCEV Sample Rates (6-13 yrs)
Any Sexual Victimization	9.4	7.2
Any Physical Assaults	82.6	62.4
Any Maltreatment	27.7	18.9
Any Property Victimization	39.9	41.5
Any Witness Victimization ^a	31.9	36.2
Any Indirect Victimization ^b	12.7	19.4

Note. ^aThis scale includes items from the Exposure to Family Violence scale and excludes certain items from the Witness/Indirect scale to make it comparable to Finkelhor et al. (2009c). ^bThis scale excludes household theft and school threat of bomb or attack to make it comparable to Finkelhor et al. (2009c). As Finkelhor et al. (2009c) separated victimization rates by 6-9 yrs and 10-13 yrs (N = 1824) the following equation was used to calculate the mean percentage based on unequal sample size: $(K_a + K_b)/N_{\text{of totalsample}}$ Where K is the number of participants with the victimization. Statistical significance of the differences among rates of victimization was calculated by way of a series of two-sample difference of proportion tests. In addition, bolded frequencies are significant at a .01 level.

Table 18.

Percentage of Sample with Past-Year Victimization Compared to NATSCEV Rates

	Current Sample Rates (6-12 yrs)	NATSCEV Sample Rates (6-13 yrs)
Any Sexual Victimization	4.2	4.8
Any Physical Assaults	63.8	52.7
Any Maltreatment	9.4	9.9
Any Property Victimization	34.7	27.5
Any Witness Victimization ^a	27.2	23.5
Any Indirect Victimization ^b	17.4	7.9

Note. ^aThis scale includes items from the Exposure to Family Violence scale and excludes certain items from the Witness/Indirect scale to make it comparable to Finkelhor et al. (2009c). ^bThis scale excludes household theft and school threat of bomb or attack to make it comparable to Finkelhor et al. (2009c). As Finkelhor et al. (2009c) separated victimization rates by 6-9 yrs and 10-13 yrs (N = 1824) the following equation was used to calculate the mean percentage based on unequal sample size: $(K_a + K_b)/N_{\text{of totalsample}}$ Where K is the number of participants with the victimization. Statistical significance of the differences among rates of victimization was calculated by way of a series of two-sample difference of proportion tests. In addition, bolded frequencies are significant at a .01 level.

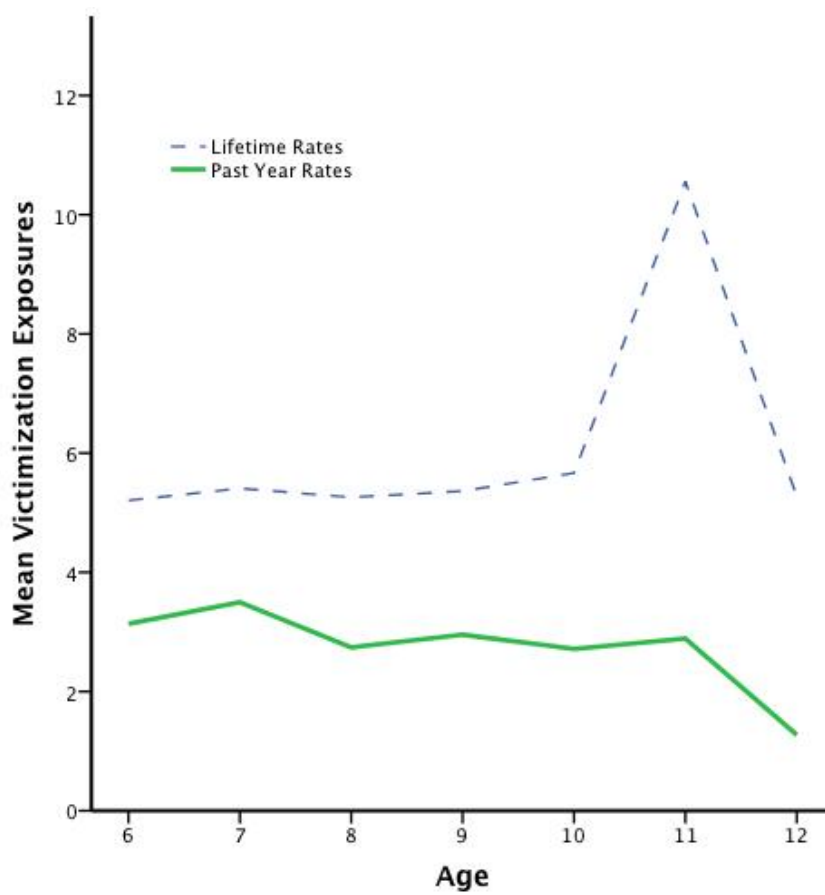
Figure 1: Past-Year and Lifetime Victimization Across Age Groups

Figure 1. Mean victimization exposure across age groups. Sample sizes of $n = 58$, $n = 54$, $n = 27$, $n = 22$, $n = 21$, $n = 9$, and $n = 22$, for 6 to 12 years olds, respectively.

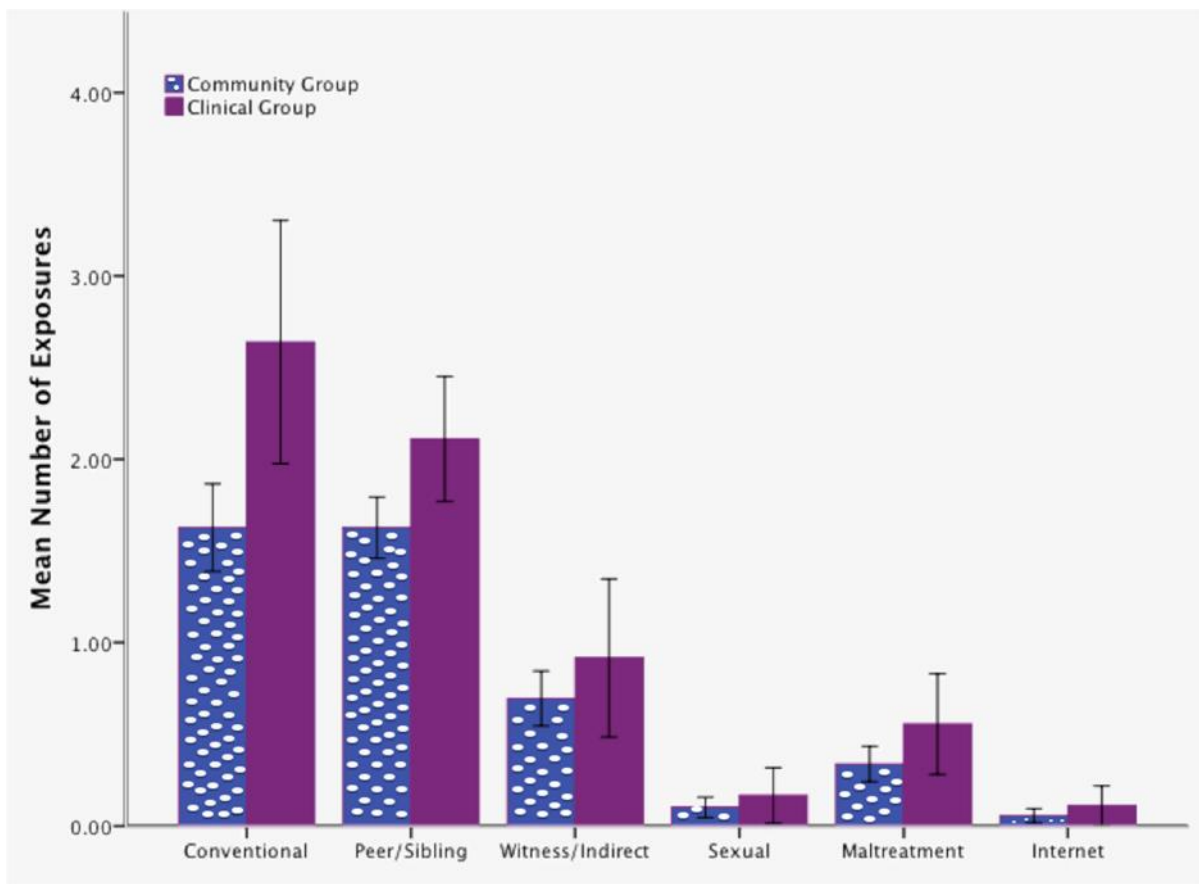
Figure 2: Lifetime Exposure Across Clinical and Community Samples

Figure 2. Lifetime Exposure Across Clinical and Community Samples. Bars represent mean number of victimization types. Error bars represent standard errors.

