THE IMPACT OF INDIVIDUAL AND SCHOOL CHARACTERISTICS ON TYPES AND LEVELS OF BULLYING IN NEWFOUNDLAND AND LABRADOR SCHOOLS

by

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ABSTRACT

Bullying in schools has been a concern for educational and health researchers for decades. Health related problems associated with being bullied include suicidal ideation, physical injury, anxiety and/or depression. This thesis research explored the impact of individual and school related factors on school bullying victimization and bullying by addressing three gaps in the literature: a theoretical approach, advanced statistical analysis, and the inclusion of school level variables. In particular, this research specifically applied the social-ecological theory to see which conditions in schools encouraged bullying, and which buffered it.

The social-ecological theory emphasizes the need for the whole community of students, teachers, principals, staff, parents, and the outside community to play a role in preventing bullying. Data were collected from both students and teachers in order to determine which aspects of the school community mediated school bullying. Individual and school related factors, such as student focus, community and parent-engagement, caring culture, collaborative leadership, student engagement, student belonging, adult responsiveness, and a "bullying" culture were analyzed to ascertain their role in relation to physical, verbal, social and cyber victimization, and bullying behaviours.

Data were collected in over 60 schools, with teachers (collected in March 2008) and students (collected in October and November, 2008). Students in Grades 6, 9, and 12 were selected for the study, covering all types of schools in the school district. Given the structure of the data, hierarchical linear modelling was used to take into account the impact of both individual and school related factors.

This research concluded that bullying victimization and bullying are taking place in schools in Newfoundland and Labrador. Risk factors at the individual level for victimization and bullying include gender, grade level, having been a victim of previous bullying and victimization experiences, as well as being in schools that have climates of fear and antisocial behaviour. Schools with lower levels of bullying climate, caring cultures, and extracurricular activities protected students from both bullying and victimization. Based on the findings, recommendations on policy and future research are made that can lead to the provision of safer and more caring school environments. These recommendations, if implemented, will reduce bullying and therefore, the number of children who are at risk of not achieving the three determinants of health as a result of being bullied: child development, education, and safe schooling.

DEDICATION

This dissertation is dedicated to my late wife, Ellen Gillis-White. Without Ellen's guidance and help along the way I would have never achieved in life what I have done today.

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School bullying has been a concern for educational and health researchers for decades (Dake, Price, & Telljohann, 2003; Nesbit, 1999). Bullying, a form of aggression, has been defined in the literature by Olweus in this way: "A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students" (Olweus, 1993, p. 9). Types of bullying include physical, verbal, social, and electronic (or cyber) (Canadian Public Health Association, 2007).

Schools in Canada have encountered bullying in the same way as it has occurred in other parts of the world. Canadian data have shown that 54% of boys and 32% of girls have indicated that they had bullied someone in the previous six weeks, while 34% of boys and 27% of girls have indicated that they had been bullied at least once in the previous six weeks (Craig & Pepler, 2003). More recent Canadian research by Sutherland (2010) found that 38% of the students reported bullying other students at least

once a week in the past couple of months, while 35% reported being victimized at least once a week in the past couple of months.

Health related problems associated with being bullied include suicidal ideation (Due et al., 2005), being hurt physically (Baldry & Farrington, 1999; Craig, Peters, Konarski, 1998), and prevalence of self-reported symptoms of anxiety or depression (Bond, Carlin, Thomas, Rubin, & Patton, 2001). The impact of being bullied has been shown to have long-term implications for adults, such as increased incidences of depression and low self-esteem (Olweus, 1994; O'Moore & Kirkham, 2001). Further evidence has shown that both the bully and the bystander are at risk for health related problems (Rivers, Poteat, Noret, & Ashurst, 2009).

1.1 Schools

Schools are environments in which children spend a major portion of their time and they have the potential to exert a sizable impact on their lives. Therefore, it is reasonable to expect schools to be safe and healthy environments where children can learn without fear of being bullied. Education, safety in physical environments, and child development are seen as three crucial determinants of health (Shah, 2003). Unsafe environments, where bullying occurs, place children at risk of not enjoying good health (Hamilton & Bhatti, 1996). Successful health promotion programs can help those bullied children fulfill their health and educational needs. Healthy schools create environments where children can prepare to fulfill future goals and reach their full potential.

