

The Effect of Abuse on Adolescent Behaviour:
An Empirical Analysis of Abused Adolescents and Observed
Negative Functioning

by

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Abstract

This study is an exploratory examination of how different forms of child abuse affect adolescent victims. The study examines whether victims of physical abuse, sexual abuse, neglect, emotional abuse, or witnessing domestic violence exhibit negative functioning behaviours such as depression, drug use, or involvement in the Youth Criminal Justice Act. It also measures how abuse chronicity and poly-victimization moderate the relationship between the form of abuse and negative functioning. These relationships were quantitatively tested through three logistic regression models. It was found that there was a relationship between abuse type and negative functioning, and that chronicity and poly-victimization played important roles in determining functioning behaviours. This study contributes to the growing body of child abuse research that is attempting to build a comprehensive understanding of why and how abuse affects victims, and will inform service providers who could use such connections to identify and treat potential functioning problems in victims.

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Dedication

To Jeff, my best friend and husband.

And to our beautiful bunnies: Bonnie and Callie.

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The Effect of Abuse on Adolescent Behaviour: An Empirical Analysis of Abused Adolescents and Observed Negative Functioning

Introduction

The abuse of children in Canada is widespread and affects how thousands of children and adolescents adapt and function in society. An estimated 217,319 child maltreatment cases were reported in the 2003 Canadian Incidence Study, of which 47 percent could be substantiated by child welfare workers (Trocomé, et al., 2005). Further studies estimate that this rate of reported abuse represents only a small portion of the number of cases that actually occur every year. A Canadian study of self-reported abuse has suggested that the true prevalence of some forms of abuse can be up to six times greater than that which is reported to Child Protective Services (MacMillan, Jamieson, & Walsh, 2003).

The impact abuse can have on children has earned considerable research attention, but the breadth of the topic is so great that there is still much to be done to better understand its influence on children and society. Many of the studies come from a psychological perspective (See, for example, Hildyard & Wolfe, 2002, Boxer & Terranova, 2008), but examining the impact child abuse has on victims from a sociological standpoint is important as well because of the influence of demographics such as gender . This study will contribute a clearer understanding of how the type of abuse, and the qualities of abuse, can shape the negative behaviours and emotional troubles of abused adolescents. This

explorative study will consider five forms of child abuse (neglect, witnessing domestic violence, physical abuse, sexual abuse and emotional abuse), and the qualities of that abuse: the frequency of the abuse, and whether the victim experienced more than one form of abuse, termed poly-victimization (Finkelhor, Ormrod, & Turner, 2007). All of these variables will be used to determine the type and extent of the impact that child abuse has on adolescent victims. This is an important contribution to understanding social problems associated with observed negative functioning, including delinquency, substance abuse and the social impact of adolescents coping with mental health issues such as self-harming or depression.

Previous studies have been conducted to determine how abuse can affect children (See, for example, McGee, Wolfe & Wilson, 1997, Kendall-Tackett, Williams & Finkelhor, 1993). Although the immediate physical effects of abuse, ranging from bruises to death, can be recorded, attributing behavioural outcomes and symptoms is more challenging. These behavioural problems are referred to as negative forms of functioning; harmful behaviours and symptoms that the victim displays such as: criminal activity, running away, depression and poor self-image (Gore-Felton et al., 2001; James & Mennen, 2001). Negative functioning is most commonly categorized in the literature as either externalizing or internalizing problems. *Externalizing problems* are considered to be behavioural effects of one or more forms of child abuse (Gore-Felton et al., 2001) and include behaviours such as aggression and substance abuse (Higgins & McCabe, 2000). *Internalizing effects* are defined as the emotional mal-adjustments of children

who have suffered abuse (Gore-Felton et al., 2001). Internalizing effects can include introverted functions such as depression and low self-esteem (Boney-McCoy & Finkelhor, 1996).

Past research has associated the type of abuse with particular forms of negative functioning observed in the child. Externalizing behaviours have been associated with physical and sexual abuse whereas emotional abuse is more commonly associated with internalizing problems (Gore-Felton et al., 2002). This study is an exploratory test of whether or not five different forms of abuse can be associated with externalized or internalized negative functioning, and to what extent a form of abuse can be associated with negative functioning compared to other forms of abuse. The study also examines whether the chronicity of abuse and poly-victimization moderates¹ the association between type of abuse and type of negative functioning.

Previous studies also indicate that it is not purely the act of abuse that determines the impact of abuse on the child, but also the characteristics of that abuse (English et. al., 2005). Chronicity and poly-victimization has been demonstrated to moderate the relationship between the forms of abuse and negative functioning (Latimer, 2006; Chamberland et al., 2005; Hergert et al., 2006).

¹ A moderator is a variable that affects the strength and/or direction of a relationship between an independent and dependent variable (Baron & Kenny, 1986).

More specifically, the following research questions guide this thesis:

1. Is there a relationship between form of abuse and type of negative functioning observed in adolescents?
2. Do (a) chronicity, and (b) poly-victimization, moderate any of the relationships between form of abuse and type of observed negative functioning?

By examining all five forms of child abuse and the qualities that shape the experience, this study makes a valuable contribution towards future program building for victims, and the development of theoretical discussions about why certain forms of abuse have the power to affect victims in different ways compared to other forms of abuse. This is also an important contribution to understanding social problems associated with observed negative functioning, including delinquency, substance abuse and the social impact of adolescents coping with mental health issues such as self-harming or depression.

This thesis reviews the previous literature regarding: behaviours that are classified as externalizing and internalizing, the different forms of abuse that adolescents are victimized by, how these forms are thought to affect their functioning, and how various demographics and characteristics of abuse can affect the negative functioning of an adolescent. It will then review the research models that will be used to empirically test the relationship between adolescent abuse and negative functioning. The quantitative measures required to test these questions and the variable properties of the data to be utilized will be presented

to demonstrate why the data are suitable for this research. The thesis will then explain the results, discuss and interpret the results and conclude what limitations exist, what policy implications may potentially be drawn from the completed analysis, and the potential contributions it can make to the academic and service communities.

1.0 Child and Adolescent Abuse and Functioning

1.1 Externalizing and Internalizing Effects

There is a large amount of research and literature that discusses the multitude of adolescent functioning problems that affect youth. An important component of studying adolescent functioning and making meaningful conclusions is to understand how these many behaviours are expressed by adolescents. The most widely used method of classifying child functioning today is internalizing or externalizing behaviours.

The origin of classifying childhood functioning problems as either internalizing or externalizing behaviours originates from the research of Thomas Achenbach (1992) in the 1960s. Achenbach developed a checklist of problems applicable to children between the ages of 4 and 16 using clinical literature and clinician consultation. The developed checklist was then used to score the records of 300 boys and 300 girls who were seen at the Minnesota Child Psychiatry Service and amended to include several more problems. Factor analysis was then utilized to develop a taxonomy of child psychopathology. Building on this research, Achenbach later developed child behaviour checklists derived from assessments from the viewpoint of the parent, which included new symptoms derived from parent consultation. Whether a child had a score considered to be problematic was dependent on their gender and age group; 4 to 5, 6 to 11, or 12 to 16 years of age. The decision to create different scoring levels for gender and age groups was based on the child's expected cognitive and physical development, education level, and social status.

Principal components analysis, with both orthogonal (varimax) and oblique rotations, was conducted on the first 7 to 15 components of each age and gender group, using the data from both clinical and non-clinical samples. Second order analysis then produced “two broad-band groups that were categorized as either ‘internalizing’ or ‘externalizing’” (pg. 79). The internalizing group includes problems of depression, being withdrawn or having somatic complaints. Externalizing behaviours include problems that indicate that the child or adolescent has difficulties interacting with others as well as following social norms, and includes a series of behaviours that could be broadly characterized as aggressive or delinquent behaviour.

To extend the diagnostic power of this assessment tool, Achenbach subsequently included rating scales designed to collect functioning information from teachers (Teacher’s Report Form), adolescent self-reporting (Youth Self-Report), direct observation in group settings (Direct Observation Form), and clinical interviewing (Semi-structured Clinical Interview for Child). The author has termed the method of assessing child and youth functioning from multiple sources as “multi-axial empirically based assessment.” The scales that were developed are widely used in many studies to assess the impact of abuse on children and adolescents (McGee, Wolfe & Wilson, 1997).

According to Achenbach’s methodology (Achenbach & McConaughy, 1997), a number of different behaviours fall into the categories of externalizing behaviours and internalizing symptoms, while several behaviours fit into neither category. Even though internalizing behaviours were broadly categorized as

being withdrawn, anxious/depressed, or having somatic complaints, these categories were composed from a list of many symptoms derived from the multi-axially based assessment, including items from the parent, teacher, and youth reports. Not all symptoms appear on each report, but instead collectively contribute to the total list of symptoms.

Table 1: Internalizing Symptoms

<i>Withdrawn</i>	<i>Anxious/Depressed</i>	<i>Somatic Complaints</i>
Would rather be alone	Lonely	Feels dizzy
Refuses to talk	Cries a lot	Overtired
Secretive	Fears impulses	Aches, pains
Shy, Timid	Needs to be perfect	Headaches
Stares blankly	Feels unloved	Nausea
Sulks	Feels persecuted	Eye problems
Under-active	Feels worthless	Skin problems
Unhappy, sad, depressed	Nervous, tense	Stomachs
Withdrawn	Fearful/anxious	Vomiting
	Feels too guilty	
	Self-conscious	
	Suspicious	
	Unhappy, sad, depressed	
	Worries	

SOURCE: adapted from Achenbach (1991a)

Similarly derived, externalizing symptoms are broadly described as delinquent and aggressive behaviour, but include a larger array of symptoms that are highly correlated. The behaviours that are found in the category of externalizing behaviours include both overtly aggressive acts such as fighting and non-aggressive forms of delinquent behaviour. Although some children may exhibit one or the other, other children have been shown to engage in both forms of externalizing behaviours (Achenbach & McConaughy, 1997).

Table 2: Externalizing Symptoms

<i>Delinquent Behaviour</i>	<i>Aggressive Behaviour</i>
Lacks guilt	Argues
Bad companions	Braggs
Lies	Mean to others
Prefers older kids	Demands attention
Runs away from home	Destroys own things
Sets fires	Destroys other's things
Steals at home	Disobedient at school
Steals outside home	Jealous
Swearing, obscenity	Fights
Truancy	Attacks people
Alcohol, drugs	Screams
	Shows off
	Stubborn, sullen
	Sudden moods
	Talks too much
	Teases
	Temper tantrums
	Threatens
	Loud

SOURCE: adapted from Achenbach (1991a)

The clinical samples also observed behaviours that did not exclusively belong to either externalizing or internalizing symptoms. These behaviours include attention problems, social problems, and thought problems.

Table 3: Unclassified Symptoms

<i>Attention Problems</i>	<i>Social Problems</i>	<i>Thought Problems</i>
Acts too young	Acts too young	Can't get mind off thoughts
Can't concentrate	Too dependent	Hears things
Can't sit still	Prefers younger kids	Repeats acts
Confused	Gets teased	Sees things
Daydreams	Not liked by peers	Strange behaviour
Impulsive	Clumsy	Strange ideas
Nervous, tense	Doesn't get along with peers	
Poor school work		
Clumsy		
Stares blankly		

SOURCE: adapted from Achenbach (1991a)

Other studies have also confirmed that adolescent functioning problems can be factored into 2 categories that are comparable to internalizing and externalizing behaviours. Brack, Brack and Orr (1994) conducted an analysis of the problems of youth between the ages of 12 to 16, and concluded that their findings were comparable to Achenbach's model. As the prevalence of the instruments Achenbach developed grows, there has also been research testing the factor loadings and syndromes described by Child Behaviour Checklist and related Scales. Dedrick, Greenbaum, Friedman, Wetherington and Knoff (1997) used confirmatory factor analysis on a sample of 631 youth between the ages of 8 to 18 to test this model of youth functioning. The authors' tests supported Achenbach's (1991a) eight-correlated-factor model and provided further support for the construct validity of the scores through several fit statistical tests.

Some studies support the reasoning that it is possible some youth could exhibit both internalizing and externalizing behaviours at the same time. Reitz, Dekovic and Meijer (2005) assessed the possibility of comorbidity between externalizing and internalizing symptoms through examination of three models of negative adolescent functioning. Through confirmatory factor analysis, the authors concluded that although internalizing and externalizing behaviours are two unique constructs, the behaviours are also indicative of a single, overall factor of adolescent problem behaviour. The existence of this second-order factor implies the possible existence of comorbidity of externalizing and internalizing behaviours.

The large amount of research supports the theory that adolescent functioning could be considered as two categories of behaviour; internalizing and externalizing behaviour. Even though comorbidity of symptoms may be possible, youth will likely be more prone to exhibit one type of the symptom or the other, dependent on their experience, age, and gender.

1.2 Forms of Abuse

In the research literature, child and adolescent abuse is commonly categorized into 5 forms: physical abuse, sexual abuse, neglect, psychological abuse and witnessing domestic violence. The following review of the adolescent abuse literature will explore previous research that has been conducted on each of these forms of abuse. Studies that have investigated the association between adolescent abuse and internalizing or externalizing functioning will be highlighted.

1.2.1 physical abuse.

Physical abuse is often the most recognized and researched form of child and adolescent abuse. Physical abuse in Canada is defined as the application of unreasonable force by an adult or youth to any part of the child's body and includes acts of harsh physical discipline, forceful shaking, pushing, grabbing, hitting with a hand or object, punching, kicking, biting, choking, strangling, stabbing, burning, shooting, poisoning or the excessive use of restraints (Health Canada, 2006, Justice Canada, 2009, Trocomé, 2003). The effects of physical

abuse are not only seen in the immediate physical injury to the child, but also in the child's subsequent psychological and behavioral maladaptive functioning. These changes are not only serious, but long lasting and capable of affecting the victim throughout his/her lifetime (Kolko, 1992).

The victims of childhood abuse are commonly thought to be at a higher risk of engaging in externalizing behaviours (McGee, Wolfe & Wilson, 1997). Malinosky-Rummell and Hansen's (1992) overview of the long-term consequences of childhood physical abuse identify several externalizing behaviours more common in physically abused children than typically observed in the general population, including adolescent aggression, non-violent criminal behaviour and substance abuse.

This common association of externalizing behaviours with physical abuse can also be observed in the study conducted by Loos and Alexander (1997) that assessed the long-term effects of multiple forms of abuse. Four hundred plus participants were recruited from a large, public, mid-Atlantic university in the United States to take part in the study. Subjects consisted of 247 females and 155 males, from a variety of different ethnic backgrounds, with a median age of 19.26 years. Participants had an average socioeconomic score (SES) of 52.34 on the Hollingshead Four Factor Index of Social Status², placing the average participant within the middle to upper class grouping. The research assessed the abuse experience and its long-term effects through the use of established and

² The Hollingshead (1975) four-factor index of socioeconomic status (SES) is based on a composite of education, occupation, sex and marital status. Potential scores can range from 8 to 66, with a higher score corresponding with a higher SES.

reliable scales such as the Conflict Tactics Scale (Straus, 1979). Hierarchical regression analysis was used to assess whether physical abuse, emotional neglect and verbal aggression were capable of producing effects above and beyond the effects of other factors, including co-occurring forms of abuse and demographic influences. As Loos and Alexander (1997) predicted, physical abuse during childhood was significantly related to self-reported levels of anger and aggression in the victim ($B = .092$, $p < .004$), even when controlling for sex, SES, and concurrent maltreatment forms. In addition to predicting anger and aggression, they also found that childhood physical abuse was predictive of loneliness and social isolation, which are internalizing forms of functioning.

The association between the experience of physical abuse and externalizing behaviours is supported by other research. Another study of adolescent abuse and resulting behavioural problems (McGee, Wolfe & Wilson, 1997) concludes that physical abuse, a “conflict” form of maltreatment, is capable of making a unique contribution to self-reported externalizing problems when controlling for influences such as poly-victimization, age, sex, IQ, stressful life events and SES of the victim.

Fagan (2005) also found through bivariate analyses of the American National Youth Survey (NYS) that adolescent physical abuse and self-reported criminal acts were significantly related, regardless of type of crime. Victims of child abuse reported double to triple the frequency of offending compared to non-victims. Multivariate analysis found that, although controlling for other variables such as gender, income, and ethnicity, reduced the association between physical

abuse and criminal acts, the relationship remained significant but tended to weaken over time as adolescents transitioned into adulthood. Victims were nearly twice as likely as non-victims to report involvement in criminal acts.

The results of the physical abuse research demonstrate that the victims of physical abuse are affected by more than the immediate injuries the abuse can cause. It affects their well-being and can continue to have an impact on childrens' futures, even after their injuries have healed.

1.2.2 emotional maltreatment.