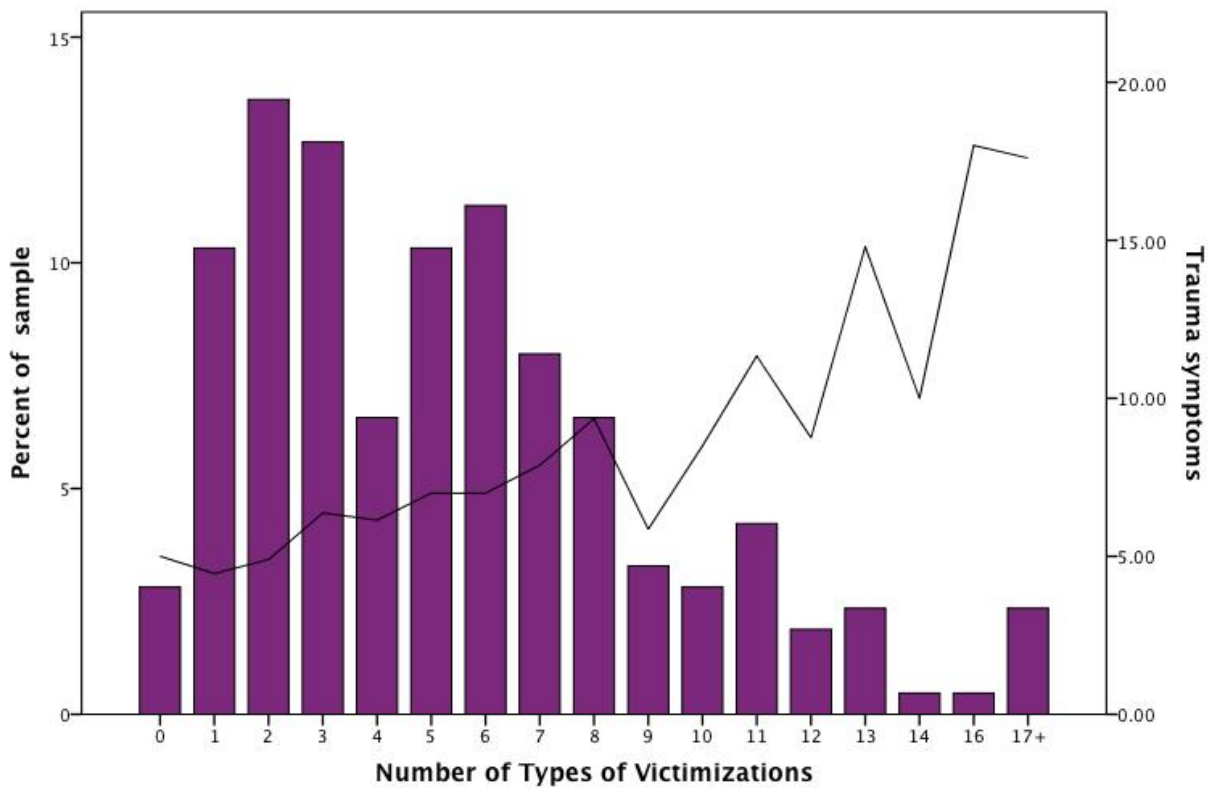
Figure 3: Association Between Victimization and Trauma

Figure 3. Lifetime Victimization Exposure and Trauma-Related Symptoms. Bars represent lifetime victimization exposure and the solid black line is mean symptom score.

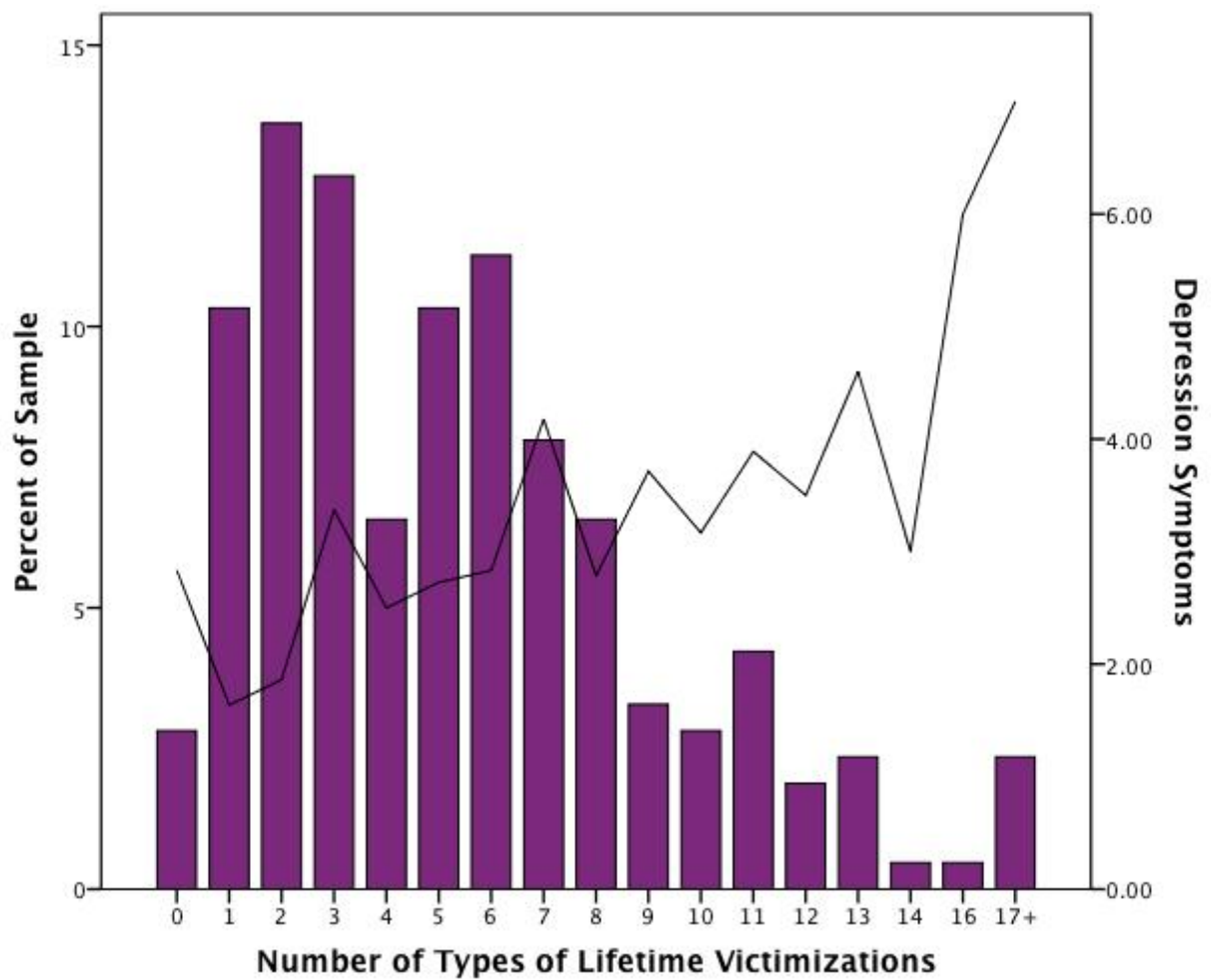
Figure 4: Association Between Victimization and Depression

Figure 4. Lifetime Victimization Exposure and Depressive Symptoms. Bars represent lifetime victimization exposure and the solid black line is mean symptom score.