The creation of healthy environments is a mechanism of health promotion "that means altering or adapting social, economic, or physical surroundings in ways that will

help not only to preserve but also enhance our health" (Epp, 1986, "A Framework for Health Promotion", para. 3). Since students spend much of their time in schools, it is essential to find out what role schools can play in creating safe and caring environments free from bullying. Unfortunately, little research has been carried out on the impact of school level variables on the types and levels of bullying, especially the role that formal and informal leadership has on causing or eliminating bullying (Espelage & Swearer, 2003; Lee, 2011; Ma, Stewin, & Mah 2001).

1.2 School Leadership

There are a number of different leadership approaches identified in the literature; among these approaches are shared, democratic, participative, collaborative, and distributed. The latter three approaches have many characteristics in common: shared vision, collaboration, good communication, the ability to inspire, focus on the student, and an emphasis on school achievement (Leithwood, Louis, Anderson, & Wahlstrom, 2004).

Positive outcomes that have been recognized for teachers when the leadership approach is collaborative are reduction of isolation, increased commitment to the mission and goals of the school, shared responsibility for student success, lower rates of teacher absenteeism, greater job satisfaction, and higher morale (Hord, 1997). For students, higher achievement scores, decreased dropout rates, and fewer "skipped" classes, as well as lower student absenteeism rates have been found to be associated with strong leadership (Hord, 1997; Hughes & Kritsonis, 2007).

To date, there have been few studies that have examined the role of school level factors such as formal and informal leadership in relation to bullying. Roland and Galloway (2004a) speculated that schools where bullying took place suffered from poor leadership, exhibited little professional cooperation, and had low consensus about professional matters. Ma (2002), in one of the few studies that looked at the impact of school related factors, using Canadian data, found that middle schools which experienced less bullying had positive disciplinary actions, strong parental involvement, and high academic standards. Nansel et al., (2001) found a relationship between school climate measures (such as parental involvement, relationship with classmates, academic achievement) and bullying. Interestingly, it was found that greater parental involvement was related to higher levels of bullying. A plausible explanation for this finding may be that parents are more involved in the schools because their child has been bullied.

1.3 Theories of School Bullying

Theoretical frameworks can be used to help explain various phenomena such as school violence and bullying. There are a number of theories which point to reasons why school bullying exists. Many of these theories attribute bullying to individual causes, both intra and interpersonal. Others attribute bullying to factors related to the school and community environment.

Intrapersonal theories of bullying attribute bullying behaviour to others in the school. The victim has made them bully because the victim was hostile to the bully in some way. That is, if the individual bully feels that the other person is a threat, he/she may act out against the other person. This type of theory postulates that a bully will be

aggressive if he/she feels it will lead to favourable results, and if it does, the behaviour will be repeated (Orpinas & Horne, 2006).

Interpersonal theories attribute bullying behaviours to the way the bullies react to others in the environment. That is, bullying behaviour is learned from observing others in the environment. If children see parents using aggression as a way of accomplishing goals, they are more likely to use aggression to get their way, which may manifest itself as bullying. These theories attribute the bullying to the bully being rewarded in some way or not being punished for the bullying behaviour. That is, the aggression helps the bully attain what he/she wants through bullying. These theories look at parental relationships and emphasize modeling, rewards, and punishments as explanations for bullying (Orpinas & Horne, 2006). Recently, these theories have been found wanting because they are limited in the way they explore the reasons why students bully other students (Hong & Espelage, 2012; Lee & Song, 2012).

In an effort to minimize the limitations inherent in past theories, this research is guided by the social-ecological theory that addresses the impact of the individual, the parent, and the school context on bullying. This theory, considered the most comprehensive theory examining human behaviour, posits that it is the interplay between the individual, peer group, family, school, community, and culture that has an impact on each other (Espelage & Swearer, 2008). Thus, the individual and each part of the environment needs to be taken into account to help explain why bullying is or is not taking place. Social-ecological theory attributes bullying to community breakdown or what is happening in the individual's environment. That is, if school rules are not

followed, if bullying is ignored by school staff, or if the community does not react to acts of bullying, it will flourish.

This theory emphasizes the need for the whole community to play a role in preventing bullying and addressing bullying when it occurs. When bullying in schools is not seen as a problem, it will continue. This theory postulates that when children, parents, staff, teachers, principals, and the community, work together to facilitate a positive culture and a safe environment, bullying should be less likely to be a problem and pervasive (Orpinas & Horne, 2006).

1.4 Significance of Research

This thesis addresses three gaps in the literature related to bullying in schools. First, few studies have examined the role that school level variables play in relation to individual characteristics with respect to bullying in schools (Ma, 2002; Lee, 2011). Second, most of the current research on school bullying is univariate and as a result does not account for the interaction of school level factors in relation to individual factors (Ma, 2002). Finally, most of the current research lacks a theoretical foundation (Lee, 2011; Orpinas & Horne, 2006).