The definition and identification of emotional abuse has proven to be difficult for both researchers and service providers. While other forms of abuse such as physical or sexual violence can be easily identified through a single incident, emotional maltreatment can be subtle, invisible and therefore difficult to identify and assess the extent of the abuse and the impact it has on its victims (Chamberland et al., 2005). The terms emotional abuse and psychological abuse themselves are often given little distinction and are used interchangeably by both service providers and researchers. O'Hagan (1995), however, explains that a clear difference exists between emotional and psychological abuse. To define these differences, it is important to acknowledge that emotional and psychological abuse can rarely be defined through a single act and to properly define the abuse, researchers must simultaneously define what each type of abuse is and how it affects its victim. Whereas emotional abuse is defined as the: "repeated, inappropriate emotional responses to a child's experience of

emotion and related expressive behaviour” (pg. 456), psychological abuse is defined as “sustained and repetitive inappropriate behaviour which damages or substantially reduces the creative and developmental potential mental faculties and processes of the child, including intelligence, memory, recognition, perception, attention, imagination and moral development” (pg. 458). Although emotional abuse entails inappropriate emotional responses from the abuser, psychological abuse can include behaviours that may not be emotional in nature, including domestic violence, lies, exploitation or other forms of abuse such as physical abuse.

Even though the distinction can be made between these two acts and their effects, most research does not differentiate these forms of abuse (Doyle, 2001; Chamberland, 2005; Trocomé et. al., 2005). Acts of abuse that are labeled as emotional or psychological are often grouped together, and for the purposes of this review, will be considered interchangeable in order to reflect the majority of research and surveys regarding this category of abuse. The best summary of how emotional abuse is typically conceptualized comes from Health Canada (2006), which defines emotional harm as “adult behaviour that harms a child psychologically, emotionally or spiritually” (pg. 2). Examples of such behaviour include hostile treatment, frequent or extreme verbal abuse such as threatening, demeaning or insulting behaviours, emotional neglect or direct exposure to violence between adults *other than* primary care givers.

The association between psychological abuse and adolescent behaviour problems has been well explored in a study by McGee, Wolfe and Wilson (1997).

In their study, one hundred and sixty adolescents (70 males, 90 females) between the ages of 11 and 17 were randomly chosen from an open caseload of a child protection agency. The adolescents were primarily Caucasian (96%) but included some adolescents of Aboriginal and Black ethnicity. Adolescent functioning was measured using both the caretaker-reported Child Behaviour Checklist (BCCL; Achenbach 1991a) and the Youth Self-Report (YSR; Achenbach, 1991b). As mentioned, both these measures are well established and have documented validity and reliability.

McGee, Wolfe and Wilson measured the effects of physical, sexual and psychological abuse, neglect and witnessing violence, while considering the influence of multiple maltreatment experiences, age, sex, stressful life events, IQ and SES. In a simple, bivariate analysis, they found that psychological abuse was significantly associated with both internalizing ($r=.37$) and externalizing behaviours ($r=.20$). The bivariate association with internalizing problems was especially strong. The same association was also present when all additional variables and other forms of abuse were controlled. Among all abuse forms they considered, only psychological abuse remained predictive of behavioural problems when all variables and maltreatment types were controlled for.

The authors also found that the presence of psychological abuse was an important determinant in the behaviour problems of adolescents who were victimized by other forms of abuse. After careful analysis, it was concluded that psychological abuse was able to "potentiate" (McGee et al., 1997, pg. 140) the contribution of other abuse types to adolescent functioning. Psychological abuse

acted as a suppressor variable, meaning that because of its association with predicting variables such as other abuse forms, it was able to enhance the correlation between other predictors and adolescent negative functioning.

Other research concludes that similar functioning behaviour problems are associated with psychological abuse, especially internalized functioning. Chamberland et al. (2005) observed that children who suffer psychological abuse have more problems with developmental delays and internalized problems than other children. Glaser (2002) also confirms that emotional problems such as low self esteem, anxiety and distress are commonly found in emotionally abused children. Behaviors such as drug use and running away, eating disorders, self-harming and suicidal behaviors have been observed in the research (Doyle, 2001).

Overall, considering the results of McGee, Wolfe and Wilson's study, in conjunction with the other studies mentioned, the current research appears to reflect that adolescents who have experienced emotional abuse will be more likely to exhibit internalizing effects. It may also be possible to observe externalizing effects, especially if the emotional abuse occurs simultaneously with other forms of abuse.

1.2.3 exposure to domestic violence.

Until recently, child and adolescent exposure to domestic violence was considered a form of emotional maltreatment. Now that researchers and caregivers are more aware of the impact exposure to domestic violence has on

children, it is recognized as a separate category of child abuse. Exposure to family violence is classified as circumstances that “allow a child to be aware of violence occurring between a caregiver and his/her partner or between other family members” (Health Canada, 2006, pg. 2, Trocomé et al., 2005). This includes not only witnessing a violent event, but also exposing the child to any signs that indicate that violence has occurred, such as overhearing violent events or observing physical injuries.

Chantal Bourassa’s (2007) study of the effects of witnessing interpersonal violence on adolescents concludes that witnessing violence, alone or in conjunction with other abuse, has a definite impact on adolescent internalizing and externalizing behaviours. The study was conducted on a population of 490 French-speaking teens, 15 to 19 years of age, attending secondary school in New Brunswick, Canada. The presence of internalized and externalized symptoms was measured using French versions of the Youth Self Report scales (Achenbach, 1991a). Internalized behaviours included withdrawal, somatic complaints, anxiety and depression. The externalized scales measured delinquent and aggressive behaviour. Interpersonal violence was measured using a French version of the psychological and physical aggression scales from the Relationships between My Parents Questionnaire (Straus, 2000, CTS2-CA). Over half of the respondents had been exposed to at least one incident of inter-parental violence within the last 5 years. Results confirmed that adolescents who experienced abuse were significantly more likely ($F=42.59$, $p<0.001$) to exhibit internalized and externalized symptoms than those who did not report physical

abuse or inter-parental violence. The following table illustrates the proportion of adolescents with clinical levels of internalized and externalized symptoms based on their abuse history.

Table 4: Proportion of Adolescents with Clinical Levels of Symptoms

	<i>n</i>	Internalized (%)	Externalized (%)
No exposure to violence or physical abuse	205	5.36	1.46
Exposed to interparental violence	131	21.37	6.11
Exposed to interparental violence and physically abused	122	36.61	30.33

Results adapted from table 8, Bourassa 2007.

Adolescents who were exposed to interparental violence displayed four times as many clinical level internalizing and externalizing symptoms as youth who experienced no violence. Adolescents who were exposed to interparental violence and experienced physical abuse showed even greater levels of clinical symptoms. This study demonstrates the correlation between witnessing inter-parental violence and externalizing and internalizing symptoms.

Additional studies also support how exposure to domestic violence correlates to internalizing and externalizing behaviours. According to the results of the Canadian National Longitudinal Survey of Children and Youth from 1998-1999, children who had witnessed violence in the home were more than twice as likely to be “physically aggressive, to commit delinquent acts against property and to display indirect aggression” (Dauvergne & Johnson, 2001). Internalizing behaviours such as depression, low self-esteem and anxiety have been observed in children who have been identified as having witnessed domestic violence (Carlson, 2000; Johnson et al., 2002). Many of these studies hypothesize that the form and severity of negative functioning exhibited may be

dependent on social influences such as gender, the occurrence of other simultaneous forms of abuse and chronic exposure (Spilsbury et al., 2007; Bourassa, 2007). What all studies broadly conclude is that exposure to domestic violence is damaging to the well-being and functioning of children and adolescents.

1.2.4 sexual abuse.

Sexual abuse has garnered much research over the years to determine the association between the experience and subsequent maladjustment. It should be expected that this traumatic experience could cause many emotional and behavioural problems in young victims. Sexual abuse can include many different forms of sexual victimization, but includes any act that consists of the involvement of a child, by an adult or youth, in an act of sexual gratification, or exposure of a child to sexual contact, activity or behaviour. This includes sexual exploitation, exhibitionism, involving a child in prostitution or pornography, voyeurism, sexual talk, fondling, oral sex or any form of attempted or completed penetration (National Health Canada, 2006,pg. 2, Justice Canada, 2009, Trocomé et al, 2005). Previous studies have asserted that victims of sexual abuse can display a range of both externalizing and internalizing behaviours, including post-traumatic stress disorder, cognitive disorders, depression, anxiety, substance abuse, suicide, indiscriminate sexual behaviour, eating disorders, self-harming and interpersonal disorders (Brier & Elliot, 1994).

In their examination of the effects of child maltreatment on children's adjustment, Manly, Kim, Rogosch and Cicchetti (2001) examine the abuse history as well as the behavioural and psychological problems of 814 youth between the ages of 5.5 and 11.5. All the children in the study attended a free-of-charge summer day camp research program in an upstate city in the state of New York. The camp was open to all children regardless of whether they had any abuse history. More than half of the children were male (61%) and approximately 70 percent came from minority ethnic or racial backgrounds. Children's maltreatment histories were obtained from Child Protective and Preventative Services. The majority of children (85%) came from families who were from the lowest socioeconomic strata (for more information, see Hollingshead, 1975). Children with and without abuse histories were equally as likely to be reliant on social assistance. Children's abuse history was coded using the maltreatment classification system (Barnett et al., 1993) and functioning was coded by trained camp counselors using established scales to measure both externalizing and internalizing functions. Child abuse, and its potential to affect subsequent functioning, was analyzed using a variety of methods including univariate frequencies as well as ANOVAs, MANOVAs, and multiple regressions. The results show that, overall, all maltreated children were more significantly more likely to show externalizing and internalizing symptoms than non-maltreated children ($p < .001$). When examining the differential impact associated with subtypes of abuse, victims of sexual abuse alone experienced higher mean scores of externalizing effects (57.90) than non-maltreated children (51.31). Poly-

victimized children who experienced physical abuse and sexual abuse had an even higher mean externalizing score (60.07). Children who were victimized by sexual abuse experienced a higher level of internalizing symptoms (mean score = 53.62) than the internalizing level of non-maltreated children (49.83). Through regression analysis, the authors confirm that groups of children who experience sexual abuse, with or without the co-occurrence of physical abuse, have similar levels of externalizing behaviours as other maltreatment groups and elevated externalizing levels compared to non-maltreated groups. However, it was also found that older children were associated with lower levels of aggression and higher withdrawal behaviours. This may be an indication that victims of sexual abuse may be prone to experience both externalizing and internalizing behaviours.

Other studies also assert that sexual abuse is capable of causing internalizing and externalizing functioning problems in youth. Gore-Felton et al.'s (2001) examination of 842 incarcerated³ adolescents from a statewide juvenile correctional system in a southern state in the United States found that youth who reported sexual abuse had significantly greater externalizing behaviours than youth who did not report having been victimized by sexual abuse, but did not find a significant relationship between sexual abuse and internalizing symptoms.

Conversely, Bolger and Patterson's (2001) examination of 785 community

³ Caution should be used to interpret the results of Gore-Fenton's study regarding externalizing symptoms of incarcerated youth, since the sample is derived from adolescents who participated in criminal activities. It should be expected that all incarcerated youth would display higher externalizing symptoms than a random sample from the general population.

children from Charlottesville, Virginia, 59 of whom had been maltreated according to the local Department of Social services, found through a longitudinal analysis that children who were sexually abused had significantly higher levels of internalizing problems ($\beta = .09$, $p < .05$). Studies also note that victims may often display age-inappropriate sexual behaviour (e.g. Kendall-Tackett et al, 1993). Beitchman et al. (1991) suggest that these behaviours are more commonly observed in pre-school age children but can later manifest in adolescents through promiscuity, prostitution or sexual aggression.

Kendall-Tackett, Williams and Finkelhor (1993) compiled a meta-analysis of the results from 45 studies that examined the effect of sexual abuse on children. The authors presented a weighted composite analysis of what proportion of victims exhibited particular internalizing and externalizing symptoms. Overall, their results showed that of all children studied, 30% exhibited internalizing symptoms and 23% exhibited externalizing behaviors. When considering the studies that separated victims by developmental stage, adolescents displayed high levels of behaviours considered both externalizing and internalizing. More specifically:

- 71% displayed self-injurious behaviours
- 53% engaged in substance abuse
- 46% were depressed
- 45% were withdrawn
- 45% ran away
- 41% had suicidal behaviours
- 38% were promiscuous
- 27% engaged in illegal acts

Other behaviours were also present but occurred in samples of adolescents that were too small to draw quantitative conclusions from ($n < 100$). Effect sizes were calculated for several behaviours and it was concluded that sexual abuse, on average, accounted for 32% of the variance in externalizing behaviours and 38% of the variance in internalizing symptoms. Although both of these are substantial contributions, the authors concluded that sexually abused children do not display behaviours that are more symptomatic than other clinically abused children, except for PTSD symptoms and sexualized behaviours. The authors also emphasized the importance of considering how characteristic variables such as chronicity, identity of the perpetrator, and severity of the abuse can affect the victims functioning.

The review of the above studies demonstrates that sexual abuse is a traumatic and complex experience that is capable of producing a number of different symptoms in victims. Although current literature can confirm that sexual abuse can be highly damaging to the functioning of its victims, the presence and strength of symptoms varies from study to study and between victims for a multitude of possible reasons. There are many possible reasons that could account for this difference in symptoms, that have been previously been categorized into three categories: event characteristics/context such as age and concurrent abuse, relationships and interactions with others, and characteristics of the individual such as self-blame and coping strategies (Barker-Collo & Read, 2003). In this regard, some studies theorize that externalizing and internalizing functions may be co-morbid in sexual abuse victims (Manly et. al., 2001). The

abuse and the context it occurs in should be carefully measured to determine if sexual abuse has a differential effect on its victims compared to other forms of abuse, and to subsequently verify what forms of assistance would be best suited to the victims and the challenges they may face.

1.2.5 neglect.

Although neglect is the most commonly reported form of child abuse in Canada (34% of all substantiated cases, Health Canada, 2006), it often receives little regard in research literature for the significant threat it poses to a child's well-being (Hildyard & Wolfe, 2002). Broadly defined, neglect is the failure by either a parent or caregiver to provide the physical, emotional or psychological necessities of life to a child (Health Canada, 2006, pg. 2, Justice Canada, 2009). Examples could include physical neglect, medical neglect, educational neglect, failure to supervise leading to physical or sexual harm, permitting criminal behaviour, failure to provide psychological treatment, or abandonment. Although neglect is often given the least attention in studies, it may potentially have a greater impact on functioning than any other form of abuse (Valle & Silovsky, 2002).

A study completed by Arata, Langhinrichsen-Rohling, Bowers and O'Brien (2007) reveals some of the negative functioning that could be expected of children and adolescents who have been victimized by neglect. For the study one thousand four hundred fifty-two youth between 13 and 18 years of age were recruited from middle schools, high schools and a district-wide early warning

truancy program in Alabama. The sample was ethnically diverse, 53 percent were female, and at least half of the sample came from low-income households. The survey was composed of several well-established scales and questionnaires designed to measure maltreatment history and the extent of negative affects and externalizing behaviours. In the sample, the most common form of abuse experienced was neglect, with 18% (n=267) of the sample reporting experiencing either emotional or physical neglect. A further 28% (n=410) of adolescents experienced neglect concurrently with physical and/or sexual abuse. MANOVAs and multiple regression analysis were utilized to determine the extent of externalizing or internalizing behaviours associated with each form of maltreatment.

The study found that neglect was associated with several differential effects, when compared to the experience of physical or sexual abuse. Adolescents victimized by neglect and no other forms of abuse, were more likely to have higher levels of hopelessness than physically abused adolescents, and higher levels of suicide proneness than both physical and sexual abuse victims. Neglect made a significant, independent contribution toward male ($\beta = .194$, $p = .0001$) and female ($\beta = .218$, $p = .0001$) externalizing behaviours, including hostility, delinquency, promiscuity and substance abuse. Neglect experienced an even stronger association with internalizing affects such as depression, risk and injury related behaviours and hopelessness. Neglected adolescent females ($\beta = .342$, $p = .0001$) experienced only slightly stronger correlations with internalizing affects than adolescent males ($\beta = .320$, $p = .0001$). The externalizing behaviours

and internalizing affects measured in this study were more likely to be observed when more than one form of abuse occurred at the same time. Arata et al. (2007) conclude from their examination of co-occurring forms of abuse that neglect can also act as a factor that enhances the effects associated with other forms of abuse. This may be because experiencing neglect creates an environment where children are more susceptible to abuse, or because neglect is more likely to be interpreted as a lack of care or love from the caregiver, which would affect how the victim is able to understand his/her experience of maltreatment (Ney, Fung & Wickett, 1994).