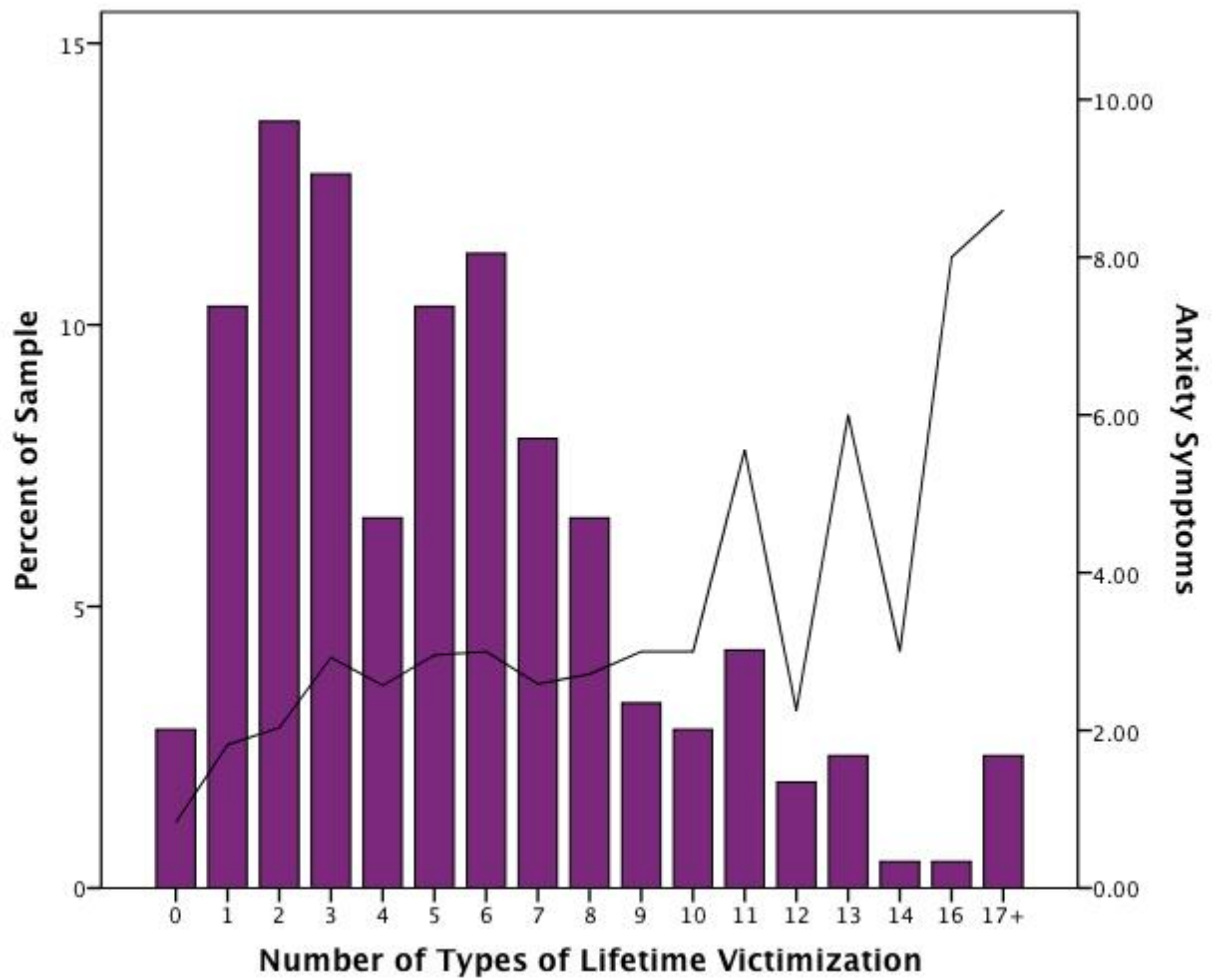
Figure 5: Association Between Victimization and Anxiety

Figure 5. Lifetime Victimization Exposure and Anxiety Symptoms. Bars represent lifetime victimization exposure and the solid black line is mean symptom score.

Figure 6: Association Between Victimization and Anger/Aggression

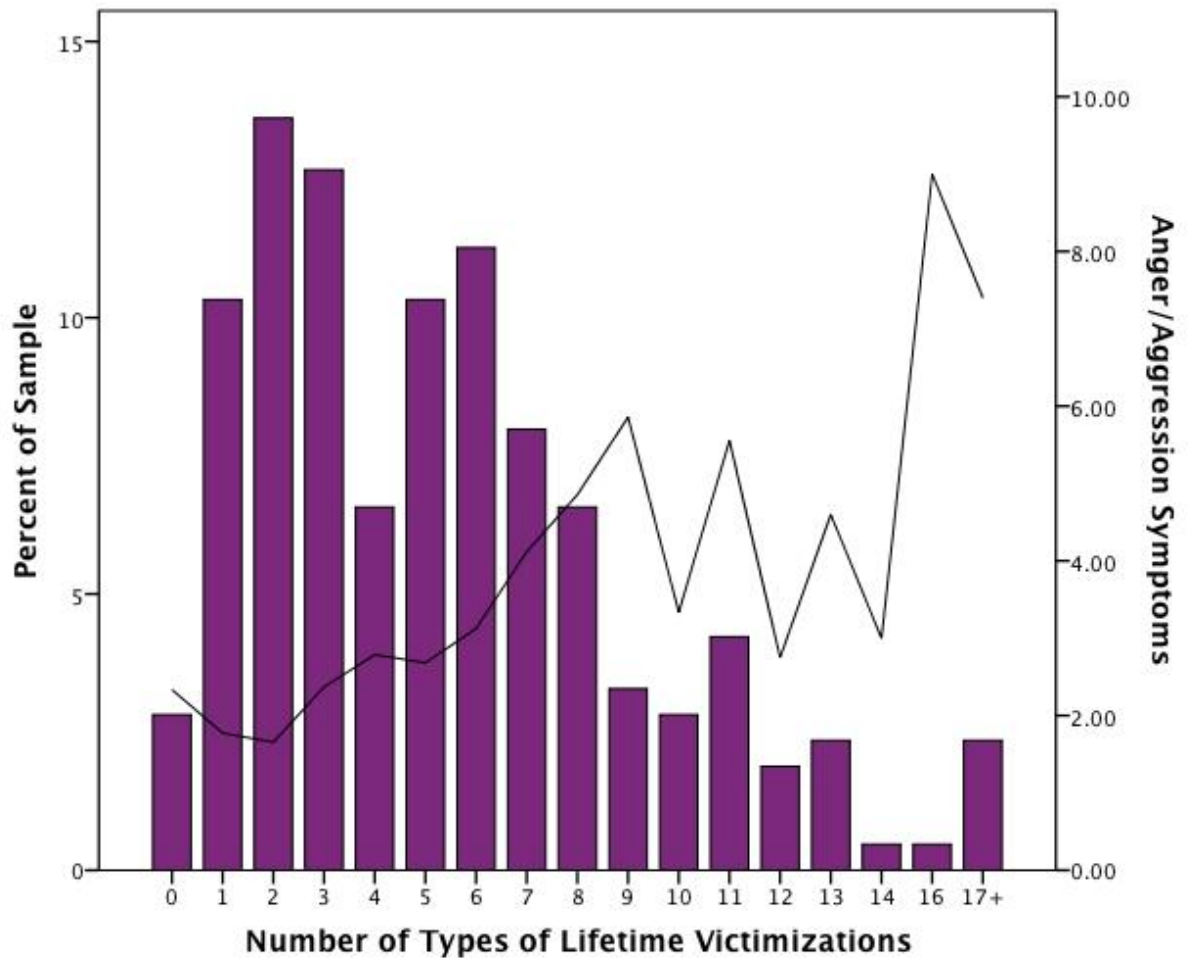


Figure 6. Lifetime Victimization Exposure and Anger/Aggression Symptoms. Bars represent lifetime victimization exposure and the solid black line is mean symptom score.