1.5 Purpose of Research

The purpose of this research, using the social-ecological framework, is to determine how individual and school level factors impact on the levels and types of bullying that occur in schools of one school district in Newfoundland and Labrador. To achieve this, data were collected from both students and teachers. Specifically, the

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impact of individual and school level factors in relation to physical, verbal, social, and cyber victimization and bullying are examined.

The specific empirical objectives of this research are to:

1. Identify levels and types of victimization and bullying taking place in schools in one school district in Newfoundland and Labrador;
2. Determine which individual factors, such as grade level and gender, and which school related factors, such as formal and informal leadership, are related to victimization and bullying;
3. Ascertain if there is an interaction between individual and school related factors with levels and types of victimization and bullying.

1.6 Summary

This chapter reveals how important it is for those involved with schools to take a role in preventing bullying. This thesis seeks to inform anti-bullying policy by looking at the prevalence and types of victimization and bullying behaviour, and links student, teacher, and school level data to help determine the risk and protective factors of victimization and bullying behaviour.

This thesis is divided into five chapters. The first chapter provides a description of schools and school leadership together with some of the theories of school bullying, as well as, the significance and purpose of this research. Chapter 2, guided by the socio-ecological framework, provides a review of recent literature relating to victimization and bullying with a focus on Canadian research, and where available, on research specific to school bullying conducted in Newfoundland and Labrador. Also included in the literature review are major international studies on victimization and bullying in schools. Chapter 3 describes the research methodology. It outlines the procedures used to collect data from students and teachers. It describes how major variables are defined and created and provides scale reliabilities. As well, it explains how missing data are handled and the

statistical methods employed. Finally, a series of hypotheses derived from the literature

review using the social-ecological framework are presented. Chapter 4 describes the

research results and links the main findings to the literature. Finally, Chapter 5 provides

conclusions and recommendations resulting from the findings of this research.

Chapter 2

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2.1 Introduction

The aim of this chapter is to provide a thorough examination of research on school bullying victimization and bullying behaviour. The literature presented in this chapter focuses on Newfoundland and Labrador, Canada and will also review landmark work from around the world. First, an introduction to the social-ecological theory which is used to organize the literature review is provided. In the first section, a brief history of bullying, along with various definitions of bullying used in the literature, the theoretical framework used in this work, and finally, the prevalence of bullying and victimization is provided.

The next two sections address the risk and protective factors associated with being bullied and the physical, health, and educational outcomes associated with being a victim of bullying. The two sections that follow address the risk and protective factors associated with being a bully as well as the physical, psychological, and educational outcomes associated with being a bully. The last section addresses best practices in school bullying intervention and prevention. The chapter concludes with a summary of research on school bullying.

The research in this thesis and the literature review in this chapter is guided by the social-ecological theory which attributes bullying to the relationships between children, and to those relationships among all actors in the schooling of children. Behaviour is seen as a function of the way the individual interacts with his or her environment. Children in schools are shaped by their parents and caregivers, and when in school, by the adults in their school environment (Espelage & Swearer, 2010). This theory

emphasizes the need for the whole community to take a role in preventing bullying, postulating that when individual children, parents, staff, teachers, principals, the school environment, and the community work together the risks of being bullied are lessened (Orpinas & Horne, 2006).

In order to carry out the literature review a detailed search of various databases was undertaken, covering the years from the 1970's to the present. Searches were conducted using the following key words: bully, bullying, victim, victimization, bystander, bullying intervention, anti-bullying programs, educational leadership, distributed leadership, collaborative leadership, professional learning communities, and school climate. The following databases using EMBSCO were searched: PubMed; CINAHL Plus; Embase.com; Cochrane Library Evidence for healthcare decision-making; ERIC; Educational Complete Research; CBCA Education; PsycINFO; Sociological Abstracts; and Dissertation Abstracts. Current journal articles and books were also searched to ensure that the literature review was up to date and comprehensive. Web pages designed as clearing houses for research on bullying and prevention such as PREVNet and Bullying Research Network were also searched on a daily basis to keep up-to-date on newly published research.