Other researchers have also found that externalizing and internalizing effects can be associated with child neglect. There are a number of noted internalizing problems, including personality disorders, anxiety, and mental health (Hidayard et al., 2002). Relationships have also been drawn between neglect and criminal involvement. Rivera and Widom (1990) illustrate that, through the examination of criminal records and records of childhood maltreatment, neglected and physically abused male children are more likely than non-abused male children to engage in criminal activity. Grogan-Kaylor and Otis (2003) conclude through a tobit-regression analysis of childhood maltreatment experiences that neglect was a more powerful predictor of antisocial and criminal behaviour than other forms of child maltreatment. All studies reviewed, however, agree that neglect is a serious and prevalent problem that warrants intervention, treatment and further consideration in child abuse research.

Overall, it can be seen that there is a large amount of work that has been done in child abuse research, but there is still much to be done to understand how and why abused adolescents interpret their victimization and engage in negative functioning problems. This study contributes to this understanding by examining the effects of child abuse in a comparative analysis that includes these five different forms of abuse. A comparative analysis is beneficial in several ways. It can illustrate if one form of abuse, in comparison to other forms of abuse, is capable of producing differential effects. This can be used to develop a better understanding of how adolescent victims interpret abuse and help service providers anticipate or diagnose problem behaviours. It also demonstrates the importance of considering poly-victimization, and the ability that each form of abuse has on the well being of victims, including forms of abuse often not considered in research, such as emotional abuse or neglect. By studying abuse's ability to comparatively predict negative functioning problems in adolescent victims, researchers and service providers can construct a better conceptualization of the abusive environment, which will help them further understand how abuse impacts adolescent victims.

2.0 Characteristics of Abuse and Victim Demographics

To understand the impact that the form of abuse experienced has on adolescents, it is important to take into consideration how the characteristics of abuse shapes the victim's experience and has an impact on his/her subsequent functioning. The quantification of abuse is a challenge that has faced researchers for some time. The National Research Council (1993) published a study in response to a request for a comprehensive review of the research area of child maltreatment and the direction of research to come. The review made several recommendations for future research, including to (a) conduct more studies on the outcomes of specific and combined types of maltreatment, and to (b) encourage the development of clear, reliable and useful definitions of child abuse and neglect that consider the impact of contextual characteristics such as chronicity and perpetrator identity.

Emerging research agrees that child abuse is a multi-dimensional experience shaped by many aspects that are important to consider to properly understand victim's outcomes (English et. al, 2005). Two of these aspects can be considered in the scope of this study: poly-victimization and chronicity of abuse. The purpose of examining these two aspects of child maltreatment is to gauge their contribution to the level of observed negative functioning in maltreated adolescents, rather than measuring aspects such as physical harm. The characteristics of these dimensions of abuse are an appropriate choice for this

study because they can be found in all five forms of abuse, and are capable of contributing to the emotional and behavioural harm to the child.⁴

2.1 Poly-Victimization

The growing pool of child abuse research is recognizing the importance of considering the co-occurrence of different forms of abuse. Even though researchers have historically studied the effects of one form of maltreatment at a time, more research is now examining the prevalence and effects of poly-victimization (e.g., Finkelhor et al., 2007; Arata et al., 2007; Ney, Fung & Wickett, 1994). Research has shown that maltreatment forms are highly pre-disposed to occurring together. The work of Higgins & McCabe (2000) demonstrated that all five abuse types (physical abuse, sexual abuse, emotional abuse, neglect and witnessing violence) were significantly correlated with each other. In this study Higgins and McCabe found through a correlation matrix that the most common combinations of co-occurring abuse types were: physical abuse and psychological maltreatment (.74), physical abuse and neglect (.63), and psychological maltreatment and neglect (.63). Although these three were the most common, all forms of abuse were significantly inter-correlated at the $p < 0.01$ or $p < .001$ levels.

⁴ There are other characteristics of abuse that could be considered to explain how the context of abuse shapes victim functioning, but were not possible to include in this study. The relationship between abuser and victim could not be included because almost all but a few abusers in the CIS-2003 are the caregivers of the victim. This is because cases are reported to child welfare services if the abuser is a caregiver. All other non-caregiver abuse cases are typically reported only to police (Trocomé et al., 2005).

Research is increasingly acknowledging the co-occurrence of child maltreatment types, but the extent of the impact of poly-victimization is still being explored. Arata et al. (2007) explored the complexities involved with multiple types of maltreatment in their examination of adolescent functioning problems from a sample of 1452 ethnically diverse adolescents from middle and high schools in Mobile, Alabama (sample described in the neglect section). The sample was analyzed to determine whether or not experiencing multiple forms of abuse created an additive effect (more or stronger symptoms) in the adolescents they studied. The authors operationalize co-occurring forms of abuse by dividing the type of abuse experienced in 9 different permutations of physical, sexual, and emotional abuse and neglect. Emotional abuse was considered when it was the only form of abuse that occurred because the authors found that emotional maltreatment was almost a universal correlate with all other forms of abuse in the study. Among other conclusions, the study supports the model of additive effects of maltreatment. Adolescents who were victimized by two types of maltreatment showed greater symptoms than those experiencing one type of maltreatment. Adolescents victimized by three types of maltreatment experienced stronger effects than those victimized by one or two types. It was concluded that experiencing multiple forms of maltreatment was more likely than single forms of abuse to predict negative effects or externalizing behaviours, making it an imperative consideration when studying the effects of child abuse and deserving of its own consideration in the understanding of how the experience of victimization impacts child functioning.

Recent research conducted by Finkelhor, Ormrod and Turner (2007) is an illustration of how experiencing poly-victimization can contribute to trauma related functioning problems. Using a representative sample of 2,030 children from the United States between the ages of 2-17, their research measured the cumulative effects of many potential victimization experiences such as: exposure to war or ethnic conflict, physical abuse by a caregiver, bullying and personal theft. These types of victimization were grouped into a total measure of poly-victimization based on the number of victimization experiences. The only exception to this continuous measure of victimization is in cases where the multiple forms of victimization occurred within the same experience. Individual episodes of maltreatment where the child experienced more than one form of maltreatment were counted as only a single type of maltreatment within the additive continuous measure of poly-victimization. Children who experienced 4 or more forms of victimization within the period of a year were classified as poly-victims, with those who experienced 4 to 6 forms were further classified as low poly-victims and those who experienced more than 7 forms were classified as high poly-victimization. Victims of certain forms of maltreatment were more likely to be included in the poly-victimized group, such as those who witnessed war or ethnic conflict, rape, or witnessing a parent assault a sibling. Children who reported experiencing one form of victimization multiple times were categorized as “chronic victims” in order to identify the difference between chronic victims and poly-victims. Regression analysis was used to determine the correlation between poly-victimization and mental health while controlling for other characteristics of

victimization. Their results showed that multiple forms of victimization is common (69% of all victims experienced more than one form) and that poly-victimization, especially in children with high levels, is a powerful predictor of symptoms. Children who are classified as poly-victims had greatly elevated levels of trauma symptoms compared to chronically maltreated children or children victimized by a single form of abuse. The greater the level of poly-victimization, the more prone the victim is to functioning problems. Finkelhor et al. conclude that poly-victimization was capable of eliminating or greatly reducing the predictive power of individual types of victimization. Such research makes it clear that poly-victimization is an important influence on victim functioning and should be considered in any study attempting to measure the relationship between child abuse and negative functioning.

Ney, Fung and Wickett's study (1994) of what combinations of child abuse produced the worst effects in maltreated children also found that the forms of abuse with the strongest impact on child functioning were those with the most forms of abuse co-occurring. They posit that this is because it creates an environment that isolates the abused child from avenues that would normally facilitate the healing process. An example they give is of a child experiencing physical neglect would then experience physical or verbal abuse when turning to his/her parents for food or warmth; the damage of neglect to the child would be further compounded. Such an environment of abuse may cyclically reinforce poor emotional functioning and negative behaviours because the abusive environment

provides little opportunity for a child to meet his/her needs for safety, his/her physical needs and to develop a positive self image.

The current research literature is in agreement that abuse often occurs in conjunction with other forms of abuse. It is also becoming evident that it is very important for future child abuse research to consider the effects of these poly-victimization and the effects they have on an abused child's emotional functioning and subsequent negative behaviour.

2.2 Chronicity of Abuse

The chronicity of the abuse can have a profound effect and may be one of the most important factors for consideration when measuring the influence of abuse on a child's behaviour. Abuse may often be thought of as a single incident, but it may also occur within the context of repeated incidents in a non-supportive and often threatening environment. The Public Health Agency of Canada (2006) notes that without intervention, often due to the case being considered not severe enough, long frequencies of abuse can produce high rates of emotional and behavioural problems in the child. Although forms of abuse such as emotional abuse and neglect may not have a large impact on the child through a single incident, it is through their frequency and gradual degradation of the child's development that they work most insidiously.

In their exploration of the operationalization and impact of chronicity, English et al. (2005) find that chronicity can significantly contribute to a variety of behavioural outcomes in abused children. The study was composed of in-depth

face-to-face interviews with 519 children and their primary caregivers from LONGSCAN; a multi-site study designed to measure the consequences of child maltreatment over time. The children chosen from LONGSCAN for this study had a median age of 8.1 years and come primarily from a poor, minority ethnic status, background from the Western United States. English and colleagues' longitudinal study examined the impact of chronicity through three different definitions: a calendar definition (the number of calendar years over which the abuse occurred), the frequency (the number of maltreatment incidents) or developmental (the current developmental period of the child). The effects of abuse were measured through three established scales; the Child Behaviour Checklist (CBCL), the Vineland Screener, and the Trauma Symptom Checklist for Children; which collectively measure a broad variety of child behaviours including anxiety, depression, anger, daily living skills as well as externalizing and internalizing behaviours. The authors conducted block-wise analysis of each form of chronicity by conducting a hierarchical regression analysis on each of the outcome variables of interest, while controlling for age, gender, minority status, income, and agency site. Overall, chronicity made a statistically significant contribution to the variance in outcomes, although the effect was slight (0.6 to 1.3%). The calendar based definition of chronicity significantly contributed to maladaptive socialization ($\beta = -1.102$, $p=.024$), depression ($\beta = .944$, $p=.026$) and posttraumatic stress ($\beta=1.032$, $p=.016$), yet it did not significantly contribute to internalizing or externalizing behaviours. The frequency definition of chronicity was a significant contributor to externalizing behaviours ($\beta = .487$, $p=.008$), the

CBCL overall($\beta = .379$, $p = .030$), depression($\beta = .596$, $p = .008$) and post-traumatic stress ($\beta = .477$, $p = .026$).

The connection between chronicity and increased impact or number of symptoms is also supported by other studies. In a longitudinal examination of chronic childhood maltreatment, Éthier, Lemelin and Lacharité (2004) found that children who were chronically abused were more likely than children abused over a short period of time to display a level of behavioural or emotional problems that was diagnosable at a problematic or clinical level. By the third time that child functioning was measured, 75% of children who were chronically abused were displaying at least one form of problem behaviour from the CBCL (Achenbach, 1991a), compared to 29% of children who had been abused but were transitioning into more stable lives. The authors conclude that the chronicity of maltreatment is an important variable that must be considered in studies examining the link between child abuse and the subsequent emotional and behavioural outcomes of the victim.

2.3 Victim Gender

Past literature has demonstrated that gender is a very important demographic to consider when examining the impact of maltreatment on youth's coping and behavioural responses. When faced with the complex and traumatizing experience of victimization, the important social influence of gender has the potential to influence how male and female adolescents cope with and express their experiences. Past research often finds that gender predisposes

adolescents functioning reaction to victimization (Eschenbeck et. al., 2007, Leadbeater, Blatt & Quinlan, 1995, Blatt et al., 1993).

A study conducted on the influence of gender on the relationship between child maltreatment and externalizing and internalizing problems (Maschi et al., 2008) concluded from their data that gender differences did lead to differential pathways of behaviour. The sample consisted of 300 New York State youth between the ages of 5 and 11. Over half of the youth had been maltreated (56%) and the majority of the sample were male (63%) and of African-American descent (59%). Data on maltreatment, functioning and psychiatric symptoms were gathered from the children, their parents, camp counselors, children's peers, and case records from child protective services. Through structural equation modeling, the researchers found that there were specific pathways of externalizing and internalizing behaviours dependent on victim gender. Although there was a direct relationship between child maltreatment and externalizing behaviour among boys, girl's internalizing symptoms mediated the link between child maltreatment and externalizing behaviour. They conclude that gender does exert a significant influence on how child and adolescent victims process their experience and that future programming for victimized children needs to focus on these gender differences for early identification and intervention.

In a study by Wall et al. (2005), the cases of children who were reported for child maltreatment were studied to determine the factors that influenced adolescent aggression and delinquency, including gender. The data were from the first wave of the National Survey of Child and Adolescent Well-Being

(NSCAW) that is collected from 92 primary sampling units in 36 states, 4 times over the course of three years and was weighted to be representative of child maltreatment cases in the U.S. The 739 adolescents in the sample ranged from 11 to 15 years old and 57% were female. The forms of maltreatment that were included in this sample were physical abuse, sexual abuse and neglect. The Youth Self Report (Achenback, 1991b) construction of externalizing behaviours was used to measure aggressive and delinquent behaviour. Regression analysis was used to examine, among other things, whether gender differences existed in aggressive and delinquent behaviour, or risk factors associated with such behaviour. The study found that adolescent males and females in the child welfare system were not influenced by the maltreatment type and studied risk factors, so a regression model was run with gender as an additional independent variable. It was found that one-third of the variance in externalizing behaviours was explained by gender. Males were associated with significantly less externalizing behaviours ($\beta = -3.32, p < .01$) compared to females. After controlling for the type of abuse, demographic variables, as well as child and family risk factors, females were significantly more likely to engage in delinquency and aggressive acts than males. The authors suggest this result, which contradicts previous research that says males are more likely to engage in externalizing and females will exhibit internalizing, may be attributed to increasing female violent behaviour seen in the juvenile justice literature (Wall et. al., 2005). Such a finding emphasizes the need for increased attention to females in the child welfare

system so they have equal and focused access to programs that can help them address potential future externalizing behaviours.

All research on the impact of gender differences indicates that it is an important demographic to consider when examining the relationship between type of abuse and externalizing and internalizing behaviours. Understanding its role can also help researchers and service providers anticipate and respond to important and possible victim needs for diagnoses and programming.

2.4 Aboriginal Identity

Any study conducted with Canadian data should consider the unique impact that aboriginal identity may play on determining if victimized adolescents develop externalizing or internalizing symptoms. Aboriginal communities and youth face a devastating history, and have future challenges, that stem from colonization (MacNeil, 2008). A long history of residential schools, poverty, abuse, lack of culturally based prevention services, and over-representation in the child welfare and criminal justice systems have led to a population of children and adolescents that face disproportionately high rates of suicide, sexual abuse, incarceration, poverty, unemployment, and low rates of educational success (Blackstock et al., 2004). Overall, the aboriginal population is prone to be more vulnerable to many behaviours that fall under the categories of externalizing and internalizing, including involvement in the criminal justice system (Brzozowski, 2006), gang and negative peer involvement (Totten, 2009), substance abuse (Coleman, 2001), and suicide (Chandler, 2003).

One current area of social research that investigates the unique background and challenges of aboriginal people is the criminal justice literature. Because of aboriginal people's unique social background in Canada, they face an increased chance of being involved in the criminal justice system as both victims and offenders (Brzozowski, 2006). According to data from the Youth Custody and Community Services Survey (YCCS) in 2003/04, aboriginal youth had high rates of admission to all types of correctional services. Although aboriginal youth represented approximately 5% of the population in the studied area, they comprised approximately one-fifth of all admissions to custody and 12% admissions to probation (Brzozowski, 2006).

Suicide is another epidemic facing aboriginal youth and rates are higher compared to the general population. Canadian Aboriginal Youth have the highest rate of suicide compared to any other identified culture in the world (Chandler, 2003). In 1995 the Royal Commission on Aboriginal People (Chenier, 1995) reported that aboriginal adolescents between the ages of 10 and 19 are 5 times more likely to die from suicide than non-aboriginal adolescents in Canada. Chandler et. al (2003) conducted an examination of suicides within the province of British Columbia to estimate the prevalence of suicide rates among aboriginal youth. Data on suicides from 1987 to 1992 were gathered from the Office of the Chief Coroner of British Columbia, including information on every victim's age, gender, place of death, date of death, First Nations membership, cause and means of death and any associated factors such as drugs or alcohol. The authors found that the suicide rate among aboriginal people was more than three

times higher than it was for the total populations. The rate among Native youth was even higher; five times higher than all youth in general. Further examination suggests that aboriginal status itself was not the determinant of suicide since variability in suicide rates across different First Nations communities were very different. Many First Nations communities recorded no suicides, but in contrast, others recorded many. Chandler et. al (2003) determined that six community markers were determinant of whether aboriginal suicide problems existed in the community: self-government, land claims, education, health services, cultural facilities and police/fire services. The more services and support the community had, the less likely they were to have youth suicides. This trend was confirmed from the second wave of data collection from 1993 to 2000; communities that had no protective factors had greater suicide rates than First Nations communities with multiple markers. This study demonstrates that although it can be observed that aboriginal persons, especially youth, have greater rates of suicide, it is the social context they live in that determines their risk.