Appendix A
Description of National Surveys

Survey	Sample	Methods	Victimization types assessed	Other factors assessed	Link for more information
<i>General Social Survey of Victimization (GSS; Perreault, Savué, & Burns, 2009)</i>	N = 25,906 Non-institutionalized individuals 15 years and older	<i>Reporter:</i> Self-report <i>Design:</i> <ul style="list-style-type: none"> ○ Cross-sectional ○ Computer-assisted telephone design ○ Nation-wide ○ Quinquennial (every 5-years) 	Violent crimes <ul style="list-style-type: none"> ○ Conventional crimes ○ Sexual victimization ○ Physical assaults 	<ul style="list-style-type: none"> ○ Socio-demographic factors (e.g., ethnicity, marital status) ○ Neighbourhood factors (e.g., safety) ○ Percentage of victimizations reported to police ○ Perceptions of the criminal justice system (e.g., police, parole) 	http://dsp-psd.pwgsc.gc.ca/Collection/Statcan/85-565-X/85-565-XIE2005001.pdf
<i>Incident-Based Uniform Crime Reporting (UCR-2; Canadian Centre for Justice Statistics, 2008)</i>	99% of all crime volume in Canada (over 2 million incidents) 1,200 police detachments	<i>Reporter:</i> <ul style="list-style-type: none"> ○ Police services <i>Design:</i> <ul style="list-style-type: none"> ○ Cross-sectional ○ Canada-wide ○ Incidence-based reporting ○ Written or computer forms ○ Yearly 	100% of all reported crimes	<ul style="list-style-type: none"> ○ Socio-demographic factors of victims (e.g., ethnicity, age, sex) ○ Relation of offender to victim 	http://www.statcan.gc.ca/pub/85-224-x/85-224-x2008000-eng.htm
<i>The Canadian Incidence Study of Reported Child Abuse and Neglect – 2008 (CIS, Trocmé et al., 2010)</i>	N = 15,980 Children between the ages of 0 and 15.	<i>Reporter:</i> The survey was completed by child welfare workers in 90 child welfare agencies across Canada (with the exception of Québec in 2008). <i>Design:</i> <ul style="list-style-type: none"> ○ Cross-sectional ○ Internet Survey ○ Nation-wide (with the exception of Québec in 2008) ○ Quinquennial. 	Maltreatment <ul style="list-style-type: none"> ○ Physical abuse ○ Sexual abuse ○ Neglect ○ Emotional abuse ○ Exposure to intimate partner violence. 	<ul style="list-style-type: none"> ○ Risk factors (e.g., socio-demographic, caregiver substance abuse, caregiver mental/physical health) ○ Child functioning variables (e.g., aggression, attachment issues, depression/anxiety). 	http://www.phac-aspc.gc.ca/cm-vee/public-eng.php

Appendix B

Juvenile Victimization Questionnaire – Caregiver Report, Revised (JVQ-CR-R1)

Response category:

- Yes, in his/her lifetime
- No, not in his/her lifetime
- Yes, in the past year
- No, not in the past year

Items:**Conventional Crime**

1. At any time in your child's life (in the past year), did anyone use force to take something away from your child that he/she was carrying or wearing?
2. At any time in your child's life (in the past year), did anyone steal something from your child and never give it back? Things like a backpack, money, watch, clothing, bike, stereo, or anything else?
3. At any time in your child's life (in the past year), did anyone break or ruin any of your child things on purpose?
4. Sometimes people are attacked with sticks, rocks, guns, knives, or other things that would hurt. At any time in your child's life (in the past year), did anyone hit or attack your child on purpose with an object or weapon? Somewhere like: at home, at school, at a store, in a car, on the street, or anywhere else?
5. At any time in your child's life (in the past year), did anyone hit or attack your child WITHOUT using an object or weapon?

6. At any time in your child's life (in the past year), did someone start to attack your child, but for some reason, it didn't happen? For example, someone helped your child or your child got away?
7. When a person is kidnapped, it means they were made to go somewhere, like into a car, by someone who they thought might hurt them. At any time in your child's life (in the past year), has anyone ever tried to kidnap your child?
8. At any time in your child's life (in the past year), has your child been hit or attacked because of your child's skin color, religion, or where your child's family comes from? Because of a physical problem your child has? Or because someone said your child was gay?

Child Maltreatment

1. Not including spanking on him/her bottom, at any time in your child's life (in the past year), did a grown-up in your child's life hit, beat, kick, or physically hurt your child in any way?
2. At any time in your child's life (in the past year), did your child get scared or feel really bad because grown-ups in your child's life called him/her names, said mean things to him/her, or said they didn't want him/her?
3. When someone is neglected, it means that the grown-ups in their life didn't take care of them the way they should. They might not get them enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. At any time in your child's life (in the past year), was your child neglected?
4. Sometimes a family fights over where a child should live. At any time in your child's life (in the past year) did a parent take, keep, or hide your child to stop him/her from being with another parent?

Peer and Sibling Victimization

1. Sometimes groups of kids or gangs attack people. At any time in your child's life (in the past year), did a group of kids or a gang hit, jump, or attack your child?
2. At any time in your child's life (in the past year), did any kid, even a brother or sister, hit your child? Somewhere like: at home, at school, out playing, in a store, or anywhere else?
3. At any time in your child's life (in the past year), did any kids try to hurt your child's private parts on purpose by hitting or kicking your child there?
4. At any time in your child's life (in the past year), did any kids, even a brother or sister, pick on your child by chasing your child's or grabbing your child's or by making him/her do something he/she didn't want to do?
5. At any time in your child's life (in the past year), did your child get really scared or feel really bad because kids were calling him/her names, saying mean things to him/her, or saying they didn't want him/her around?

Sexual Victimization

1. At any time in your child's life (in the past year), did a grown-up your child knows touch your child's private parts when they shouldn't have or make your child touch their private parts? Or did a grown-up your child knows force your child to have sex?
2. At any time in your child's life (in the past year), did a grown-up your child did not know touch your child's private parts when they shouldn't have, make your child touch their private parts or force your child to have sex?
3. Now think about other kids, like from school, a boyfriend or girlfriend, or even a brother or sister. At any time in your child's life (in the past year), did another child or teen make your child do sexual things?

4. At any time in your child's life (in the past year), did anyone TRY to force your child to have sex, that is sexual intercourse of any kind, even if it didn't happen?
5. At any time in your child's life (in the past year), did anyone make your child look at their private parts by using force or surprise, or by "flashing" your child?
6. At any time in your child's life (in the past year), did anyone hurt your child feelings by saying or writing something sexual about your child or your child body?
7. At any time in your life, did your child do sexual things with anyone 18 or older, even things he/she wanted?