2.2 Overview of School Bullying – History, Definition, Theory, and Prevalence

2.2.1 History

School bullying has been around for a long time (Nesbit, 1999; Twemlow, Fongay, & Sacco, 2010). Some people, including teachers, feel that school bullying is a normal developmental process and wonder what all the fuss surrounding bullying in

schools is about (Lipman, 2003; Spivak, 2003). However, in the 1980's in Norway, school bullying generated greater concern when three Norwegian students who had been bullied committed suicide (Olweus, 1993). This event sparked a torrent of research in the field of bullying. Events such as the school shootings that occurred in Columbine, Colorado, in 1999, Taber, Alberta in 1999, and at Dawson College in Montreal, Quebec in 2006 have added to the urgency to discover the risk and protective factors related to school bullying victimization and bullying. The recent suicides of Phoebe Prince of South Hadley, Massachusetts, Amanda Todd in British Columbia, and Rehtaeh Parsons of Nova Scotia, possibly due to cyber bullying, has added more urgency to the need to find solutions for bullying in schools and on the internet (Cullen, 2010; Shaw, 2013; Taber & Ha; 2013). Today, school bullying is seen as a major national and international public health issue (Gini & Pozzoli, 2009; Lamb, Pepler & Craig, 2009; Nansel, Craig, Overpeck, Saluja, & Ruan, 2004).

2.2.2 Definitions of Bullying

Not everyone agrees on a standard definition of school bullying (Cowie & Jennifer, 2008). Bullying, a form of aggression, has been defined in the literature by Olweus as follows: "A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more students" (Olweus, 1993, p. 9).

Nesbit (1999) defined bullying as "...unprovoked abuse, repeated over an extended time, intended to inflict distress (physical and/or psychological) upon a person perceived to be vulnerable, in a one-way exercise of power. The behaviour may be

initiated by an individual or a group" (p. 26, [emphasis added]). This definition would appear to be the most common, with an emphasis on power, and the bullying being repeated over time (Espelage & Swearer, 2003). A more recent definition broadens school bullying to include more than just students. Espelage (2004) sees bullying as "...an ecological phenomenon that is established and perpetuated over time as result of the complex interplay between the individual child, their family, peer group, school and community as well as their culture" (p. 4).

While at one time school bullying was looked upon as just physical harm, it has now been broadened to include many other forms of abuse. The newer types of school bullying include a broader range of physical bullying, defined as hitting, shoving, spitting, beating, stealing, or damaging property. Verbal bullying is defined as name-calling, mocking, hurtful teasing, racist comments, sexual harassment, or humiliating or threatening someone. Social bullying includes behaviours such as rolling eyes, turning away from someone, excluding others from the group, gossiping or spreading rumours, setting others up to look foolish or damaging relationships in various ways. Electronic or cyber bullying includes the use of email, cell phones, text messages, and social media sites to threaten, harass, embarrass, socially exclude, or damage reputations or friendships or any combination thereof. Other types of bullying are based on racial, religious, sexual, and disability factors (Cowie & Jennifer, 2008; PREVNet, 2011).

A differential in power is seen as the leading cause of school bullying. Power among students can be acquired through a number of sources such as size, strength and intelligence, social status among peers, popularity, and looks. Knowledge of others' vulnerabilities, such as obesity, learning problems and family issues, can be used to cause

distress and are perceived by potential bullies as sources of power. Being a member of the dominant group can be used against others reflecting racism, sexism, or homophobia (PREVNet, 2011).

2.2.3 Theories of School Bullying

A number of theories have been put forward in the literature on school bullying (Espelage & Swearer, 2008). Most theories emphasize individual attributes. Two of these are covered in this literature review. However, more researchers are proposing that because of the complex nature of bullying, a broader theoretical framework is needed to understand bullying and victimization (Hong & Espelage, 2012; Lee & Song, 2012; Moon, Hwang, & McCluskey, 2008). Interpersonal theories attribute bullying behaviours to the way that bullies are influenced by others in the environment. That is, bullying behaviour is learned from observing others. If children see parents using aggression as a way of accomplishing goals, they are more likely to use aggression to get their own way at school. These theories attribute bullying to the bully being rewarded in some way or not being punished for their behaviour. That is, the aggression helps the bully attain what he or she wants. These theories look at the parental relationships and emphasize modeling, rewards, and punishments (Orpinas & Horne, 2006).

Intrapersonal theories of bullying attribute bullying behaviour to others in that the other person (the victim) has made them bully because the other person was hostile to the bully in some way. That is, if the individual feels that the other person is a threat, they may act out against that person. This type of theory postulates that a bully will be

aggressive if he/she feels it will lead to favourable results, and if it does, the behaviour

will be repeated (Orpinas & Horne, 2006).