The research demonstrates that aboriginal identity is an important demographic variable to consider in a Canadian study, given aboriginal people's unique history and challenges. Aboriginal adolescents face challenges in regard to not only increased risk of victimization (Brzozowski, 2006), but also potential discrimination, economic disadvantages, lack of resources and lack of community support that exposes them to additional risks of engaging in externalizing and internalizing behaviours. It is seen through the statistics on

crime, suicide and drug use that aboriginal adolescents may have unique needs that require special considerations and programs.

The development of a comprehensive understanding of child abuse, its contextual characteristics, and how abuse impacts negative functioning in adolescents is a complex task. This study contributes to this development because it considers some very important demographic and contextual characteristics that are capable of impacting functioning symptoms, and may moderate the relationship between the form of abuse and type of negative functioning. The analysis is designed to determine the influence that gender, aboriginal identity, chronicity, and poly-victimization have on the externalizing and internalizing symptoms of abused adolescents.

3.0 Methods and Measurement

3.1 Sampling

This study utilizes data collected from the Canadian Incidence Study of reported Child Abuse and Neglect 2003 (CIS-2003). The CIS-2003 is the second iteration of a nationwide study of reported child maltreatment cases investigated by 63 Child Welfare Jurisdictions across Canada. Agencies were selected within each jurisdiction using a stratified cluster design. The purpose of the survey is to determine the rates of investigated and substantiated cases of child maltreatment, the harm caused by the maltreatment, and the determinants of health that may be associated with maltreatment (Trocomé et al, 2005). Data were collected from 11,562 child maltreatment cases between the ages of 0 and 15 years, including 2,876 adolescents between the ages of 12 and 15 years. Maltreatment assessment forms were completed by the primary investigating worker at the end of every child welfare investigation in the fall of 2003. The data from these cases were weighted to represent the number of cases that occur annually in Child Welfare Agencies. Regional weights were also used to reflect the child population of the site as a proportion of the child population for that region. Once these weights were applied, the data represented 217,322 child welfare cases across Canada, of which 53,137 involve adolescents.

The data were collected between October 1, 2003 and December 31, 2003 in all child welfare jurisdictions other than Quebec. Child investigations from Quebec were taken from cases opened between November 1 to December 15, 2003 and January 15th and February 28, 2004. Cases from these time periods

were examined to select those that fit the CIS-2003 definitions of maltreatment. The final collection of child welfare cases included data from at least one agency in every province and territory in Canada.

The primary child welfare investigator was trained to properly use the forms and procedures by the Principal Investigator, Co-Investigator, or Study Manager of the CIS-2003. Child welfare workers were instructed to complete the Maltreatment Assessment Form at the same time they composed their first assessment report. Participation rate was estimated by comparing the number of actual cases opened during the case selection period with the number of completed child maltreatment forms. At agencies for which rates could be estimated, participation levels were an average of 93%, with rates ranging from 62% to 100%. Cases with low participation rates were attributed to external events such as staff turnover or holiday hours. No evidence of systematic bias could be found by the CIS-2003 Investigators (Trocomé et al, 2005).

The Child Maltreatment Form was designed to capture a variety of information about the child, his/her abuse experience, the home and community he/she lives in, and any functioning problems exhibited. The variables that shape the analysis of this study are discussed in the following sections.

3.2 Measures

This study assesses the emotional and behavioural impact of abuse and the context in which abuse occurs through the use of logistic regression models. Because Achenbach's (1991a) model of externalizing and internalizing

functioning has been validated by a number of studies (see Dedrick, Greenbaum, Friedman, Wetherington & Knoff, 1997; McGee, Wolfe & Wilson, 1997) as well as supported by the Brack, Brack and Orr (1994) study that looked specifically at adolescents from 12 to 16 years of age; the two dependent variables, behavioural (external) and emotional (internal) functioning, are constructed according to the structure of Achenbach's (1991a) model.

3.2.1 dependent variables.

Externalizing and Internalizing Behaviours

Child functioning was documented in the CIS-2003 by a checklist of problems developed by child welfare workers and researchers that reflect common concerns that could arise in the course of a child welfare investigation. Although several instrument measurements exist to document functioning problems of abused children, they are not used because they are not consistently used in child welfare settings and were not feasible for the CIS (Trocomé et al, 2005, pg. 66). The checklist is intended to document all problems that child welfare investigators become aware of through the course of the investigation and includes problems that were formally diagnosed, directly observed, or suspected. Since the variables only included behaviours observable to the child welfare investigator, they may not include as many behaviours as could be found through an administered research instrument. The behavioural and emotional functioning measures (Trocomé et al, 2005, pg. 67) used in this study are outlined in Table 5.

Table 5: Functioning Problems from CIS-2003

CBCL Classification	Functioning Problem	Symptoms of Problem
Externalizing	Youth Criminal Justice Act involvement	Involved in charges, incarceration or alternative measures that are associated with the youth justice system.
Externalizing	Negative peer involvement	Involved in high-risk peer activities such as gang activities, graffiti or vandalism.
Externalizing	Alcohol abuse	Problematic consumption of alcohol, with consideration given to age, frequency and severity
Externalizing	Drug/solvent abuse	Used prescription drugs, illegal drugs or solvents
Externalizing	Violence towards others	Displayed aggression and violence toward other children or adults.
Externalizing	Running away	Ran away from home (or other residence) on one or more occasions for a period longer of one night or longer.
Externalizing	Inappropriate sexual behaviour	Been involved in inappropriate sexual behaviour.
Externalizing	Irregular school attendance	Displayed irregular attendance and truancy, for a period of at least 5 days/month.
Internalizing	Depression / anxiety	Feelings of depression or anxiety that persist for most of the day, for two weeks or longer, and interfere with the child's ability to manage his/her life at home or school.
Internalizing	Self-harming behaviour	Engaged in high risk or life threatening behaviour such as suicide attempts, physical mutilation or cutting.
Internalizing	Psychiatric disorder	A psychiatrist has diagnosed a psychiatric disorder such as conduct disorder or anxiety disorder.

These functioning problems are coded into 2 dummy-coded variables according to Achenbach's (1991a) classification of functioning problems into externalizing and internalizing behaviours. Any adolescent exhibiting a symptom will be coded as 1 for the presence of a symptom, or 0 if there are no symptoms present.

3.2.2 independent variables.

Several important variables are necessary for this study of abuse and negative functioning: the form of abuse, demographic variables, and the characteristics of abuse (Trocomé et. al., 2005). The impact of all these variables and how the characteristics of abuse may contribute or regulate the relationship between abuse and functioning problems is an important contribution to understanding how the complex and multi-faceted experience of abuse has an impact on the behavioural and psychological well-being of an abused adolescent.

3.2.2.1 abuse variables.

The CIS-2003 captures information from investigated child abuse cases using 25 different forms of maltreatment classified into 5 separate categories of abuse; physical abuse, sexual abuse, emotional maltreatment, neglect, and exposure to domestic violence. Abuse was recorded whether it was substantiated, suspected (not enough evidence but maltreatment cannot be ruled out) or unsubstantiated. This choice to use all allegations that are not disproven is supported by multiple researchers who contend that both suspected and

confirmed abuse represent the maltreatment experiences of children (Litrownik et. al., 2005). Empirical studies also support this through the conclusion that the functioning did not differ depending on the level of substantiation of youth abuse cases (Hussey et. al., 2005). This study will therefore consider the cases of abuse that were considered either substantiated or suspected. The abuse variables are dummy-coded as either 1 (victimized) or 0 (not victimized).

3.2.2.1.1 physical abuse.

Physical abuse was determined to have occurred, according to the CIS-2003, if the investigated child was suspected to have suffered, or to be at substantial risk of suffering, physical harm at the hands of his/her caregiver. The category of physical abuse includes acts such as: shaking, pushing, grabbing, pulling, dragging, punching, kicking, biting, hitting with an open hand, choking, stabbing, burning, shooting, poisoning, striking with an object, and/or abusive use of restraints.

3.2.2.1.2 sexual abuse.

The CIS-2003 tracked many different forms of possible sexual abuse⁵. If the child suffered from several forms of sexual abuse, the investigator was to identify which form was the most intrusive. The types of abuse that fall under the

⁵ The CIS-2003 only collects data from child abuse cases that were reported to Child Welfare Services. Many cases of child sexual abuse in the CIS-2003 therefore only involve a parent or relative inside the home because extra-familial cases are often investigated solely by the police. Child Welfare Service typically become involved in extra-familial sexual abuse cases if there are concerns regarding the parent's ability to protect the child.

category of sexual abuse include: penetration, attempted penetration, oral sex, fondling, sex talk, voyeurism, exhibitionism, or exploitation.

3.2.2.1.3 neglect.

Child neglect involves all cases where the child's safety and development are jeopardized or they suffer harm as a result of a caregiver's failure to provide for, or protect, him/her. The cases were classified as neglect if the child was harmed or if the child was at a substantial risk to be harmed. The CIS-2003 included 8 different forms in their definition of child neglect, including acts of: failure to supervise or protect leading to physical harm, failure to supervise or protect leading to sexual abuse, neglecting physical needs, failure to provide medical treatment, failure to provide necessary psychological/psychiatric treatment, permitting criminal behaviour, educational neglect, or abandonment. Overall, child neglect was the most commonly investigated form of maltreatment in the CIS-2003.

3.2.2.1.4 emotional maltreatment.

Emotional maltreatment is often a difficult form of maltreatment for researchers and child welfare workers to document because the symptoms often take a long time to manifest and the act of abuse cannot be classified through a single incident or characterized by a physical injury, making it intrinsically chronic in nature. Three forms of emotional maltreatment of adolescents are included in the CIS-2003:

- Emotional abuse where the child has suffered from, or is at substantial risk of mental, emotional or developmental problems as a result of overtly hostile/punitive treatment or habitual or extreme verbal abuse.
- Emotional neglect where the child has suffered or is at risk of suffering from mental, emotional or developmental problems as a result of inadequate affection and nurturing.
- Exposure to violence in the child's home, not including intimate partner violence.

3.2.2.1.5 exposure to domestic violence.

Exposure to domestic violence is often classified as a form of emotional maltreatment, however, there is growing awareness of the differential effects this exposure can have on children. The inclusion of exposure to domestic violence as its own category of child abuse reflects this growing awareness, and the increasing number of policies across Canada designed to protect exposed children. The CIS-2003 operationalizes exposure to domestic violence as any incidence where a child has been exposed to violence occurring between his or her caregivers, or the caregiver and his/her partner. This includes indirect witnessing where the child sees the physical injuries after a violent incident or overhears the violence.

3.2.2.2 demographic variables.

It is important in any study to consider the demographic variables that could influence a person's behaviour, lifestyle, or way of perceiving and rationalizing life events. The variables that are considered in this study are age, gender, and aboriginal identity.

Although the CIS-2003 captures information from all children 15 years of age or younger, this study focuses on adolescents between the ages of 12 to 15 years old. According to authors who consider the importance of developmental psychopathology (Manly, 2005), the development period of the child is an essential component in determining the impact of maltreatment. Because this study measures the effects of abuse on behavioural and emotional problems, it is important that the children in the study have a similar level of opportunity to engage in negative functioning problems such as substance abuse.

The study will consider the impact that the remaining demographic characteristics have on the sample of adolescent victims. In the weighted sample, 53% of the maltreated adolescents between 12 and 15 are female. Fifteen percent of all children in the sample have aboriginal heritage, including Status First Nations, Non-Status First Nations, Métis, or Inuit heritage. This is high compared to the 2001 Canadian Census, which found that 4.4% of the population of Canada had some aboriginal ancestry (Statistics Canada, 2001).

3.2.2.3 characteristics of abuse

3.2.2.3.1 poly-victimization.

Each case can include up to three forms of abuse. The primary form is determined to be the form of abuse that best characterizes the investigated maltreatment. If one form of maltreatment was judged to be substantiated, but another form in the same case was not, the substantiated case was selected as the primary form of abuse. In the CIS-2003, 81% of all cases of substantiated maltreatment identified only one form of abuse⁶. One fifth of investigations (20%) involved more than one form of maltreatment. The data in the CIS-2003 does not indicate if the abuses occurred simultaneously or within a certain time frame of each other, so it can only be assumed that the second or third form of abuse was discovered within the course of the maltreatment investigation. Poly-victimization is dummy-coded as either a single form of abuse (0), or maltreatment where more than one form of abuse was recorded as having occurred (1).

3.2.2.3.2 chronicity.

The chronicity of maltreatment was quantified into two different possibilities: a single incident of abuse, and multiple incidents. Even though some forms of abuse are more likely to be characterized by higher frequencies, such as neglect and emotional abuse, each form of abuse contained a proportion

⁶ Trocomé et al (2005, pg. 35) note that most provincial and territorial case classification systems track only one form of maltreatment that may lead to under-reporting of the occurrence of multiple forms of abuse in the CIS-2003

higher than 10% for both categories of chronicity. Emotional maltreatment and neglect had the highest proportion of cases that had more than one occurrence (73% and 59% respectively). Conversely, physical abuse and witnessing domestic violence were more likely to be characterized as a single incident (49% and 27%) than the other forms of abuse. The chronicity variable is coded as having two possible values: one incident (0), or more than one incident (1).

3.3 Sample Description

The frequencies for the sample's variables are reported in Table 6 below. Over half (56%) of the sample engaged in some form of externalizing behaviour and 38% exhibited internalizing symptoms. Forty-three percent of the adolescents were physically abused, 35% were neglected, 36% were emotionally abused, 22% were exposed to domestic violence and 6% were sexually abused.

Table 6: Descriptive Statistics

<i>n</i> = 1,797*	%
Age	
12	24.8
13	26.2
14	25.3
15	23.7
Gender	
Female	53.9
Aboriginal Status	
Aboriginal identity	11.8
Type of Abuse Experienced**	
Physical	43.2
Sexual	6.3
Emotional	35.7
Neglect	34.9
Exposure to domestic violence	21.8
Poly-Victimization	
Experienced two or more forms of abuse	36.7
Multiple Incidents of Abuse	
Multiple incidents of the abuse occurred	61.5
Negative Functioning	
Externalizing behaviours	55.9
Internalizing behaviours	38.4

*Sample is weighted (weighted $n=32,500$). Only frequencies based on the weights are presented.

**Will not sum to 100% because some adolescents experienced more than one form of abuse.

Of all abused adolescents, 62% of the abuse was more than a single incident, and over one third (37%) experienced poly-victimization.

3.4 Analytical Procedures

As outlined in the introduction, the purpose of this analysis is to examine how the type of child abuse, the characteristics of the victimization, and the demographics of the victim are correlated with the victimized adolescent's negative functioning. To accomplish this, multivariate logistic regression models were prepared to test whether relationships exist between abuse and negative functioning, which will be Model 1 of the analysis. Model 2 will be divided into two different models. Model 2a will build upon the relationships explored in Model 1, but will also include chronicity, gender and aboriginal identity as independent variables to test for possible spuriousness among the type of abuse variables. Model 2b will be of a similar nature, but will examine poly-victimization rather than chronicity. The third and final set of models build upon this structure and will include all of the independent variables and a series of interaction terms, made up of the type of abuse and the contextual variables, to assess the impact chronicity and poly-victimization have on negative functioning. To ensure that the sample is statistically representative, the study uses weighting and bootstrapping to counteract the non-random sampling design of the CIS-2003. The CIS-2003 provides weights within the dataset that will be used to make the data statistically representative of the Canadian population for an entire year of child maltreatment investigations. Bootstrapping is used to counteract for the effects of stratification and clustering on the variation of the sample.

The two dependent negative functioning variables of externalizing and internalizing behaviours will be organized so that functioning problems such as

violence towards others and negative peer involvement represent externalizing behaviour problems and problems such as anxiety and self-harming behaviour represent internalizing problems (Achenbach, 1991a). Externalizing and internalizing behaviours will be coded as either present (1) or not present (0) in the adolescent victim.

A logistic regression will be used to determine which form of maltreatment is the best predictor of variance in internalizing or externalizing behaviours.

Logistic regression is the most logical choice for analysis because of the dichotomous structure of the available data. A logistic regression is appropriate for use when the dependent variable (negative functioning) is dichotomous; the independent variables can be either dichotomous or continuous (Tabachnick & Fidell, 2001). The logistic regression will assess the log odds that an event will occur by assessing which independent variables are the best predictors of the dependent event.

The first regression model (see Figure 1) tests whether or not the type of abuse will have a positive effect on externalizing or internalizing behaviours in abused adolescents.