Witnessing and Indirect Victimizations

1. At any time in your child's life (in the past year), did your child SEE a parent get pushed, slapped, hit, punched, or beat up by another parent, or their boyfriend or girlfriend?
2. At any time in your child's life (in the past year), did your child SEE a parent hit, beat, kick, or physically hurt his/her brothers or sisters, not including a spanking on the bottom?
3. At any time in your child's life (in the past year), in real life, did your child SEE anyone get attacked or hit on purpose WITH a stick, rock, gun, knife, or other thing that would hurt? Somewhere like: at home, at school, at a store, in a car, on the street, or anywhere else?
4. At any time in your child's life (in the past year), in real life, did your child SEE anyone get attacked or hit on purpose WITHOUT using a stick, rock, gun, knife, or something that would hurt?
5. At any time in your child's life (in the past year), did anyone steal something from your house that belongs to your child's family or someone your child live with? Things like a TV, stereo, car, or anything else?
6. At any time in your child's life (in the past year), was anyone close to your child murdered, like a friend, neighbor, or someone in your child's family?

7. At any time in your child's life (in the past year), did your child see someone murdered in real life? This means not on TV, in video games, or in the movies?
8. At any time in your child's life (in the past year), was your child in any place in real life where he/she could see or hear people being shot, bombs going off, or street riots?
9. At any time in your child's life (in the past year), was your child in the middle of a war where he/she could hear real fighting with guns or bombs?

Exposure to Family Violence (Additional Items)

1. At any time in your child's life (in the past year), did one of your child's parents threaten to hurt another parent and it seemed he or she might really get hurt?
2. At any time in your child's life (in the past year), did one of your child's parents, because of an argument, break or ruin anything belonging to another parent, punch the wall, or throw something?
3. At any time in your child's life (in the past year), did one of your child's parents get pushed by another parent?
4. At any time in your child's life (in the past year), did one of your child's parents get hit or slapped by another parent?
5. At any time in your child's life (in the past year), did one of your child's parents get kicked, choked or beat up by another parent?
6. Now we want to ask you about fights between any grown-ups and teens, not just between your child's parents. At any time in your child's life (in the past year), did any grown-up or teen who lives with your child push, hit, or beat up someone else who lives with your child, like a parent, brother, grandparent, or other relative?

Internet Victimization

1. At any time in your child's life (in the past year used), has anyone ever the Internet to bother or harass your child or to spread mean words or pictures about your child?
2. At any time in your child's life (in the past year used), has anyone asked sexual questions about Himself/Herself/Your child, or try to get your child to talk online about sex when your child did not want to talk about those things?

Appendix C

Socio-demographic questionnaire

Child

1. What is the age of this child?
 - a. 6
 - b. 7
 - c. 8
 - d. 9
 - e. 10
 - f. 11
 - g. 12

2. What is the sex of this child?
 - a. Male
 - b. Female

3. What is the ethnicity of this child?
 - a. Caucasian
 - b. African-Canadian
 - c. Asian
 - d. Middle Eastern
 - e. First Nation
 - f. Other

4. Has your child been diagnosed by a health professional with a medical condition or a mental health disorder? If yes, please describe.

5. Is this child currently receiving mental health services (e.g., psychologist, counsellor, therapist)?
Yes___ No___

6. Is this child currently on a waitlist to receive mental health services?

Yes___ No___

7. How many siblings does this child have any siblings?

a. Age ____ Gender ____

b. Age ____ Gender ____

c. Age ____ Gender ____

d. Age ____ Gender ____

Participant

8. What is your relationship to this child?

a. Biological parent

b. Adoptive parent

c. Step-parent

d. Grandparent

e. Foster parent

f. Other. Please clarify:_____

9. What is your marital status?

a. Married

b. Common-law

c. Living with a partner

d. Single

e. Divorced

f. Separated

10. If you are divorced or separated, please specify your custody arrangement:

a. Full custody

b. Shared custody: with living arrangements on an equal time basis

c. Shared custody: with living arrangements on with most time with mother

- d. Shared custody: with living arrangements on with most time with father
- e. Other: please clarify _____

11. What is your year of birth (e.g., 1980)?

12. What is your sex?

Male _____ Female _____

13. What is your highest level of education?

- a. High school
- b. College or trade degree
- c. Bachelor or undergraduate degree
- d. Master's degree
- e. Doctoral degree
- f. Degree in medicine, dentistry, veterinary medicine, or optometry
- g. Other. Please clarify: _____

14. What is the highest level of education of your partner (Child's mother or father)?

- a. High school
- b. College or trade degree
- c. Bachelor or undergraduate degree
- d. Master's degree
- e. Doctoral degree
- f. Degree in medicine, dentistry, veterinary medicine, or optometry
- g. Other. Please clarify: _____

15. What is your annual income (*before tax*)?

- a. Less than 19,999
- b. 20,000-29,999
- c. 30,000-39,999
- d. 40,000-49,999

- e. 50,000-59,999
- f. 60,000-69,999
- g. 70,000-79,999
- h. 80,000-89,999
- i. 90,000-99,999
- j. 100,000-109,999
- k. 110,000-119,999
- l. 120,000-129,999
- m. 130,000-139,999
- n. 140,000-149,999
- o. over 150,000

Appendix D
Non-victimization Adversity

The following questions are about life events that your child may have experienced in his lifetime.

- | | |
|--|-----------|
| 1. In your child's whole life, was your child ever in a VERY BAD fire, explosion, flood, tornado, hurricane, earthquake or other disaster? | YES or NO |
| 2. Was your child ever in a VERY BAD accident (at home, school, or in a car) where your child had to be in the hospital for many days? This would be a time that your child was very hurt and needed to spend a long time in the hospital. Has that ever happened? | YES or NO |
| 3. Did your child ever have a VERY BAD illness where your child had to be in the hospital for many days? This could be a time when your child was so sick that your child had to be in the hospital a lot? Has that ever happened? YES or NO | YES or NO |
| 4. Has someone your child was really close to ever had a VERY BAD accident where he or she had to be in the hospital for many days? This would be someone important to your child like a parent, brother or sister, or best friend. | YES or NO |
| 5. Has someone your child was really close to ever had a VERY BAD illness where he or she had to be in the hospital a lot? Again, this would be someone important to your child like a parent, brother or sister, or best friend. | YES or NO |
| 6. Was there ever a time in your child's life when your child's family had to live on the street or in a shelter because they had no other place to stay? | YES or NO |
| 7. Did your child ever have to do a school year over again? | YES or NO |
| 8. Have there ever been any times when your child's mother, father, or guardian lost a job or couldn't find work? | YES or NO |
| 9. Was your child ever sent away or taken away from your child family for any reason? | YES or NO |
| 10. At any time in your child's life did either of your child's parents, a stepparent, or guardian ever have to go to prison? | YES or NO |
| 11. Has your child ever seen a dead body in someone's house, on the street, or somewhere in your neighborhood (other than at a funeral)? | YES or NO |
| 12. Has there ever been a time that your child's family member drank or used drugs so often that it caused problems? | YES or NO |
| 13. Has there ever been a time when your child's parents or stepparents were ALWAYS arguing, yelling, and angry at one another a lot of the time? | YES or NO |
| 14. Was there ever a time when your child was always being teased about how your child looked, because of something like a physical disability, a weight problem, having a problem with pimples, or needing to wear glasses? | YES or NO |
| 15. Has anyone really close to him/her ever died? | YES or NO |

Appendix E

Alabama Parenting Questionnaire - Short Form (APQ-9)

The following are a number of statements about your family. Please rate each item as to how often it typically occurs in your home. Possible answers are: Never (1), Almost Never (2), Sometimes (3), Often (4), Always (5). Please answer all items.