The social-ecological theory (Bronfenbrenner, 1979) views bullying behaviour as

a result of the complex relationships that occur within the child's social ecology

(Espalage, 2004). The child is at the center of this theory and is surrounded by concentric

circles which represent contexts in which the student interacts with the family, school,

and community (see Figure 1). These concentric circles are labelled by Bronfenbrenner

as the micro-system, meso-system, exo-system, and the macro-system. The theory

suggests, that if school rules are not followed, and bullying is ignored by school staff, or

if the community does not react to acts of bullying, it will flourish. This theory

emphasizes the need for the whole community to take a role in preventing bullying.

Figure 1: Brofenbrenner's Ecological System Model Applied to the School Setting
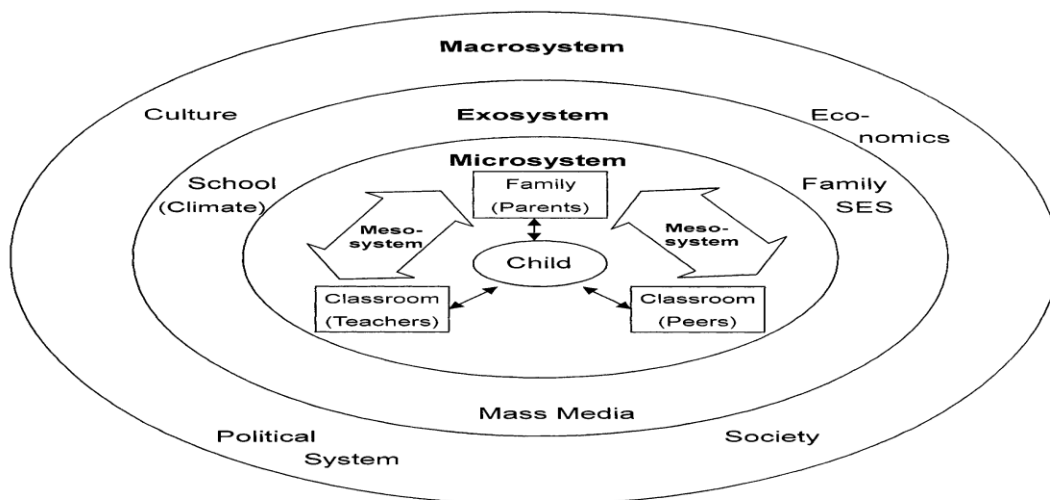
Permission to use granted by Chang-Hun Lee, pg 40. An Ecological prediction model of bullying behaviors among South Korean Middle School students. Unpublished Doctoral thesis. Michigan State University, Michigan, USA.

When bullying in schools is not seen as a problem, it will thrive. This theory postulates that when children, parents, staff, teachers, principals, the community, culture, and the school environment work together bullying can be impeded (Espelage & Swearer, 2010; Orpinas & Horne, 2006).

The micro-system is the immediate setting that contains the individual and its influence on that individual (Barboza, Schiamberg, Oehmke, Korzeniewski, Post, & Heraux, 2009). Examples of this would be support for the child's behaviour in the classroom or school as well as parental involvement with the bully/victim interactions, and the character of the bully/victim relationship in the school settings.

The meso-system involves the interaction of two or more micro-systems that influence the student's behaviour (Barboza et al., 2009). This is interaction between two micro-systems, such as the family and school, and either can have an impact on the positive (or negative) development of the child. It can also include the collaborative interaction between the parent and teacher which could have the potential to prevent physical or psychological damage resulting from bullying.

The exo-system indirectly impacts the student (Barboza et al., 2009). Exo-system factors in the case of school bullying can include the overall effect of school policies that shape the school context and exert influences on the teachers' behaviours as well as students' behaviours. An example of how the exo-system can have an impact on school bullying is by incorporating anti-bullying programming into staff training, to reduce or prevent bullying. As a result, teacher training on bullying can indirectly affect students

by educating teachers about bullying and thus providing them with the tools to allow them to prevent bullying before it happens.

The macro-system consists of those factors that affect the student in the most distant and indirect ways (Barboza et al., 2009). These factors can include society's attitudes towards weapons use, homophobia, and the tolerance for physical violence. The influence of the media on cultural values and attitudes is also an example of how a macro-system can influence the acceptance of bullying.