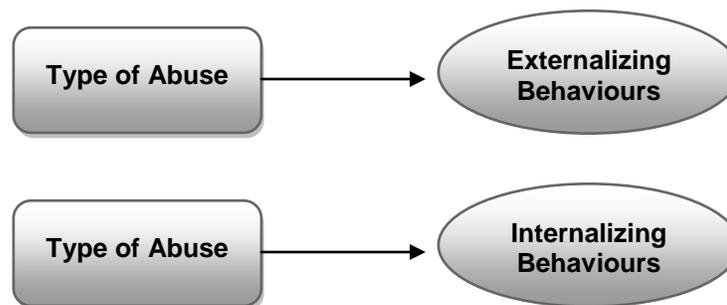


Figure 1: Model 1 - Abuse and Negative Functioning

The second set of models (see Figure 2) will examine how characteristics of abuse and demographics contribute to the prediction of functioning problems and if they moderate the previously observed relationships in Model 1.

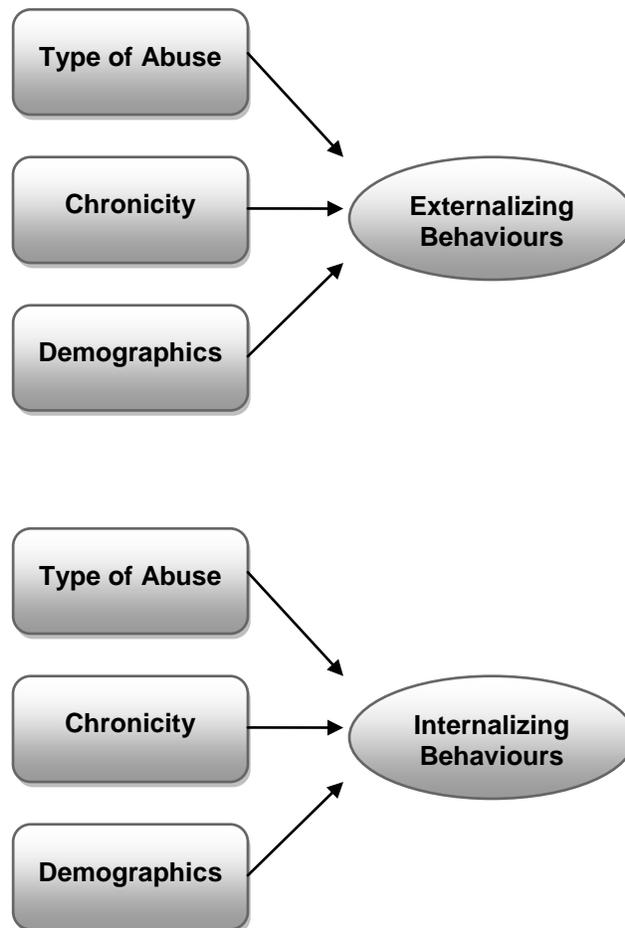


Figure 2. Model 2a - Abuse, Chronicity and Demographics.

Figure 3 illustrates Model 2b, which follows the same structure as Model 2a, but measures the effects of poly-victimization rather than chronicity.

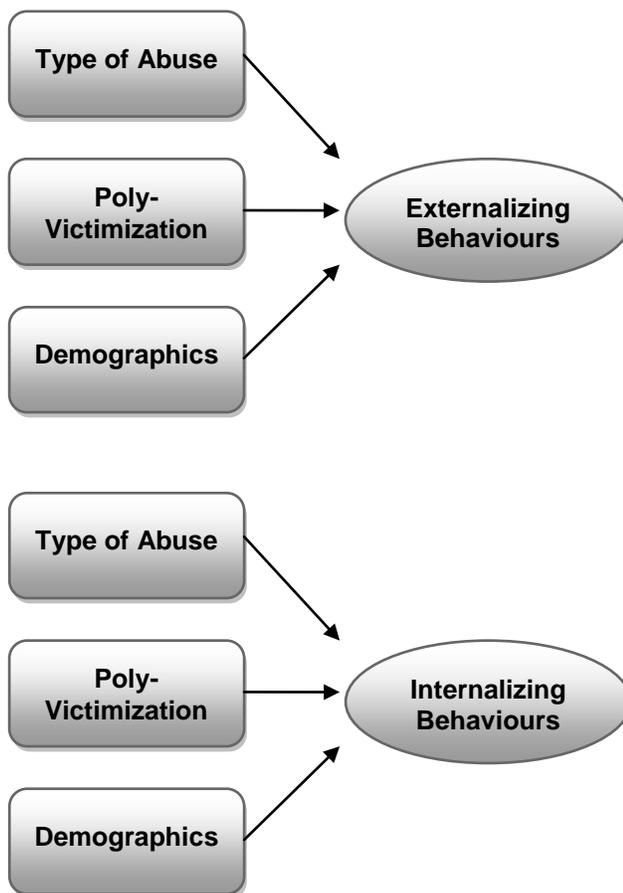


Figure3: Model 2b - Abuse, Poly-victimization and Demographics.

The final and third part of the logistic regression analysis (see Figures 4 and 5) will be to examine if interactions between the characteristics of abuse and abuse types affect the correlation between type of abuse and negative functioning. In this model, interaction terms will be created between the forms of abuse and the characteristics of abuse (poly-victimization and chronicity).

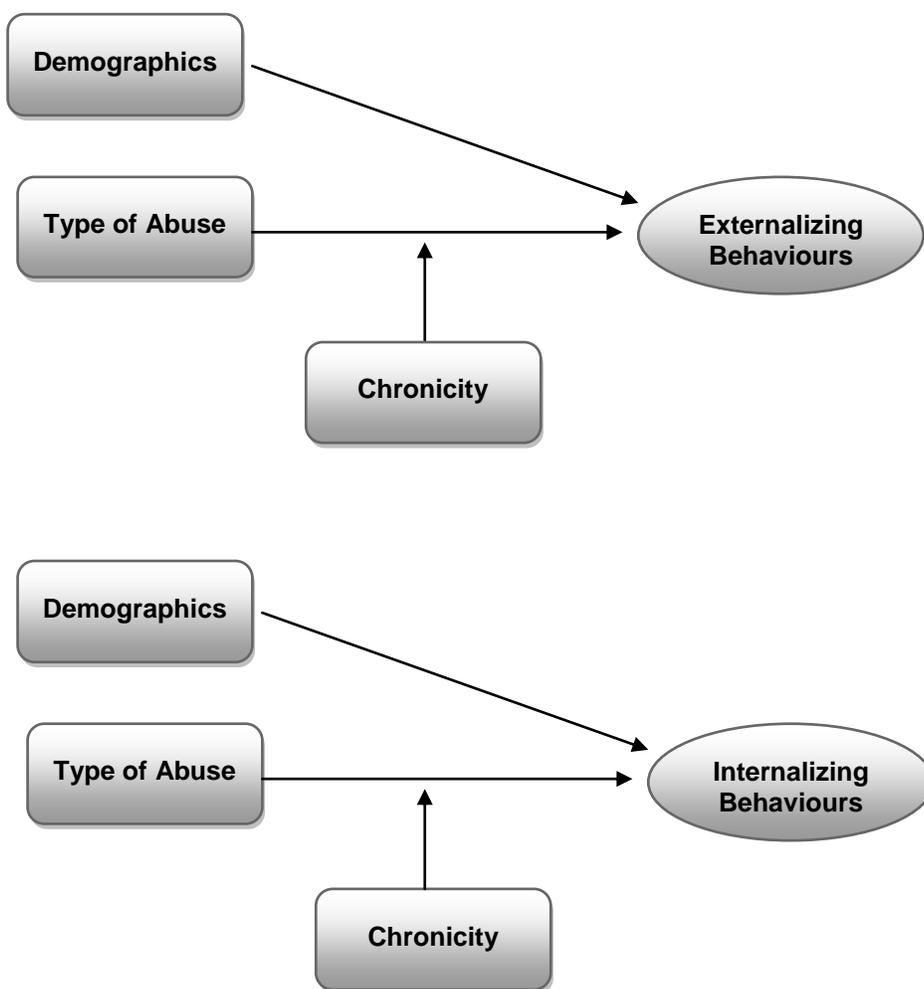


Figure 4: Model 3a - Interaction Terms for Abuse Type and Chronicity

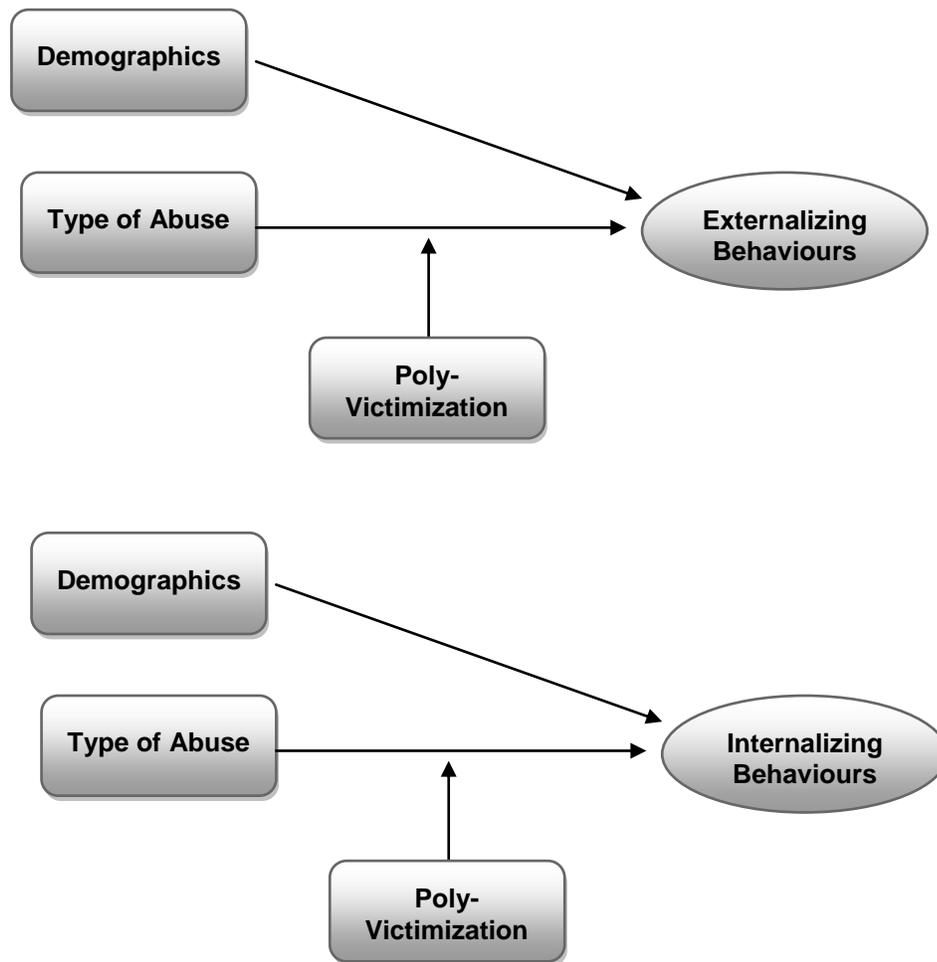


Figure 5: Model 3b - Interaction Terms for Abuse Type and Poly-Victimization

The third set of models will provide insight into how much of an effect the characteristics of abuse have on the relationship between type of abuse and negative functioning. This final step will be a regression that includes all independent variables, and an interaction term composed of the type of abuse and the variables that describe the context of that abuse: chronicity and poly-victimization.

Through the use of these three sets of models, this analysis fulfills the two questions meant to guide this thesis: if the form of abuse is correlated with the

form of negative functioning observed in adolescents, and whether the occurrence of poly-victimization, and chronicity moderate the relationship between form of abuse and negative functioning.

4.0 Results

4.1 Model 1: Abuse and Negative Functioning

The first model of this multi-step analysis explores if there is a connection between the forms of abuse experienced and negative functioning in abused adolescents. The results of this first model are shown in Table 7. The results indicate the change in logged odds of both externalizing and internalizing behaviours correspond with an increase or decrease of standardized units of a type of abuse, while controlling for other forms of abuse in the model.

More specifically, Model 1 demonstrates that, compared to all other forms of child abuse, neglect and physical abuse are the best predictors of externalizing behaviours in adolescents. The positive coefficient of neglect demonstrates that experiencing neglect increases the logged odds of externalizing behaviours. As Table 7 indicates, neglected adolescents are 2.46 ($p < .001$) times more likely than adolescents who have not experienced neglect to exhibit externalizing problems. Physically (1.30, $p < .001$) and emotionally (1.08, $p < .001$) abused children also increased the prediction of adolescent externalized functioning problems, compared to sexually abused adolescents and those exposed to domestic violence, who had negative coefficients.

Emotional abuse, sexual abuse, and neglect all have a positive effect on internalizing problems in adolescents, compared to physical and exposure to domestic violence (see Table 7). Adolescents who are emotionally abused are 2.41 ($p < .001$) times more likely to display internalizing problems. Youth who are

victimized by sexual abuse are 1.89 times more likely ($p < .001$) to have internalizing problems. Neglect (1.42, $p < .001$) also slightly increased the chances of internalizing behaviours in youth, but not as strongly as emotional and sexual abuse. Physical abuse and exposure to domestic violence did not have a positive effect on internalizing behaviours in the first model.

Table 7: Model 1

Variables	Externalizing				Internalizing			
	<i>b</i>	Odds Ratio	95%CI		<i>b</i>	Odds Ratio	95%CI	
			lower	upper			lower	upper
Physical abuse	0.26	1.30***	1.23	1.38	-0.09	0.91**	0.86	0.97
Sexual abuse	-0.35	0.70***	0.64	0.78	0.63	1.89***	1.70	2.07
Neglect	0.90	2.46***	2.32	2.61	0.35	1.42***	1.34	1.50
Emotional abuse	0.07	1.08**	1.02	1.14	0.88	2.41***	2.29	2.54
Exposure to domestic violence	-0.92	0.40***	0.38	0.43	-0.29	0.75***	0.70	0.80
<i>Pseudo R²</i>								
<i>Cox & Snell R square</i>	0.09				0.05			
<i>Nagelkerke R square</i>	0.12				0.07			
Total	<i>n</i> =	32,306			<i>n</i> =	32,306		

* $p = .05$, ** $p = .01$, *** $p = .001$

To summarize the results of Model 1, most forms of abuse did increase the chances of predicting negative functioning behaviours. When controlling for all other forms of abuse however, exposure to domestic violence did not have a positive effect on internalizing or externalizing behaviours compared to other forms of abuse. Neglect and physical abuse gave the highest logged odds of externalizing behaviours; emotional abuse and sexual abuse were the strongest predictors of internalizing behaviours.

4.2 Model 2: Demographics and Abuse Characteristics

The purpose of the second set of models was to determine what influence demographic and abuse characteristics have on the relationships between abuse and adolescent negative functioning. Model 2a includes the independent variables gender, aboriginal identity, and chronicity. Model 2b examines the effect of introducing gender, aboriginal identity, and poly-victimization.

The introduction of chronicity, gender, and aboriginal identity in Model 2a altered the previous model's ability to predict externalizing and internalizing behaviours in abused adolescents. In the first model, the forms of abuse that had the greatest ability to increase the logged odds of predicting externalizing behaviour were neglect and physical abuse. However, in Model 2a, aboriginal identity had the strongest ability to predict externalizing behaviours; abused aboriginal youth were 2.72 ($p < .001$) times more likely to engage in externalizing behaviours than non-aboriginal victims. Neglect (logged odds of 1.98, $p < .001$), chronicity (1.76, $p < .001$), physical abuse (1.54, $p < .001$), and gender (1.28, $p < .001$) all had a positive effect on significantly predicting the presence of externalizing behaviours in abused adolescents as well. Sexual abuse, emotional abuse, and exposure to domestic violence all had negative coefficients, meaning that compared to other forms of abuse, they did not have a positive effect on the prediction of externalizing behaviours in Model 2a compared to the other independent variables in the model. Emotional abuse had the highest logged odds (2.11, $p < .001$) of predicting Internalizing behaviours in Model 2a. Chronicity (1.83, $p < .001$), sexual abuse (1.65, $p < .001$), gender (1.40, $p < .001$), and neglect

(1.38, $p < .001$) also had a positive effect on internalizing behaviour in Model 2a. Physical abuse and exposure to domestic violence had negative coefficients when compared to the other forms of abuse and demographics. Aboriginal identity had no significant ability to predict internalizing behaviours in abused adolescents.