	Never	Almost Never	Sometimes	Often	Always
1. You let your child know when he/she is doing a good job with something					
2. You threaten to punish your child and then do not actually punish him/her					
3. Your child fails to leave a note or to let you where he/she is going					
4. Your child talks you out of being punished after he/she has done something wrong					
5. Your child stays out in the evening after the time he/she is supposed to be home					
6. You compliment your child after he/she has done something well					
7. You praise your child if he/she behaves well					
8. Your child is out with friends you don't know					
9. You let your child out of a punishment early (like lift restrictions earlier than you originally said)					

Appendix F

McMaster Family Assessment Device

Instructions

This assessment contains a number of statements about families. Read each statement carefully, and decide how well it describes your own family. You should answer according to how you see your family.

For each statement are four (4) possible responses:

Strongly agree (SA) Check SA if you feel that the statement describes your family very accurately.

Agree (A) Check A if you feel that the statement describes your family for the most part.

Disagree (D) Check D if you feel that the statement **does not** describe your family for the most part.

Strongly disagree (SD) Check SD if you feel that the statement **does not** describe your family at all.

For each statement, there is an answer space below. Try not to spend too much time thinking about each statement, but respond as quickly and as honestly as you can. If you have difficulty, answer with your first reaction. Please be sure to answer *every* statement and mark all your answers in the space provided *below* each statement.

1. Planning family activities is difficult because we misunderstand each other.

___ SA ___ A ___ D ___ SD _____

2. In times of crisis we can turn to each other for support.

___ SA ___ A ___ D ___ SD _____

3. We cannot talk to each other about the sadness we feel.

___ SA ___ A ___ D ___ SD _____

4. Individuals are accepted for what they are.

___ SA ___ A ___ D ___ SD _____

5. We avoid discussing our fears and concerns.

___ SA ___ A ___ D ___ SD _____

6. We can express feelings to each other.

___ SA ___ A ___ D ___ SD _____

7. There are lots of bad feelings in the family.

___SA ___A ___D ___SD _____

8. We feel accepted for what we are.

___SA ___A ___D ___SD _____

9. Making decisions is a problem for our family.

___SA ___A ___D ___SD _____

10. We are able to make decisions about how to solve problems.

___SA ___A ___D ___SD _____

11. We don't get along well together.

___SA ___A ___D ___SD _____

12. We confide in each other.

___SA ___A ___D ___SD _____

Appendix G
Neighbourhood Questionnaire

Neighbourhood safety

1. In general, how do you feel about this neighbourhood? Do you feel it's a very bad, a fairly bad, a fairly good, or a very good place to live?

- very bad
- fairly bad
- fairly good
- very good

2. How satisfied are you with the police protection around here? Would you say you are very dissatisfied, somewhat dissatisfied, somewhat satisfied, or very satisfied?

- very dissatisfied
- somewhat dissatisfied
- somewhat satisfied
- satisfied

3. How often are there problems with muggings, burglaries, assaults, or anything else like that around here? Would you say these things never happen, hardly ever happen, happen not too often, happen fairly often, or happen very often?

- never
- hardly ever
- not too often
- fairly often
- very often

4. How much of a problem is the selling and using of drugs around here? Would you say it is not serious at all, is not too serious, is fairly serious, or is a very serious problem?

- not a serious problem or don't know

- not too serious
- fairly serious
- very serious

5. How well do the police and the people in this neighborhood get along? Would you say it's not well at all, not so well, fairly well, or very well?

- not well at all
- not so well
- fairly well
- very well

Neighbourhood Cohesiveness/Social Involvement

1. Which of these statements best describes this neighborhood?

- Most people keep to themselves and don't talk or visit much with the other people who live here
- Some people keep to themselves, but others talk or visit a lot with the other people who live here
- Most people talk or visit a lot with the other people who live here

2. How many of your neighbours do you know well enough to visit or call on? Would you say you have none, a few, some, or many that you know well enough to visit or call on?

- none or I have no neighbours
- a few
- some
- many

3. How often do you get together with any of your neighbours—either visiting at each other's homes or going places together? Would you say it's never, a few times a year, at least once a month, a few times a month, at least once a week, or nearly every day?


- never
- a few times per year

- at least once a month
- a few times a month (2 to 3 times)
- at least once a week (1 to 2 times)
- nearly every day (4 or more times a week)

4. How involved are you in your neighbourhood?

- not at all
- a little bit
- somewhat
- very involved

Appendix H
Study Notice



uOttawa
L'Université canadienne
Canada's university

An Examination of Recent Experiences in the Lives of Young Children

Do you have a child aged 6-12 (biological or non-biological) ?

Are you willing to participate in an online study ?

If you answer "yes" to both questions, then the researchers at the University of Ottawa need your help!

What is the study about?

- To better understand the range of experiences that children could potentially have had over the past year, some of which may have been difficult
- To better understand some of the factors that might be related to these experiences

Why participate?

- To help us better understand children's experiences of various events (some of which could be difficult) so that we may find ways to help children.

What do I have to do?

- Anonymously answer a series of questions that will take approximately 30 minutes to complete
- Have an option to anonymously answer some additional questions for approximately 15 minutes
- The study is available on-line and can be completed from any computer, in the convenience of your home or office
- You will have the chance to enter in one of five draws to win a \$50 Visa gift card. If you decide to complete the second section of the study, you will have an additional chance to enter the draw

Interested?

- Log on to: <http://app.fluidsurveys.com/s/childrenswellbeingstudy/>

Questions?

- Contact us at the **Children's Well-Being Lab** at the University of Ottawa [REDACTED],
e [REDACTED]

Appendix I
Consent form

Principal Investigators:

Lyzon Babchishin, B.A

Elisa Romano, Ph.D.

The Children's Well-Being Lab

School of Psychology

University of Ottawa

Phone: 613-562-5800 (2265)

E-mail: [REDACTED]

Task to be completed:

This study is being conducted under the supervision of Dr. Elisa Romano from the School of Psychology. The goal of this study is to understand a range of experiences, some of which may have been difficult, that school-aged children may have had over the past year. We are also interested in better understanding some of the factors that might be related to having experienced these events as well as some of the effects. Should you decide to participate, you will be invited to complete the study which will take approximately 30 minutes. The questionnaires are available on-line and can be completed from any computer in a quiet place. At the end of the study, you will be provided with an opportunity to complete additional questionnaires. This second section will take approximately 15 minutes. However, this part is completely voluntary.

Anonymity and confidentiality:

Be assured that no identifiable information will be gathered, including IP addresses. Your answers are strictly confidential and no one will be informed of your answers. Only the research team will have access to the data. The fluidsurveys website is encrypted and utilizes fire-walls to protect data. On a weekly basis, the researchers will download and erase the data from the protected fluidsurveys server. Data will be kept for 10 years on a password-protected computer in the principal investigator's laboratory. Data from the study will be analyzed and presented at a group level so that there will not be presentation of individual results.

Rights and responsibilities:

The study can be completed in a quiet place at a time that is convenient for you. We would really appreciate your honesty in responding to the questions. You are free to refuse to participate or to withdraw from the study at any time without penalty. You will be given a password at the end of the questionnaire, or, if you do not

complete the entire study, when you select the “exit study” option and will be invited to be entered for a draw for one of four \$50 visa gift cards. If you choose to enter your name for a draw, you will be forwarded to a different window and will be required to enter your contact information and password. Please note that your e-mail cannot be linked to the answers you have provided during the study.

Potential inconveniences and resources:

Some of the questions are sensitive in nature in that they ask about difficult experiences that may have happened to your child, such as experiencing maltreatment, bullying, sexual abuse, or a crime. These experiences may or may not apply to you or your child. It is possible, however, that you may experience some emotional distress. Questions about your well-being or that of your child may also cause some discomfort. In the on-line study, you will find a list of resources, such as telephone distress lines and counselling centres, which are available to you. Please do not hesitate to contact these resources.