2.2.4 Prevalence of School Bullying

School bullying occurs in every country and in almost every school, although the level and form may vary considerably. Due et al. (2005), in one of the few comparative international studies of school bullying, found that among the 28 countries in their study, the highest incidence of bullying occurred in Lithuania with over 41% of boys and 38.2% of girls indicating that they had been bullied. In Sweden, with the lowest level of bullying, it was found that girls were the least likely to be bullied with 5.1% of girls and 6.3% of boys indicating that they had been bullied.

A more recent study consisting of 40 countries provides further evidence of the prevalence of school bullying as an international problem. Craig et al. (2009) found that exposure to bullying ranged from 8.6% to 45.2% among boys and 4.8% to 35.8% for girls. Victimization was most common in Baltic countries such as Estonia and Lithuania, with the lowest rates occurring in northern European countries such as Sweden and Finland. Rates of victimization were higher for girls in 29 of 40 countries and the prevalence of victimization decreased with age. Scandinavian countries, where there are

well established anti-bullying programs, reported the lowest levels of bullying and victimization. Eastern European countries, which do not have established national anti-bullying programs, were found to have the highest prevalence of bullying.

Bovaird (2010) argues that the reason for these differences in prevalence rates across countries is likely due to measurement differences. Some results are based on self-reports, others are peer nominations, and still others are done by parents. Not all studies have operationalized bullying the same way. Some measure the time-frame over the past month, past six weeks, or the whole school year. There may also be problems with memory. The type of measurement may be in the form of Likert-type questions (strongly agree to strongly disagree), yes/no responses, or counts. Often bullying or victimization is comprised of a single item as opposed to breaking the bullying behaviours down into its various types (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Swearer, Siebecker, Johnsen-Frerichs, & Wang 2010).

Schools in Canada have encountered bullying just as it has occurred in other parts of the world. Canadian data have shown that 54% of boys and 32% of girls indicated that they had bullied someone in the past six weeks, while 34% of boys and 27% of girls indicated that they had been bullied at least once in the past six weeks (Craig & Pepler, 2003). Using data from the 2002 and 2006 Health Behaviour in School-age Children, Craig and McCuaig-Edge (2008) found that in 2002, 38% of their sample indicated that they had been victims of bullying and that this proportion dropped slightly to 36% in 2006. Forty-one percent of their sample, in 2002, indicated that they were bullies and this proportion also dropped slightly to 39% in 2006. Boys were more likely than girls to

engage in bullying. When compared to international data these rates place Canada on the higher end of rates of victimization and bullying (Craig et al, 2009).

In Newfoundland and Labrador very few studies have systematically collected data on school bullying. Durdle (2008), studying 150 grade five to eight students in one school in Newfoundland and Labrador, found that just over 23% of students admitted to breaking other peoples' things, 26% admitted to trying to hurt or bother people, 28% admitted to teasing other students, 30% admitted to fighting with other students, and 32% admitted to talking back to the teacher. Based on interviews with 100 students in elementary, junior-high, and senior-school, Nesbit concluded that 20% of students in the province were potential victims of school bullying (Nesbit, 1999).

2.2.5 Summary of Findings on the History, Definition, Theory, and Prevalence of School Bullying

Bullying in schools has probably been around since the first school was built. Research on school bullying in Newfoundland and Labrador, Canada, and internationally suggests that bullying and victimization exists in just about all schools. Prevalence of bullying and victimization ranges from 4% to over 50% depending on the duration, school, and country, but it has taken on more urgency recently because of a number of school shootings and suicides. Bullying has been defined differently in various settings; however, most definitions attribute bullying to a power imbalance that it is expressed repeatedly over time. Our understanding of bullying has moved beyond physical bullying to include, verbal, social, electronic, racial, sexual, sexual orientation, and disability. The question as to why students bully one another primarily comes down to three types of theories: intrapersonal theories attribute bullying behaviours to the way

that bullies are influenced by others in the environment, interpersonal theories attribute bullying behaviour to others in that the other person (the victim) has made them bully, and the social-ecological theory views bullying behaviour as a result of the complex relationships that occur within the child's social ecology.

2.3 Risk and Protective Factors Associated with Being Bullied

Guided by the social-ecological theory, which emphasizes the way the individual child acts in relation to the various actors in the social ecology, a number of factors related to why students become victims of bullying as well as a number of factors that protect students from becoming victims can be found in the literature. These factors are related to the individual, the family, peers, the school context, and the community.

2.3.1 The Individual

Characteristics common to children who are the victims of school bullying are varied, but research has shown there are some students who are more likely than others to become victims of bullying. These characteristics are related to gender, age, physical size, sexual orientation, religion, and race.