Table 8: Model 2a – Demographics and Chronicity

Variables	Externalizing				Internalizing			
	<i>b</i>	Odds Ratio	95%CI		<i>b</i>	Odds Ratio	95%CI	
			lower	upper			lower	upper
Physical abuse	0.43	1.54***	1.44	1.64	-0.04	0.96	0.90	1.02
Sexual abuse	-0.58	0.56***	0.50	0.62	0.50	1.65***	1.48	1.84
Neglect	0.68	1.98***	1.85	2.11	0.32	1.38***	1.30	1.47
Emotional abuse	-0.06	0.94*	0.88	0.99	0.75	2.11***	1.99	2.24
Exposure to domestic violence	-1.09	0.34***	0.31	0.36	-0.37	0.69***	0.65	0.75
Gender	0.24	1.28***	1.21	1.34	0.34	1.40***	1.33	1.48
Aboriginal identity	1.00	2.72***	2.49	2.98	0.01	1.01	0.94	1.10
Chronicity	0.56	1.76***	1.66	1.86	0.61	1.83***	1.73	1.94
<i>Pseudo R</i> ²								
<i>Cox & Snell R square</i>	0.12				0.08			
<i>Nagelkerke R square</i>	0.16				0.11			
Total	<i>n</i> =	26,928			<i>n</i> =	26,928		

* $p = .05$, ** $p = .01$, *** $p = .001$

Model 2b examined the influence of poly-victimization, gender, and aboriginal identity on the relationship between the forms of abuse and functioning problems in abused adolescents. Similar to results from Model 2a, the strongest predictor of externalizing behaviours in Model 2b was aboriginal identity; aboriginal youth were 3.23 ($p < .001$) times more likely to participate in a form of externalizing behaviours. Poly-victimization (1.75, $p < .001$) and gender (1.23, $p < .001$) also had a positive effect on externalizing behaviours. The introduction of

these variables into Model 2b reduced the logged odds of neglect predicting externalizing behaviours compared to Model 1, dropping from an logged odds ratio of 2.46 ($p<.001$) to 1.47 ($p<.001$). Although physical abuse significantly predicted externalizing behaviours in Model 1, in Model 2b, the relationship between physical abuse and externalizing behaviours was not significant.

Table 9: Model 2b – Demographics and Poly-Victimization

Variables	Externalizing				Internalizing			
	<i>b</i>	Odds Ratio	95%CI		<i>b</i>	Odds Ratio	95%CI	
			lower	upper			lower	upper
Physical abuse	-0.11	0.90	0.79	1.00	-0.28	0.75***	0.67	0.85
Sexual abuse	-0.85	0.43***	0.34	0.49	0.36	1.44***	1.25	1.66
Neglect	0.39	1.47***	1.30	1.66	0.15	1.16*	1.03	1.30
Emotional abuse	-0.38	0.68***	0.60	0.77	0.67	1.96***	1.74	2.20
Exposure to domestic violence	-1.41	0.24***	0.22	0.28	-0.48	0.62***	0.55	0.70
Gender	0.21	1.23***	1.18	1.29	0.24	1.27***	1.21	1.33
Aboriginal identity	1.17	3.23***	3.98	3.50	0.14	1.15***	1.07	1.23
Poly-victimization	0.56	1.75***	1.52	2.01	0.26	1.30***	1.14	1.49
<i>Pseudo R</i> ²								
<i>Cox & Snell R square</i>	0.12				0.05			
<i>Nagelkerke R square</i>	0.16				0.08			
Total	<i>n</i> =	26,928			<i>n</i> =	26,928		

* $p=.05$, ** $p=.01$, *** $p=.001$

Even though three significant independent variables were introduced in Model 2b, the strongest predictor of internalizing behaviours in abused youth continues to be emotional abuse, although the logged odds did slightly decrease from 2.41 ($p<.001$) to 1.96 ($p<.001$). The logged odds for sexual abuse 1.44 ($p<.001$) and neglect (1.16, $p<.001$) also decreased, but remained significant. Being female (1.27, $p<.001$), having an aboriginal identity (1.15, $P<.001$), and

poly-victimization (1.30, $p < .001$) were also small, but significant predictors of internalizing behaviours in Model 2b.

To summarize Model 2's results, aboriginal identity was the strongest predictor of externalizing behaviours in Model 2a (chronicity) and Model 2b (poly-victimization). Neglect, gender, chronicity, and poly-victimization also had a positive effect on externalizing behaviours. Although physical abuse had a positive effect on externalizing behaviour in Model 2a, when poly-victimization was examined in Model 2b, physical abuse's coefficient became negative. Sexual abuse, emotional abuse and exposure to domestic violence had a negative effect on externalizing behaviours in Models 2a and 2b. Emotional abuse had the highest logged odds of predicting internalizing behaviours in Models 2a and 2b. Sexual abuse, neglect, gender, chronicity, and poly-victimization also had a positive effect on internalizing behaviours in both of the second set of models. Although aboriginal abuse was the strongest predictor of externalizing behaviours, it did not significantly predict internalizing behaviours in Model 2a, but had small logged odds in Model 2b. Physical abuse and exposure to domestic violence had a negative effect on internalizing behaviours in both Model 2a and 2b, compared to the other independent variables.

4.3 Models 3a and 3b: Interaction Effects

The third model is designed to determine if any interaction between abuse and the characteristics of abuse can alter the relationships between the dependent and independent variables of the second model. Two different

interaction models were created under the assumption that some forms of abuse may be more likely to be chronic or occur in the presence of another form of abuse.

Table 10: Correlation Matrix of Abuse Types and Characteristics of Abuse

	Physical Abuse	Sexual Abuse	Neglect	Emotional Abuse	Exposed to Domestic Violence
Chronicity	-0.225***	0.016***	0.165***	0.281***	0.056***
Poly-victimization	0.202***	0.137***	0.228***	0.529***	0.137***

* $p=.05$, ** $p=.01$, *** $p=.001$

Even though emotional abuse has the strongest correlation with chronicity ($r=.281$, $p<.001$) and poly-victimization ($r=.529$, $p<.001$), interaction terms were created for each type of abuse to examine how they would affect the overall model. Model 3a (Table 10) explores the effect of interaction between chronicity and forms of abuse. Model 3b (Table 11) considers the impact of an interaction between poly-victimization and the different forms of abuse.

4.3.1 model 3a: chronicity interaction effects

Model 3a considers if interaction between the type of abuse and chronicity affects the prediction of externalizing or internalizing behaviours. Once the interaction terms for abuse and chronicity were added to the model, several significant changes are noted, as can be seen in Tables 11 and 12.

When controlling for interaction between chronicity and form of abuse, the strongest predictors of externalizing behaviours are neglect (3.16, $p<.001$), followed by chronicity (3.09, $p<.001$), aboriginal identity (2.75, $p<.001$) and physical abuse (2.63, $p<.001$) and gender (1.25, $p<.001$). An interesting

observation can be made about the ability of emotional abuse to predict externalizing behaviours. Although the relationship between emotional abuse and externalizing behaviours had a positive coefficient, the logged odds were only 1.08 ($p < .01$). In Model 3a, emotional abuse does not have a positive effect on externalizing behaviours, but chronic emotional abuse does have a positive coefficient. Emotional abuse, coupled with chronicity, resulted in an increased logged odds of externalizing behaviour problems (1.76, $p < .001$).

Table 11: Model 3a - Chronicity Interaction Effects

Variables	Externalizing				Internalizing			
	<i>b</i>	Odds Ratio	95%CI		<i>b</i>	Odds Ratio	95%CI	
			lower	upper			lower	upper
Physical abuse	0.97	2.63***	2.32	2.99	0.42	1.41***	1.34	1.72
Sexual abuse	-0.16	0.86	0.71	1.04	1.06	2.87***	2.38	3.47
Neglect	1.15	3.16***	2.78	3.60	0.99	2.70***	2.38	3.05
Emotional abuse	-0.46	0.63***	0.57	0.71	1.11	3.02***	2.69	3.39
Exposure to domestic violence	-0.42	0.66***	0.57	0.76	-0.34	0.71***	0.60	0.84
Gender	0.23	1.25***	1.19	1.32	0.34	1.41***	1.34	1.49
Aboriginal identity	1.01	2.75***	2.51	3.01	0.10	1.01	0.93	1.09
Chronicity	1.13	3.09***	2.63	3.62	1.45	4.27***	3.63	5.01
Chronicity x physical	-0.69	0.50***	0.43	0.58	-0.60	0.55***	0.47	0.63
Chronicity x sexual	-0.55	0.58***	0.46	0.73	-0.85	0.43***	0.34	0.54
Chronicity x neglect	-0.57	0.57***	0.49	0.66	-0.94	0.39***	0.34	0.45
Chronicity x emotional	0.57	1.76***	1.54	2.02	-0.51	0.60***	0.53	0.69
Chronicity x exposure to domestic violence	-0.86	0.43***	0.36	0.50	-0.00	1.00	0.82	1.21
<i>Pseudo R</i> ²								
<i>Cox & Snell R square</i>	0.13				0.09			
<i>Nagelkerke R square</i>	0.18				0.12			
Total	<i>n</i> =	26,928			<i>n</i> =	26,928		

* $p = .05$, ** $p = .01$, *** $p = .001$

When interaction terms for chronicity and forms of abuse were introduced to Model 3a, some interesting effects were observed. In Model 1 and Model 2a,

emotional abuse was the strongest predictor of internalizing behaviours. However, in Model 3a, by controlling for the interaction between abuse and chronicity, the strongest predictor of internalizing behaviours in abused adolescents became chronicity itself (4.27, $p < .001$). The logged odds of emotional abuse predicting internalizing behaviour also increased from 1.96 ($p < .001$) in Model 2a, to 3.02 ($p < .001$) in Model 3a. The ability of sexual abuse (2.87, $p < .001$), gender (1.41, $p < .001$), and neglect (2.70, $p < .001$) to predict internalizing also increased. Although physical abuse did not have a positive effect on internalizing behaviours in either Model 1 or Model 2a, it did have a positive effect on internalizing problems when controlling for the chronicity interactions in the third model. Physically abused adolescents were 1.41 ($p < .001$) times more likely to engage in internalizing behaviours. In Model 3a, none of the chronicity interaction terms had a positive effect on internalizing behaviours.

In summary of Model 3a, the introduction of interaction terms for chronicity and abuse forms alters the model in interesting ways. The ability of physical abuse and neglect to predict externalizing behaviours was increased by the introduction of chronicity interaction terms. Chronicity itself was the second strongest predictor of externalizing behaviours and the strongest predictor of internalizing behaviour compared to all other independent variables in the model. Emotional abuse, when chronic, also produced significant log odds of predicting externalizing problems in youth. Aboriginal identity was a strong predictor of externalizing behaviours, but did not significantly predict logged odds of internalizing behaviours. All forms of abuse other than exposure to domestic

violence had a positive effect on internalizing behaviours when controlling for chronicity.

4.3.2 model 3b: poly-victimization interaction effects

Model 3b was designed to examine if an interaction between poly-victimization and the form of abuse influences the previously explored relationships in Models 1 and 2b. The introduction of these interaction terms did produce several noticeably different effects in the structure of the model.

In the first model, externalizing behaviours were best predicted by physical abuse and neglect. The introduction of demographics and poly-victimization in Model 2b made the relationship between physical abuse and externalizing behaviours non-significant, and weakened the logged odds of neglect. The strongest predictors of externalizing in the second model were aboriginal identity and poly-victimization. When the interaction terms for poly-victimization were introduced in Model 3b, the strongest predictors of externalizing behaviours became poly-victimized adolescents who were exposed to domestic violence (4.84, $p < .001$), aboriginal identity (3.02, $p < .001$), poly-victimized adolescents who were neglected (2.92, $p < .001$), poly-victimized adolescents who were emotionally abused (2.59, $p < .001$), and poly-victimized adolescents who were physically abused (1.78, $p < .001$). The logged odds of gender (1.24, $p < .001$) remain stable compared to Model 2b. Poly-victimization alone and the original abuse variables no longer have a positive effect on externalizing behaviours of abused adolescents in Model 3b.

Table 12: Model 3b - Poly-Victimization Interaction Effects

Variables	Externalizing				Internalizing			
	<i>b</i>	Odds Ratio	95%CI		<i>b</i>	Odds Ratio	95%CI	
			lower	upper			lower	upper
Physical abuse	-0.95	0.39***	0.33	0.45	-1.25	0.29***	0.25	0.33
Sexual abuse	-1.21	0.30***	0.24	0.37	0.10	1.10	0.90	1.34
Neglect	-0.66	0.52***	0.45	0.61	-0.55	0.57***	0.50	0.67
Emotional abuse	-1.32	0.27***	0.23	0.31	-0.14	0.87	0.75	1.01
Exposure to domestic violence	-2.63	0.07***	0.06	0.09	-1.47	0.23***	0.20	0.27
Gender	0.21	1.24***	1.18	1.30	0.24	1.28***	1.22	1.34
Aboriginal identity	1.11	3.02***	2.79	3.28	0.06	1.06	0.99	1.13
Poly-victimization	-0.21	0.81*	0.69	0.95	-0.37	0.69***	0.60	0.80
Poly-victim x physical	0.58	1.78***	1.60	1.98	0.97	2.64***	2.38	2.93
Poly-victim x sexual	-0.08	0.92	0.75	1.13	-0.07	0.93	0.77	1.13
Poly-victim x neglect	1.07	2.90***	2.59	3.26	0.54	1.71***	1.55	1.89
Poly-victim x emotional	0.95	2.59***	2.26	2.96	0.79	2.21***	1.95	2.51
Poly-victim x exp DV	1.58	4.84***	4.19	5.59	1.23	3.41***	2.97	3.92
<i>Pseudo R</i> ²								
<i>Cox & Snell R square</i>	0.14				0.07			
<i>Nagelkerke R square</i>	0.18				0.10			
Total	<i>n</i> =	26,928			<i>n</i> =	26,928		

p*=.05, *p*=.01, ****p*=.001

Model 3b also demonstrates a shift in what significantly predicts internalizing behaviours in abused adolescents. In Model 1, internalizing behaviours were significantly predicted by emotional abuse, sexual abuse, and neglect. Model 2b introduced gender, aboriginal identity, and poly-victimization as independent variables, which diminished the predictive strength of these three forms of abuse even though emotional abuse and sexual abuse continued to be the strongest predictors of internalizing behaviours. When interaction terms were created for poly-victimization and the forms of abuse, the independent variables with the highest log odds became poly-victimized adolescents who were exposed

to domestic violence (3.41, $p < .001$), poly-victimized adolescents who were physically abused (2.64, $p < .001$), poly-victimized adolescents who were emotionally abused (2.21, $p < .001$), and poly-victimized adolescents who were neglected (1.71, $p < .001$). The specific forms of abuse had either negative coefficients in comparison to the other independent variables, or were not significant. Sexual abuse and poly-victimization that included sexual abuse did not significantly predict internalizing behaviours in the model. Gender (1.28, $p < .001$) contributed a significant but small logged odd chances of predicting internalizing behaviours in Model 3b.

Model 3b introduces interaction terms created from abuse types and poly-victimization that alters the ability of the independent variables to predict the logged odds of both externalizing and internalizing behaviours. The strongest logged odds for both functioning problems were the interaction terms. Poly-victimized adolescents who were exposed to domestic violence, abused aboriginal adolescents, poly-victimized adolescents who were emotionally abused and poly-victimized adolescents who were neglected had the strongest logged odds of engaging of externalizing behaviours. Poly victimized adolescents who were exposed to domestic violence, poly-victimized adolescents who were physically abused, poly-victimized adolescents who were emotionally abused, and poly-victimized adolescents who were neglected were the strongest predictors of internalizing behaviours in adolescents in this model.

5.0 Discussion and Conclusion

This thesis is an explorative study of the correlation between forms of abuse and negative functioning behaviours in adolescent victims. It examines the relationship between abuse and negative functioning through the empirical assessment of how greatly the form of abuse predicts the variation observed in externalizing and internalizing adolescent behaviours, while considering the influence of gender, aboriginal status, and two general characteristics of victimization: chronicity of abuse and poly-victimization.

5.1 Summary of Findings

The study was designed to examine the relationship between abuse and negative functioning through three steps of logistic regression analysis. The first step was an examination of five abuse types (physical, sexual, emotional, neglect and witnessing violence) and their ability to predict externalizing or internalizing problems in abused adolescents. Compared to all other forms of abuse, the type that predicted externalizing behaviours most strongly was neglect (logged odds of 2.46, $p < .001$) and physical abuse (1.30, $p < .001$). Internalizing behaviours were best predicted by emotional abuse (2.41, $p < .001$), sexual abuse (1.89, $p < .001$) and neglect (1.42, $p < .001$).