Compensation:

To thank you for your contribution to the research project, you will be given the option to enter your name in a draw to win one of four Visa gift card valued at \$50 (Cdn). If you decide to complete the second part of the study, you will have another chance to enter the draw to win the Visa gift card. The draw is open to all research participants who enter their name in the draw, regardless of whether they decide to withdraw from further participating in the research project.

Upon completion of the study, a name will be randomly selected among those who have entered and the person whose name is drawn will be informed by e-mail. To win the prize, the person must correctly answer a skill testing question. If the person cannot be reached within 14 days from the date of the draw, the prize will be awarded to the second name that is randomly selected and so on until the prize has been awarded. The odds of winning a prize will depend on the number of eligible entries received. The prize must be accepted as awarded or forfeited, and it cannot be redeemed for cash.

The e-mail that you provide when you enter the draw is collected for the purpose of contacting you if your entry in the draw is selected. The contact information (i.e., e-mail) you provide will be kept confidential and then destroyed once the prizes have been awarded. The draw is governed by the applicable laws of Canada.

Data storage and use:

Data from this study will be used for research purposes only in that they will be presented at psychology conferences and published in scientific journals. Your data will be stored electronically on a password-protected computer in the principal investigator’s laboratory. Results from this study will be analyzed and

disseminated in group form meaning that no individual results will be presented. Data from this study will be kept for 10 years, after which point they will be deleted. Only the research team will have access to the data.

Additional information:

Should you have any questions or require additional information, please contact the Protocol Officer for Ethics in Research, Research Grants and Ethics Services, University of Ottawa, Cabaret Hall, 550 Cumberland Street Room 154, Ottawa, ON, K1N 6N5; Tel.: (613) 562-5387; E-mail : ethics@uottawa.ca

Any questions about the current study may be addressed to Lyzon Babchishin.

Informed consent:

If you understand all the statements above and freely consent to participate in the study, click on the button below which will direct you to the study. If you understand all the statements above and do not want to participate in the study, close this web page. If you have any questions before deciding whether or not you would like to participate, please contact Ms. Lyzon Babchishin at The Children's Well-Being Lab at [REDACTED] or [REDACTED]

If you wish to participate, we advise you to print a copy of this consent form for your record.

Do you wish to participate?

- No
- Yes

Appendix J

List of psychological resources

LIST OF RESOURCES

If you are experiencing emotional distress as a result of having participated in the study or think you or your child would benefit from any resources, please feel free to contact any of the following resources.

(Please consult the website www.ementalhealth.ca for numerous additional resources)

Telephone Crisis Lines

Eastern Ottawa Resource Centre

Phone: 613-741-6025

Kids Help Phone

Phone: 1-800-668-6868

Ottawa Distress Centre

Phone: 613-238-3311 or 613-722-6914

Mental Health Crisis Line

Phone: 613-722-6914 or 1-866-996-0991

Tel-Aide Outaouais

613-741-6433

Centre d'Aide 24-7

819-595-9999

Ottawa Children's Aid Society

(613) 747-7800

Counselling Agencies

Centre for Treatment of Sexual Abuse and Childhood Trauma

613-562-5289

University of Ottawa Career and Counselling Services

613-562-5200

St. Paul's University Counselling Centre

613-782-3022

Ottawa Christian Counselling

Phone: 613-729-8454

Ottawa Pastoral Counselling Centre
Phone: 613-235-2516

Hospitals Providing Mental Health Services

Civic Campus, Ottawa Hospital
Phone: 613-722-7000

General Campus, L'Hôpital Ottawa
Phone: 613-722-7000

Royal Ottawa Hospital
Phone: 613-722-6521

Hôpital Montfort
Phone: 613-746-4621

Queensway Carleton
Phone: 613-721-4700

Agencies Providing Mental Health Services

Crossroads Children's Centre
Phone: 613-723-1623

Crossroads Children's Centre
Phone: 613-723-1623

Centre for Psychological Services
Phone: 613:562-5289

Family Services Ottawa
Phone: 613-725-3601

If you have any questions about the study you completed, please contact:

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Appendix K
Power analysis

Analysis	Power	
	Small Effect size	Moderate Effect size
Correlation	.91	.99
Independent sample t-test	.50	.86
Chi-Square	.80	.99
Anova	.74	.91
Binary linear regressions	.99	.95
Multiple linear regressions	.91	.99

Note. When sample sizes fluctuated within a particular analysis, the smallest sample size was used to determine power. As such, these estimates may be viewed as a conservative estimate of power. Please note that, for chi-square analyses, the further away you move from a 50/50 split (as in the case of low or high base rates events), the less statistical power you have.

Appendix L

Cluster Analysis

Cluster Analysis

A two-step exploratory cluster analysis was conducted to examine whether the participants could be grouped into general clusters, based on their continuous scores on the same 7 victimization forms used to calculate the participant-centered combination clusters as well as the categorical lifetime poly-victim and multiple-victim variables. The goal of the cluster analysis was to examine the main co-occurrences of victimization forms in the data. Prior to running the cluster analysis, the data were randomized and the variables used were standardized. It should be noted that the first step of the two-step cluster analysis identifies pre-clusters following the sequential clustering method by Theodoridis and Koutroumbas (1999), and the second-step of the analysis uses the standard agglomerative hierarchical clustering algorithm to classify pre-clusters identified in step one into the final cluster solution (Norusis, 2011; Mooi, & Sarstedt, 2011). The log-likelihood distance measure was used as variables entered in the model were mixed (i.e., categorical and continuous). In addition, as suggested by Mooi & Sarstedt, separate analyses were run using the Schwarz Bayesian Criterion and the Aikaike Information Criterion to evaluate the robustness of the solution, and the same clusters solution ($N = 3$) was obtained. Criterion validity was also ascertained by evaluating if significant differences were found between the identified clusters.

The cluster analysis showed a three-cluster solution based on the complete sample. The clusters were named as followed, based on victimization characteristics: (1) Minimal Victims (2) Moderate Victims and (3) Poly-Victims. The top three most common combinations of victimization forms were examined for the three clusters obtained by way of the cluster analysis. Minimal Victims were most likely to be exposed to (a) Peer/Sibling Victimization (41.5%),

followed by Conventional Crimes (27.6%) and No victimization exposure (20.7%). The top three combinations for the Moderate Victims, on the other hand, were as follows: (a) Peer and Sibling Victimization as well as Conventional Crimes (23.4%); (b) Peer and Sibling Victimization, Conventional Crimes, and Witness/Indirect Victimization (17.7%); and, finally, (c) Peer and Sibling Victimization, Conventional Crimes, Witness/Indirect Victimization, and Maltreatment (6.4%) as well as only Peer and Sibling Victimization (6.4%). The Poly-Victim cluster were most likely to be exposed to a large combination of forms, with the top three most frequent combinations of forms as follow: (a) Peer and Sibling Victimization, Conventional Crimes, Witness/Indirect Victimization, and Maltreatment (20.9%); (b) Peer and Sibling Victimization, Conventional Crimes, Witness/Indirect Victimization, and Sexual Victimization (9.3%) as well as Peer and Sibling Victimization, Conventional Crimes, and Sexual Victimization (9.3%); and, (c) exposure to all forms but Internet Victimization (7.0%) as well as Peer and Sibling Victimization, Conventional Crimes, Maltreatment, and Internet Victimization (7.0%).