Gender dictates types of victimization, and is related to who is likely to become a victim. Boys are more likely to experience physical bullying, whereas girls are more likely to be victims of indirect bullying, such as social exclusion (Craig & McCuaig-Edge, 2008; Green, Dunn, Johnson, & Molnar, 2011). Boys are most often bullied by other boys (Olweus, 1993). Verbal bullying is the most common form of bullying to which both boys and girls are exposed (Olweus, 1993). Girls are more likely to be targets of rumour-spreading and sexual comments (Green et al., 2011; Nansel et al., 2001).

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Canadian research has shown that age is an important factor in terms of bullying. A number of studies have shown that bullying tends to peak in junior high and then decreases as students go on to high school (Craig & McCuaig-Edge, 2008; Green et al., 2011; Pepler, Craig, Connolly, Yuile, McMaster, & Jiang, 2006). Craig et al. (2009) found that rates of victimization for boys decreased by age in 30 of the 40 countries studied among students aged 11, 13, and 15. The authors noted that age-related patterns for girls were not as consistent, with girls in 25 of 40 countries being victimized by bullying, decreasing with age. The decline in victimization is attributed to children maturing and gaining increased capacity for empathy and less tolerance for aggression (Schwartz, Barican, Waddell, Harrison, Nightingale, & Gray-Grant, 2008).

Physical size has also been identified as a cause of victimization by school bullying (Dempsey & Storch, 2010; Magklara et al., 2012; Olweus, 1993). Often those students who are physically weaker and smaller than their peers are more likely to become victims of bullying. Janssen, Craig, Boyce, and Pickett (2004); however, did find that there was a relationship between being obese and overweight and being bullied; they found that obese and overweight children were at greater risk of being victims of relational and physical bullying. More recent Canadian research by Kukaswadia, Craig, Janssen, and Pickett (2011) supported these findings. Ma (2002), however, found that students with weak physical conditions were more likely either to be bullied, or to bully, than students with a strong physical condition.

Very little research has been carried out on vulnerable populations in schools (Rose, 2011; Twyman, Saylor, Saia, Macias, Taylor, & Spratt, 2010). Dempsey and Storch (2010) indicate that the research which is available gives mixed results.

Vulnerable students include children with learning disabilities, autism, and epilepsy. Early research indicated that learning disabled children are at greater risk of being teased and physically bullied (Martlew & Hodson, 1991; Mishna, 2003; Thompson, Whitney, & Smith, 1994). Twyman et al. (2010) found that children with autism spectrum disorders and attention deficit disorders were four times more likely to be victimized compared to a control group. Curiously, other research has found that children with disabilities display more bullying and aggressive characteristics than students without disabilities (Swearer, Espelage, Vaillancourt, & Hymel, 2010).

Recently, sexual orientation of students has become a major focus delineating causes of school bullying of students in schools. Canadian research has shown that lesbian, gay, bisexual, transgendered, and questioning (LGBTQ) students were twice as likely as heterosexual students to be bullied, sexually harassed, or physically abused (Williams, Connolly, Pepler, & Craig, 2003). Gruber and Fineran (2008) found that 79% of the LGBTQ students experienced bullying and 71% experienced sexual harassment. Verbal bullying; however, is the most common form of bullying experienced by LGBTQ students, with one survey showing that over 80% experienced name-calling and teasing (Rivers, 2001). It is worth noting that Birkett, Espelage, and Koenig (2009) report that in most school districts, administrators and teachers are unsupportive of the needs of American LGBTQ students.

Canadian data show that the rates of bullying directed towards LGBTQ students are high, but not as high as were identified by Gruber and Fineran (2008) from American data. Saewyc, Konishi, Poon and Smith (2011) report that more than 50% of LGBTQ students admitted being verbally bullied and between 20%-35% claimed to be physically

harassed. Espelage, Aragon, Birkett, and Koenig (2008) pointed out that positive school

climates can work as buffers against the harmful psychological and social concerns that

LGBTQ youth attributed to negative school environments.

Very little research has been conducted nationally and internationally on the

relationship between ethnic minorities and bullying (Barboza et al., 2009). What little

research there is tends to be contradictory. This is due to small sample sizes, the different

cultural contexts of international studies, and failure to control factors found related to

bullying in multivariate analyses (Barboza et al., 2009). Children; however, seem to be at

risk if they come from diverse racial and religious backgrounds. Eslea and Mukhtar

(2000) conducted a study of 224 children aged 12-15 who were of Hindu, Indian Muslim,

and Pakistani ancestry, living in Lancashire in the United Kingdom. Using

questionnaires they found that boys were more likely than girls to be victims of bullying.