The second set of models examined the influence that social demographics and qualities of the abuse may have on the prediction of internalizing and externalizing behaviours in abused adolescents. The first of

these two models, Model 2a, examined if gender, aboriginal identity, and whether the abuse was chronic (more than a single incident) affected the logged odds predicted in Model 1. Of all the independent variables in Model 2a, aboriginal identity gave the highest logged odds of predicting externalizing behaviours (2.72, $P < .001$), followed by physical abuse (1.98, $p < .001$), poly-victimization (1.76, $p < .001$), neglect (1.54, $p < .001$) and gender (1.28, $p < .001$). All of the other independent abuse variables had negative coefficients and were not able to positively affect externalizing behaviours compared to the effects of aboriginal identity, physical abuse, poly-victimization, neglect and gender. A similar effect was seen in the prediction of internalizing behaviours in Model 2a. Emotional abuse (2.11, $p < .001$), chronicity (1.83, $p < .001$), sexual abuse (1.65, $p < .001$) and gender (1.40, $p < .001$) were able to positively predict youth internalizing behaviours. Physical abuse, exposure to domestic violence and aboriginal identity were either not significant or had negative coefficients when compared to the other independent variables.

Model 2b was designed to explore if poly-victimization (victimized by more than one form of abuse), gender and aboriginal identity affected the relationship between abuse and functioning problems identified in Model 1. Similar to Model 2a, the strongest predictor of externalizing behaviours in Model 2b was aboriginal identity (3.23, $p < .001$). Poly-victimization (1.75, $p < .001$), neglect (1.47, $p < .001$) and gender (1.23, $p < .001$) also significantly predicted externalizing behaviours in abused adolescents. Even though physical abuse had a positive effect on externalizing behaviours in Model 1, it has a negative coefficient in Model 2b.

Internalizing behaviours were best predicted by emotional abuse in Model 2b, similar to results from Model 1 and Model 2a. Sexual abuse (1.44, $p < .001$), gender (1.27, $p < .001$), neglect (1.16, $p < .05$) and aboriginal identity (1.15, $p > .001$) also had a positive, significant effect on internalizing behaviours.

The third model also contained two models to examine the potential interaction effects between the forms of abuse, and chronicity or poly-victimization. Model 3a introduces 5 interaction terms created by multiplying each form of abuse by abuse chronicity. This created several interesting and noted effects. The strongest predictors of externalizing behaviours in abused youth in Model 3a were neglect (3.16, $p < .001$), chronicity (3.09, $p < .001$), aboriginal identity (2.75, $p < .001$) and physical abuse (2.63, $p < .001$). Controlling for interaction between abuse and chronicity in Model 3a did not affect aboriginal identity or gender's logged odds, but strengthened the logged odds of all other variables that had a positive effect on externalizing behaviours in Model 2a. The only interaction term that did not have a negative coefficient was emotional abuse; adolescents who were chronically, emotionally abused were 1.76 ($p < .001$) times more likely to engage in externalizing behaviours. In Model 3a, internalizing behaviours were best predicted by whether the abuse was chronic. Chronicity of abuse predicted a logged odds of 4.27 ($p < .001$) when controlling for interaction between chronicity and abuse types. Emotional abuse (3.02, $p < .001$), sexual abuse (2.87, $p < .001$), neglect (2.70, $p < .001$), physical abuse (1.41, $p < .001$) and gender (1.41, $p < .001$) also had positive coefficients and significant logged odds that predicted internalizing behaviours. All interaction terms, exposure to

domestic violence and aboriginal identity had either a negative coefficient or were non-significant in comparison to the other independent variables in the model.

Model 3b examined the effect of the interaction terms created from poly-victimization and the type of abuse. The introduction of these interaction terms did alter the relationship observed in Models 1 and 2b. When controlling for interaction between poly-victimization and types of abuse, the strongest logged odds for predicting externalizing behaviours were from poly-victimized adolescents who witnessed domestic violence (4.84, $p < .001$), aboriginal victims (3.02, $p < .001$), poly-victimized adolescents who were neglected (2.90, $p < .001$), poly-victimized adolescents who were emotionally abused (2.59, $p < .001$) and poly-victimized adolescents who were physically abused (1.78, $p < .001$). Gender (1.24, $p < .001$) also had a small but positive effect on externalizing behaviours. All other independent variables had negative coefficients for predicting externalizing behaviours, compared to the other variables considered. The inclusion of interaction terms produced from poly-victimization and type of abuse in Model 3b also altered the relationships affecting internalizing behaviours from Model 2b. Similar to externalizing behaviours in Model 3b, internalizing behaviours were best predicted by the interaction terms themselves; poly-victimized youth who witnessed domestic violence (3.41, $p < .001$), poly-victimized youth who were physically abused (2.64, $p < .001$) and poly-victimized youth who were emotionally abused (2.21, $p < .001$) and poly-victimized youth who were neglected (1.71, $p < .001$). Gender also had positive coefficient that significantly predicted internalizing behaviours. Aboriginal identity, emotional abuse and sexual abuse

did not significantly predict internalizing behaviours, and all other independent variables had negative coefficients in comparison to the other variables considered in Model 3b.

5.2 Discussion of Findings

The analysis demonstrated that the form of abuse can play an important role in how victimized adolescents adapt and function. How each form of abuse, gender, aboriginal identity, chronicity and poly-victimization affected the adolescents in this study will be discussed in the following sections.

5.2.1 physical abuse.

The first model in the analysis examined whether five different forms of abuse were able to differentially predict externalizing or internalizing behaviours. Physical abuse did significantly predict externalizing behaviours in the first model of the analysis. However, compared to other forms of abuse, it did not predict the presence of internalizing behaviour problems. Model 2a, which introduced chronicity, gender and aboriginal identity as independent variables, raised the logged odds of the ability of physical abuse to predict externalizing behaviours. In Model 2b however, which introduced poly-victimization as an independent variable, physical abuse did not have a positive effect on externalizing behaviours compared to the other variables considered. The chronicity interaction terms in Model 3a demonstrated that physical abuse, when controlling for the effects of chronicity, was itself predictive of externalizing behaviours and,

to a smaller extent, internalizing behaviours. The interaction terms for physical abuse and poly-victimization, however, had a significant, positive effect on internalizing and externalizing behaviours, while physical abuse itself did not have a positive effect in Model 3b.

The association of physical abuse and externalizing behaviours agrees with literature reviewed earlier that associated physical abuse with behaviours such as anger and aggression (Loos & Alexander, 1997), criminal acts (Fagan, 2005), and externalizing behaviours in general (McGee, Wolfe & Wilson, 1997). The second and third model, however, indicate that the relationship between physical abuse and functioning problems is also dependent on other independent variables; gender, aboriginal identity, chronicity and poly-victimization. Although physical abuse plays a significant role in externalizing behaviours, and under certain situations internalizing behaviours, it was not the strongest predictor of either behaviour. Controlling for interaction between chronicity and physical abuse strengthened the relationship between physical abuse and externalizing behaviours, and changed the direction of the relationship between physical abuse and internalizing behaviours to have a positive effect. By controlling for interaction, physical abuse began to have a positive effect on internalizing behaviours even though it never did in Models 1 and 2. Controlling for the interaction between poly-victimization and physical abuse also demonstrated that adolescents who experience physical abuse and other forms of abuse may also exhibit internalizing behaviours.

Even though the first models demonstrated that physical abuse could predict externalizing behaviours, the third models with interaction terms illustrate the importance of examining not only the presence of physical abuse, but the context it occurred in. Other factors, such as aboriginal identity may be stronger predictors of the expected behaviours. Other considerations, such as poly-victimization, may alter previous conceptions of what sort of behaviours to expect from victimized adolescents. This suggests that an examination of the form of abuse, and the environment it occurs in, is essential to the determination of behavioral problems in abused adolescents.

5.2.2 sexual abuse.

Sexual abuse was the second strongest predictor of internalizing behaviours (1.89, $p < .001$) in the first model of this study's analysis, but did not have a positive effect on externalizing problems compared to the other forms of abuse. The inclusion of demographic and abuse characteristic variables in the second models did not change this trend, but the logged odds did decrease slightly. The creation of interaction terms for chronicity and abuse type increased the logged odds to 2.87 ($p < .001$). In Model 3b, which created interaction terms for poly-victimization and abuse types, sexual abuse did not have a significant, positive effect on either externalizing or internalizing behaviours.

Similar to the literature, these results illustrate what a complex form of violence sexual abuse is. The initial model, which considers no variables other than the form of abuse, indicates that adolescent sexual abuse victims are more

likely to engage in internalizing behaviours, including self-harming, depression, anxiety and any other psychiatric disorders noted by the case-worker. This agrees with other past research that suggests an association between sexual abuse and internalizing behaviours, such as the meta-analysis by Kendall-Tackett which found that 30% of all children from 45 different studies exhibited internalizing behaviours and 23% exhibited externalizing behaviours. Specifically, 71% of adolescents displayed self-injurious behaviours, 53% abused substances, 46% were depressed, 45% were withdrawn and 45% ran away.

Models 2 and 3, however, demonstrate that determining the most likely behavioural outcomes is dependent on a number of other things and that some forms of abuse or characteristics of the victim or abuse. Chronicity, emotional abuse and poly-victimization appear to play large roles in determining internalizing behaviours. It may be because these other characteristics play an important role in the entire picture of sexual victimization or that the behaviours examined here are not addressing all possible functioning problems that sexual abuse victims may exhibit such as inappropriate sexual behaviours (Beitchman et al., 1991) or post-traumatic stress disorder, which have been suggested to be the only behaviours that are more likely to be associated with sexual abuse victims than victims of other forms of abuse (Kendall-Tackett, Williams and Finkelhor, 1993).

Overall, this examination of whether sexual abuse determines a certain form of functioning behaviour shows that initial examination provides a link between sexual abuse and internalizing behaviours. However, further exploration

of the effects of demographics, chronicity and poly-victimization show that there are other forms of abuse, and characteristics of that abuse, that have a greater, positive effect on internalizing and externalizing behaviours considered in this analysis.

5.2.3 neglect.

Neglected adolescents played a major role in all three models of this analysis. In the first model, neglect was the strongest predictor of externalizing behaviours compared to all other forms of abuse. Neglect was also a predictor of internalizing behaviours, and the only form of abuse in the first model that was capable of predicting both externalizing and internalizing behaviour problems in abused adolescents.

The introduction of gender, aboriginal identity, chronicity and poly-victimization in the second models as independent variables did not alter the ability of neglect to predict externalizing or internalizing behaviours, although neglect was not the strongest predictor of either functioning problem and the logged odds of neglect did decrease slightly. Neglect was again the greatest predictor of externalizing behaviours in Model 3a, which controlled for interaction between abuse and chronicity. Neglect was also a significant and strong predictor of internalizing behaviours in Model 3a. In Model 3b, which introduced interaction terms created from the forms of abuse and poly-victimization, neglect did not have a positive effect on internalizing or externalizing abuse compared to the other considered variables, but adolescents who were neglected and poly-

victimized produced positive coefficients for both externalizing and internalizing behaviours.

All models demonstrate that neglect has the potential to predict externalizing and internalizing behaviours in abused adolescents. Neglected adolescents seem to have a slightly stronger association with externalizing behaviours than internalizing behaviours, even though both behaviours have significant logged odds. Neglect may be so damaging to adolescents because of the environment it creates. It has been speculated in research by Ney, Fung and Wickett (1994) that neglect creates an environment that makes a child more susceptible to abuse. In the case of adolescents, it may also indicate an environment that makes the adolescent victim more likely to be able to participate in externalizing behaviours, such as negative peer involvement and substance abuse, without the supervision or intervention of a caregiver. Overall, compared to the other forms of abuse in this sample of adolescent victims, neglect is a strong and significant predictor of both externalizing and internalizing problems.

5.2.4 emotional abuse.

Emotional abuse played a large role in predicting internalizing behaviours in this study. In Model 1, emotional abuse was the strongest predictor of internalizing behaviours compared to all other forms of abuse. It also had a small but significant positive effect on externalizing behaviours. The inclusion of gender, aboriginal identity, chronicity and poly-victimization in Models 2a and 2b

weakened the logged odds, but emotional abuse remained as the strongest predictor of internalizing behaviours. However, the small positive effect of emotional abuse on externalizing behaviours disappeared.

In Model 3b, which controlled for the effects of interaction between poly-victimization and different forms of abuse, adolescents who were victimized by emotional abuse in addition to other forms of abuse had a significant, positive effect on externalizing and internalizing behaviours. Even though it was not the strongest predictor of either functioning problem, the logged odds of emotional poly-victimization were strong. Emotional abuse did have a strong correlation with poly-victimization (0.53, $p < .001$) and is an important component of many forms of poly-victimization. Its ability to affect both internalizing and externalizing behaviours show that it is a complex form of abuse to measure and that its role in other forms of abuse should be considered in future research.

Model 3a, which introduced interaction terms between chronicity and the forms of abuse produced some interesting effects. When controlling for interaction between emotional abuse and chronicity, emotional abuse was the second strongest predictor of internalizing behaviours, with higher logged odds than it had in any previous models and second only to the logged odds of chronicity. However, when emotional abuse was chronic, it had a significant, positive effect on externalizing behaviours. It may be that child victims who have experienced emotional abuse come to interpret the abuse differently over time. Although there is a strong correlation between emotional abuse and internalizing behaviours, as seen in other research (Chamberland et al., 2005, Glaser, 2002),

it appears that chronic emotional abuse is more likely to predict externalizing behaviours. What may have originally caused internalizing problems in an emotionally abused adolescent may be interpreted differently as the abuse continues. Even though the initial response may be to internalize the problems through depression, anxiety and other such acts, long term abuse may give the victim time to re-interpret how they understand and cope with their victimization. Repeated exposure to hostile treatment, threats, demeaning behaviours, insults, and other emotional harm may also alter how the adolescent is able to interpret their own environment and interactions, making them more likely to engage in behaviours such as negative peer involvement, criminal acts, substance abuse or other externalizing behaviours.

5.2.5 exposure to domestic violence.

Exposure to domestic violence did not have a positive effect on either externalizing or internalizing behaviours in Models 1, 2a, 2b or 3a. In comparison to other forms of abuse, its effects were not strong enough to predict functioning problems in victimized adolescents. This does not indicate that exposure to domestic violence does not impact adolescents, but that the other forms of abuse are more likely to have a positive effect on the functioning problems considered in this study. However, when interaction terms were created for exposure to domestic violence and poly-victimization in Model 3b, the logged odds of victims engaging in externalizing or internalizing behaviours were higher than any other independent variable in the model.

Exposure to domestic violence may not have had a positive effect on functioning behaviours in the other models, but in the presence of other forms of abuse, it creates an environment that is highly damaging to the adolescent victim. The experience of being victimized and being exposed to incidents of abuse where the caregiver is abused by or abuses their partner creates a very damaging environment for vulnerable adolescents. These strong logged odds for externalizing and internalizing behaviours may be a result of living in such a strong culture of violence or the effects of feeling isolated from a caregiver who is hostile to multiple persons or a caregiver who is coping with the effects of being abused.

Even though exposure to domestic violence did not have a positive effect on internalizing or externalizing behaviours in this study, it was a very important component of other forms of victimization. It creates a very violent home environment which contributes to the possibility of victimized youth having functioning problems and should be treated as a very serious component in treating abused adolescents. The knowledge of domestic violence within the household may strengthen the functioning effects of the other forms of abuse.

5.2.6 chronicity.

The second research question that guided this study was whether chronicity and poly-victimization moderated any of the relationships between the form of abuse and externalizing and internalizing problems. Chronicity was constructed as a variable that indicated whether the abuse that was reported to

the child welfare agency was a single incident, or was a case of multiple incidents of abuse. Past research has connected chronic abuse with greater levels of behavioural and emotional problems in child victims (Éthier et al., 2004). The impact that multiple incidents of abuse had on adolescents in this study was explored through Models 2a and 3a.

In Model 2a, chronicity, gender, aboriginal identity, and the five different forms of abuse were included in a logistic regression analysis to determine how chronicity may potentially affect the ability of abuse type to predict externalizing or internalizing behaviours. When the model was run, controlling for the impact of chronicity resulted in decreased logged odds of abuse types that previously predicted functioning problems, and proved to have a significant, positive effect on externalizing and internalizing behaviours in abused adolescents. Model 3a was constructed to determine if interactions between chronicity and abuse types were the cause of this reduction in logged odds.

Model 3a created interaction terms between poly-victimization and the types of abuse. This model revealed several interesting effects that chronicity has on the ability of abuse type to predict functioning problems. An interesting effect was noted regarding chronicity and emotional abuse; emotional abuse, when controlling for interaction with chronicity, had a positive effect on internalizing behaviours. However, the interaction term for chronic emotional abuse was predictive of externalizing behaviours. Otherwise all previous relationships between form of abuse and functioning problems seen in Model 2a were strengthened. Controlling for the interaction between physical abuse and

chronicity also changed the direction of the effect of physical abuse on internalizing behaviours to positive. Chronicity was also a very important independent variable for predicting functioning problems, particularly internalizing problems.