In a similar vein, the Poly-Victim cluster were more likely than the Minimal-Victim and the Moderate-Victim clusters to be classified as both lifetime ($X^2 = 13.87$; $p = .001$ and $X^2 = 57.46$; $p = .001$; respectively) and past-year ($X^2 = 15.01$; $p = .001$ and $X^2 = 5.78$; $p = .01$; respectively) poly-victims. Children in the Moderate-Victim cluster also were more likely to be past year poly-victims compared to the Minimal-Victim cluster ($X^2 = 51.18$; $p = .001$). The children classified into the Minimal-Victims cluster were also less likely to experience both past-year and lifetime multiple victimization, compared to children in the Moderate-Victim ($X^2 = 51.18$; $p = .001$ and $X^2 = 170.00$; $p = .001$; respectively) and Poly-Victim ($X^2 = 43.35$; $p = .001$ and $X^2 = 72.00$; $p = .001$; respectively) clusters. The Poly-Victim and Moderate-Victim clusters did not differ on their experience of multiple victimization. However, children in the Poly-Victim cluster were significantly more likely than children in the Moderate Victim cluster ($X^2 =$

3.79; $p = .05$) to have a mental health diagnosis and/or be currently receiving or on a waitlist for psychological services. There was also a trend for children in the Poly-Victim cluster, compared to the Minimal-Victim cluster, to have a mental health diagnosis and/or be currently receiving or on a waitlist for psychological services ($X^2 = 3.24$; $p = .06$). Table I below presents additional victimization as well as demographic data across the three clusters. The identified clusters did not vary significantly on child age, sex, or ethnicity, family structure, and income. However, a significant group difference was found on household size, with children classified into the Moderate-Victim cluster living in larger families than children in the Poly-Victim cluster ($t = 2.38$; $p = .05$).

Turning to differences across exposure to victimization, by way of a One-Way ANOVA, differences among clusters on lifetime victimization exposure was evaluated. The clusters were found to significantly differ on all forms of victimization ($F(2, 210)$ ranging from 12.76 to 33.39; $p = .001$). Post-hoc analyses (LSD) revealed that, for all victimization forms, the Poly-Victim cluster had significantly greater exposure to the respective victimization form compared to the Moderate-Victim and Minimal-Victim Clusters. On the other hand, the Moderate-Victim experienced greater exposure to the examined victimization forms than the Minimal-Victim, but their exposure was significantly lesser than the Poly-Victim group. Finally, the children classified into the Minimal-Victim cluster were exposed to significantly less victimization across all forms compared to the Moderate-Victim and Poly-Victim clusters. Clusters also differed on the lifetime non-victimization adversities scale ($F(2, 210) = 12.10$; $p = .001$) and the cumulative lifetime victimization variable ($F(2, 210) = 81.70$; $p = .001$). Post-hoc analyses (LSD) revealed the same pattern of results as was found for the victimization forms, in that children in the Poly-Victim cluster experienced greater non-victimization adversities and greater lifetime victimization than both the Minimal-Victim and Moderate-Victim cluster. The children in the Minimal Victim cluster again experienced less non-victimization adversities and greater lifetime

victimization compared to the Moderate-Victim and Poly-Victim clusters. Finally, the Moderate-Victim cluster experienced a greater number of non-victimization adversities and lifetime victimizations compared to the Minimal-Victim cluster, but, again, their score on these scales were significantly lower than those obtained by children in the Poly-Victim cluster.

Table 1. Sociodemographic characteristics and victimization exposure across clusters (% unless otherwise specified)

	Minimal victims N = 29	Moderate victims N = 141	Poly-victims N = 43
	%	%	%
Socio-demographics			
Age ^a	7.69 (2.07)	8.04 (1.94)	8.28 (2.03)
Sex (boys)	41.4	55.3	51.2
Ethnic minority	31	16.3	27.9
Family income (before tax) ^b	100-109,999	100-109,999	90-99,9999
Household size ^a	4.31 (1.07)	4.60 (1.20)	4.12 (1.00)
Family structure			
Married	69	69.5	62.8
Common-law	3.4	12.1	11.6
Single parent	3.4	5	14
Step-parent	24.1	13.5	11.6
Caregiver education			
High school	13.8	16.3	11.6
College/trade	24.1	23.4	32.6
University	62.1	60.3	55.8
Clinical subgroup	10.3	14.9	25.6
Victimization^a			
Life adversities	0.86 (1.19)	1.50 (1.49)	2.54 (2.24)
Multiple victim	0	100	100
Poly-victim	0	0	37.2
Mean victimization (LT)	0.83 (0.47)	5.08 (2.53)	9.78 (4.75)
Conventional Crimes	0.28 (0.45)	1.79 (1.41)	9.78 (4.75)
Witness/Indirect	0.0 (0.0)	0.65 (0.84)	1.49 (1.45)
Peer/Sibling	0.42 (0.50)	1.82 (1.05)	2.21 (1.01)
Sexual	0.0 (0.0)	0.0 (0.0)	0.56 (0.70)
Maltreatment	0.0 (0.0)	0.31 (0.57)	0.81 (0.91)
Exposure Family Violence	0.04 (0.19)	0.45 (0.81)	1.47 (1.84)
Internet	0.0 (0.0)	0.0 (0.0)	0.33 (0.52)

^a mean and standard deviations in parenthesis; ^b median

Associations with psychosocial difficulties. The following TSCYC symptom scales were used to evaluate psychosocial symptoms: (a) Posttraumatic Stress; (b) Anxiety; (c)

Anger/Aggression; and (d) Depression. As illustrated in Figure 1, the Poly-Victim cluster obtaining higher scores on the Posttraumatic Stress, Anxiety, Anger/Aggression and Depression symptom scales, compared to the Minimal-Victim and Moderate-Victim clusters. The children in the Minimal-Victim cluster, on the other hand, obtained significantly lower scores on these four scales compared the Poly-Victim. Differences were less significant between the Minimal-Victim and Moderate-Victim clusters, with statistically significant differences only found on the Depression scale (with Moderate-Victims scoring higher than Minimal-Victims). That said, a statistical trend ($p < .10$) was found wherein the Moderate-Victim cluster scored higher than the Minimal-Victim cluster on the Posttraumatic Stress, Anxiety, and Anger/Aggression scales.

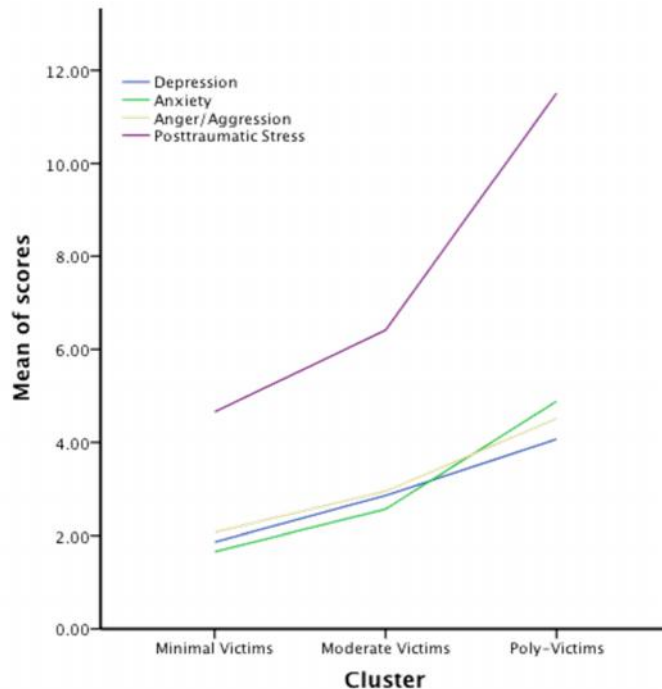


Figure 1. Psychosocial difficulties across cluster membership