This exploration of chronicity illustrates what a complex role chronicity plays in determining how adolescents interpret and cope with victimization. Chronicity had the ability to alter what sort of behaviours emotionally abused adolescents engaged in. Controlling for its effects also strengthened the logged odds of relationships previously observed in earlier models. In the case of physical abuse, controlling for chronicity altered the direction of its effect on internalizing behaviours, making the coefficient positive. Considering chronicity as a variable, when controlling for interaction, it was one of the most powerful predictors of both forms of behaviours. Overall, this study has illustrated that chronicity is an important component to consider when studying abuse, capable of impacting the relationship between abuse and functioning problems in ways dependent on the form of abuse itself.

5.2.7 poly-victimization.

The second part of the examination of whether abuse characteristics can moderate the relationship between abuse type and functioning problems was to study the effects of poly-victimization. Past research has demonstrated that forms of abuse are highly likely to occur together (Higgins & McCabe, 2000) and that poly-victimization has the potential to greatly impact the functioning problems

of victimized adolescents (Arata et al., 2007, Finklehor et al., 2007). In this study, poly-victimization was examined in Models 2b and 3b to determine how it impacted the relationship between abuse and externalizing and internalizing behaviours.

Adding poly-victimization, gender, and aboriginal identity as independent variables to the first model altered the direction of the effect of physical abuse and emotional abuse on externalizing behaviours from positive to negative. The strongest predictor of externalizing effects in Model 1, neglect, did not change direction but the logged odds were weakened by the introduction of the other variables. The inclusion of these variables did not alter the direction of any of the coefficients for internalizing behaviours, but it did reduce the logged odds of all the predictors seen in Model 1. To see if these changes were due to the influence of poly-victimization, interaction terms for poly-victimization and the types of abuse were created in Model 3b.

Model 3b illustrated just how powerful the occurrence of multiple forms of abuse can be in determining functioning problems in abused adolescents. Demographics and the interaction terms were the only variables that had a positive effect on externalizing and internalizing behaviours. It also altered what was the strongest predictor of functioning problems. Although neglect and physical abuse were the strongest predictors of externalizing behaviours in Model 1, poly-victimization and exposure to domestic violence was the form of abuse most likely to predict externalizing behaviours in Model 3b, followed by neglect, emotional abuse and physical violence. Emotional abuse and neglect

predicted internalizing behaviours in Model 1, but internalizing behaviours in Model 3b were predicted by the poly-victimization interaction terms for exposure to domestic violence, physical abuse, emotional abuse, or neglect.

Poly-victimization overall has a far greater impact than the occurrence of one form of abuse. Its ability to alter how abuse predicts functioning behaviours indicates how complex poly-victimization is and its potential ability to alter the environment of abused children and how they subsequently interpret and react to abuse.

5.2.8 aboriginal identity.

Aboriginal identity was included as an important demographic for consideration in determining how likely adolescent victims of child abuse are to engage in externalizing or internalizing behaviours. Aboriginal youth in Canada are over-represented in the criminal justice system, have disproportionately high rates of suicide, are more likely to live in poverty and have low rates of educational success (Blackstock et al., 2004). These problems are a result of a history that includes colonization, residential schools, and lack of social, community, and health services (MacNeil, 2008, Chandler et al., 2003). These potential challenges, compounded with child abuse, may mean that abused adolescents with an aboriginal identity may interpret and cope with abuse differently than non-aboriginal adolescent victims.

Aboriginal identity was introduced as an independent variable after the first model. The effect of aboriginal identity on externalizing behaviours was quite

strong. In both Models 2a and 2b, aboriginal identity was the strongest predictor of externalizing behaviours compared to chronicity, poly-victimization, gender, and all forms of abuse. Once interactions were introduced to the models, certain forms of abuse became the strongest predictor of externalizing behaviours, but the logged odds of aboriginal identity affecting externalizing behaviour remained quite high. Conversely, aboriginal identity did not have a significant effect on internalizing behaviours in most models other than a very small positive effect in Model 2b.

The reason why aboriginal identity has such a strong influence over externalizing behaviours may be attributed to two possibilities. First, as has been mentioned in past research literature, aboriginal populations are over-represented in the criminal justice system. Knowing this, child abuse case workers who are observing functioning symptoms in abused children may be more likely to notice externalizing problems in aboriginal youth, compared to all other youth. Second, it may be that there are strong social influences that are determining aboriginal adolescents' probabilities of becoming involved in externalizing behaviours such as Youth Criminal Justice Act involvement, or substance abuse. As was reviewed in the literature, aboriginal youth may face disproportionate rates of poverty, violence, and low educational success. They may also live in communities that do not have access to full health services, or culturally sensitive social and community services. This unique position in Canadian society may be among the reasons why aboriginal identity was such a strong predictor of externalizing behaviours in abused adolescents in this study.

Overall, aboriginal identity had a significant influence over externalizing behaviours in this thesis. It is indicated that aboriginal children may be at a higher risk of engaging in externalizing behaviours and that further work should consider this influence, and future services be designed to meet the unique challenges that abused aboriginal adolescents face.

5.2.9 gender.

Gender has always been an important consideration when determining the impact of child maltreatment on the functioning of abused adolescents. The social influence of gender may influence the pathways of how victims interpret and deal with abuse. The influence of gender was considered in Models 2 and 3. Throughout these models, being female had a small but significant, positive effect on the prediction of externalizing and internalizing behaviours that was not altered by the introduction of interaction terms in the third set of models. This finding agrees with other research by Wall et al. (2005) who found that females in their study were more likely to engage in externalizing behaviours, contrary to past research which predicted that males would predominately engage in externalizing behaviours and females in internalizing behaviours. They speculated that this relationship may be attributed to increased female violent behaviour in the juvenile justice literature. The results of this study also appear to support that females are at an increased risk of functioning problems and abused female adolescents should be given appropriate levels of attention to address both externalizing and internalizing potential problems.

This finding, and the fact that it supports the findings of Wall et al.(2005), also makes it a valuable contribution to the research literature. The altered trend of males being associated with externalizing problems and females being associated with internalizing problems is an important observation in the research literature. This new trend breaks these traditional assumptions and requires further research and theory to understand why females are more likely to be associated with both externalizing and internalizing symptoms.

5.3 Limitations

There are several limitations to this study that could be expected from any study conducted with a secondary data source in a developing area of research. Because the conceptualization of how to measure abuse is still being developed there could be other measures of abuse integrated into a similar study that are not included in this method of data collection. The data collection was designed from the perspective of child welfare services and differs slightly from other studies which have used pre-constructed, tested scales to measure child abuse and its outcomes (Achenbach, 1991b). However, this difference may also be a strength because it works within the perspective of child welfare workers who work with abused children and observe their behaviours in a timeframe closely related to their abuse experience rather than retroactive self-reports of abuse and functioning.

Children included in the CIS-2003 dataset are the cases of child abuse considered “serious enough” to report to child welfare services, which therefore

excludes all cases of abuse that are not reported to any authority or agency. This also does not include those child abuse cases that were handled solely by the police such as extra-familial sexual abuse cases, or cases that did not involve the child's caregiver. The data used in this study therefore does not capture all child abuse cases that exist in society.⁷

Of those cases that are in the study however, not all cases have sufficient evidence to conclude with certainty that abuse did occur. In order to capture all victim's experience, this study uses all adolescent cases where abuse is substantiated or suspected (not sufficient evidence, but maltreatment cannot be ruled out). Cases judged as unsubstantiated are not used. The decision to use both substantiated and suspected cases is based on previous research that has shown that both suspected and confirmed abuse reflect the maltreatment experiences of victims (Litrownick et. al, 2005).

The analysis on externalizing and internalizing symptoms could also be improved upon by considering the impact of the variable as a continuous measure. There was not enough variability in observed negative functioning in this sample to study externalizing and internalizing symptoms as a continuous scale, so instead, the observation of externalizing and internalizing measures was constructed as a dichotomous variable; either noted, or not noted in the abused adolescent. By constructing externalizing and internalizing behaviours, more detail could be observed about the extent that abuse is associated with

⁷ A Canadian study of self-reported abuse has suggested that the true prevalence of some forms of abuse can be up to six times greater than what is actually reported to Child Protective Services (MacMillan, Jamieson & Walsh, 2003).

negative functioning symptoms. The distinction between youth with many forms of externalizing or internalizing symptoms, compared to those with one or two symptoms, could provide a clearer picture of how damaging each form of abuse can be to adolescent victims.

Another limitation related to the use of the dataset is that most provincial and territorial case classification systems typically track only one form of maltreatment (Trocomé, 2005, pg. 35). This may lead to the underreporting of adolescents who have been victimized by more than one type of abuse (poly-victimization).

There are also other attributes that could further contribute to the discussion of how child abuse influences negative functioning that were not possible to examine in this study. The role of the abuser may play an important part in creating an environment of abuse that incites negative ways of functioning (Hébert et al. 2006, Kendall-Tackett, Williams & Finkelhor, 1993). However, variables such as this are not possible in a dataset derived from cases from the CIS-2003 because almost all cases involve the caregiver. This is because cases are reported to Child Welfare Services if the abuser is the caregiver. All other non-caregiver abuse cases are typically reported only to the police (Trocomé, 2005).

5.4 Policy Implications

Loos and Alexander (1997) contend that without a more detailed knowledge of the symptoms that each form of abuse is capable of promoting, it is

difficult to produce a theory of why experiencing abuse affects child functioning. By attempting to measure this relationship, this study has the potential to help shape future policies regarding how service providers evaluate abuse, and what types of programs are offered to adolescent abuse victims.

The results of this study illustrate that different forms of abuse are more likely to predict externalizing or internalizing behaviours than other forms of abuse, and that there are social and abuse characteristics that shape the abusive environment and the adolescent's ability to interpret their victimization. This research demonstrates that knowing the forms of abuse can be a useful tool for determining potential functioning problems in abused adolescents and help create and recommend appropriate programs. It could also be used by service providers to examine adolescents for having been victimized by examining the behaviours they are exhibiting. In the results of this study, emotional abuse did not have a positive effect on the externalizing behaviours, unless the abuse was chronic or poly-victimization was occurring. This could be used as a cue to examine children for other forms of abuse. For example, if an adolescent reported to child welfare services for emotional abuse is exhibiting externalizing behavioural problems, this could indicate to the service provider that the abuse could be chronic, or that there are other forms of abuse occurring as well.

This study also revealed the complex role that abuse characteristics play in determining functioning problems in adolescents. Poly-victimization is an aspect of abuse that is gaining attention in the research literature, but more awareness of its impact has to be considered and documented when assessing

child abuse cases and research. The occurrence of poly-victimization could alter or increase the chances of functioning problems and should be an important consideration of service providers concerned with addressing the needs of abused adolescents.

This exploration of abuse and functioning problems is also an important demonstration of how forms of abuse that are often not considered as serious (emotional abuse, neglect, exposure to domestic violence) can be very harmful to adolescents. This emphasizes the need for more programming and counseling for victims of these forms of abuse. Furthermore, it could be used to develop greater awareness of the damage these forms of abuse can have on victims, and help educate caregivers and service providers about the importance of earlier intervention. As an example, emotional abuse was often the strongest predictor of internalizing problems such as depression, anxiety, and self-harming behaviours. However, emotional abuse was also highly correlated with chronicity. It was shown that chronicity could alter the relationship between emotional abuse and externalizing behaviours. Adolescents who are chronically, emotionally abused could turn to externalizing behaviours such as substance abuse, running away, or violence towards others. Increasing awareness of emotional abuse, and the harm it causes, could increase reporting of abuse, and help to focus programs designed to address potential functioning problems of abused adolescents.

Overall, there are many conclusions from this research that reveal aspects about the nature of child abuse, the environment it creates, and how it affects

adolescent's negative functioning problems. The relationships between abuse and functioning problems discussed in this study can make a strong contribution towards the ability to diagnose functioning problems, and focus services for abused adolescents.

5.5 Contributions of the Study

As a field of research, there is still much to be understood about how child abuse is operationalized and how the impact it has on the victim is measured. Much more work is needed to construct a better understanding on how the complex experience of abuse affects its victims. As the field evolves, it is becoming clear that abuse is a complex concept to measure. Researchers need to address not only the forms of abuse experienced but also capture the characteristics of the experience that can shape and impact the victim's future functioning. These characteristics include variables such as chronicity, poly-victimization, and the gender, age, and aboriginal identity of the victim. The results of this study illustrate what important contributions these characteristics make to the abusive environment of an adolescent, and how they use negative functioning to cope with their victimization. The conclusions from this explorative study make an important contribution towards understanding how different forms of abuse affect adolescents, how likely different forms of abuse are able to predict functioning problems in comparison to other forms of abuse, and how social demographics and abuse characteristics shape and moderate these relationships.

This study is also an important contribution to the research literature because it concentrates on an adolescent sample, measured by child welfare investigators while the adolescent is still experiencing the effects of the maltreatment. The need for this type of research has been emphasized by past researchers (Arata et al., 2007) to minimize the issues surrounding retroactive reporting and the potential for early intervention with troubled youth. Functioning problems, including delinquency, substance abuse, depression or self-harming behaviours, may be better understood when all of the factors are taken into consideration.

Finally, this study also makes a valuable contribution to both research and policy development because it makes a valuable case for addressing forms of abuse that are often common and left unreported for long periods of time. Although the damage of physical abuse and sexual abuse is not disputed, this study illustrates what a strong impact neglect, emotional abuse, and witnessing domestic violence has on adolescents. Policies, services, and future research should examine and consider the impact of all these forms of abuse, especially when they are occurring together.

5.6 Future Research

This examination of abuse and functioning problems was a broad exploration of all forms of adolescent abuse to determine if there was a relationship between the form of abuse and type of negative functioning observed in abused adolescents. It also examined whether chronicity and poly-

victimization moderated any of the relationships observed between abuse types and observed negative functioning. There are many possibilities for future research that could build off of these results by examining these relationships through different populations, or by qualitatively exploring how adolescents interpreted their abusive environment that lead them into negative functioning behaviours.

The adolescents in this study had experienced abuse that was considered severe enough to be reported to child and family services. This suited the purposes of this study, which was to compare the effects of the five, broad definitions of abuse, but future studies could utilize populations that have experienced a wider spectrum of abuse. This could include abuse often considered not serious enough to report to child welfare authorities or a comparison group of adolescents who have not experienced abuse. Because child abuse cases are only reported to child welfare services if they involve a caregiver, future studies could also consider other abuse characteristic variables such as abuser identity.

Future research could also build on the relationships observed between abuse characteristics and individual types of abuse. Some forms of abuse exhibited very interesting relationships with abuse characteristics, such as poly-victimization and exposure to domestic violence. Further work could be done to determine how this abusive environment is interpreted by the victim so that better programs can be developed to address the root of their functioning problems.

Child abuse research is a very complex topic that can be built upon by deeper consideration of the characteristics of the abusive environment, and the social demographics that shape how adolescents cope with their victimization. Further examination of possible characteristics, and how they interact with abuse and functioning problems, will help build a comprehensive understanding of why abused adolescents become involved in negative functioning, and what kinds of services would be most effective to help victims.

5.7 Conclusion

This study was guided by the following two research questions:

1. Is there a relationship between form of abuse and type of negative functioning observed in abused adolescents?
2. Do (a) chronicity, and (b) poly-victimization, moderate any of the relationships between form of abuse and type of observed negative functioning?

The logistic regressions run in this study determined that certain forms of abuse were more likely to predict externalizing or internalizing behaviours.

Without controlling for any other variables, it was shown that neglect and physical abuse were most likely to predict externalizing behaviours, and that emotional abuse and sexual abuse were the most likely to predict internalizing behaviours.

The inclusion of gender, aboriginal identity, chronicity, and poly-victimization produced several interesting effects. Aboriginal identity was a strong predictor of externalizing behaviours and females overall were slightly more likely to exhibit

negative functioning compared to males. Chronicity was a strong predictor of negative functioning, but only affected the direction of the relationship between emotional abuse and internalizing behaviours; chronically emotionally abused adolescents were predicted to engage in externalizing behaviours. Poly-victimization was an important predictor of functioning problems and did affect the relationship observed between abuse types and functioning problems. Adolescents who were victimized by more than one form of abuse, especially exposure to domestic violence, were very likely to engage in externalizing and internalizing behaviours. In summary, a relationship between abuse types and type of negative functioning was observed, but further examination of the influence of demographics and characteristics of abuse illustrated that abusive environments are complex, and require the consideration of many factors. This exploration of the relationship between types of abuse and negative functioning illustrates many interesting relationships and contributes to a growing body of research literature that is mapping how abuse affects adolescent functioning. This study provides valuable insights regarding how the abuse type, social demographics, and abuse characteristics shape adolescent victims' environments and potential negative functioning problems. The relationships examined in this study can serve to promote a deeper understanding of abuse, and the impact it has on all adolescent victims.

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