They concluded that bullying was common among Asian children. Eslea and Mukhtar

(2000) found that linguistics, and religious and cultural differences among different

ethnic groups in British schools were factors that caused bullying. Contrarily, more

recent research conducted in the United States has shown that African Americans and

Hispanic students were less likely than white students to be victims of bullying

(Bradshaw, Sawyer & O'Brennan, 2009).

In Canada, Larochette, Murphy, and Craig (2010) used survey data extracted from

the World Health Organization's 2001/2002 Health Behaviour in School-Aged Children

Survey (HBSC) to study the effects of race on bullying. The study consisted of 3684

Canadian students and 116 principals. Using both individual and school level factors,

they found that individual factors such as race and sex were better predictors of racial

bullying and victimization than school-level factors. They also found that school climate did not account for observed differences in racial bullying or victimization. However, they did find that in schools with supportive school climates (teachers treating students fairly) and higher teacher diversity there were decreases in racial bullying.

Newer studies are now showing that bullying victimization is related to prior victimizations. That is to say that other types of bullying victimization places a students at much greater risk for other types of bullying victimization such as physical, verbal, social, or cyber victimization. We can no longer assume that students are just the victim of just one type of bullying. This has led some researchers to label these victims as chronic victims and place these students at much greater health risks (Cappadocia, Craig, & Pepler, 2013; Hinduja & Patchin, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang, Iannotti, Luk, & Nansel, 2010).

2.3.2 The Family

Very little research has been conducted on the role of the family in school bullying (Curtner-Smith, Smith, & Porter, 2010). However, the influence of the family on student behaviour in schools is paramount. Depending on the interactions between the parents, and in some cases between siblings, poor family relationships can increase the likelihood that a child will become a victim of bullying (Nickerson, Mele & Osborne-Oliver, 2010). Research has shown that male victims are more likely to have mothers who are overprotective, controlling, restrictive, and over-involved and their fathers tend to be distant, critical, absent, uncaring, and neglectful (Duncan, 2011; Georgiou, 2008). Female victims of bullying have mothers who are hostile, rejecting, threatening, and

controlling (Duncan, 2011). Duncan (2011) noted that fathers of female victims tended to be uncaring and have affectionless control. Holt, Kaufman-Kantor, and Finklehor (2009) found that being victimized was related to homes where family members often criticized one another and where there were few rules. This may result in the child's lacking the ability to develop a sense of resilience and thus making him/her more likely to become a victim (Holt, Buckley & Whelan, 2008).

2.3.3 Peers

Peers are often present when there is a case of school bullying. Craig and Pepler (1997) found that in at least 85% of school bullying cases in elementary school there was at least one peer present.   O'Connell, Pepler, and Craig (1999) found that in just over 50% of cases there were two or more peers present. Research by Cappadocia, Cummings, and Pepler (2009) found that 63% of students surveyed witnessed bullying at least once in the three weeks prior to the study. Bradshaw, Sawyer, and O`Brennan (2007) found that 70% of students in grades four to twelve indicated that they had witnessed bullying at least once in the previous month.

Recent research has been looking at the role peers play when they encounter bullying. This research reveals the impact bystanders can have in creating an environment which is conducive to victimization. Active bystanders tend to sympathize with the aggressors and often stop others who try to intervene. Passive bystanders more often do nothing to prevent bullying from happening or continuing. This lack of action may actually encourage bullying by seeming to sanction the bullying even if the on-lookers have not participated in the actual bullying. O'Connell et al. (1999) found that

peers spent 54% of their time reinforcing bullies by passively watching and 21% of their time actively modelling the bully's behaviour.

More recent research has further clarified the role of the bystander in relation to bullying. Trach, Hymel, Waterhouse, and Neale (2010) found that age and gender played a role in how bystanders reacted. The research indicated that younger students were more likely to take positive action than older students by directly intervening, helping the victim, or by talking to an adult. Passive or aggressive bystander responses increased with grade level. Trach et al. (2010) further indicated that boys were more likely than girls to indicate that they did nothing. Girls were more likely to act as ``defenders`` than boys, and girls were more likely than boys to engage in pro-social responses such as supporting the victim or reducing bullying behaviour. They also found that these behaviours on the part of boys and girls decreased as grade levels increased, and that both boys and girls were less helpful to victims as grade level increased.

Pozzoli and Gini (2010) noted that students are more likely to come to the defence of the victims when they have problem-solving strategies and perceived peer normative pressure for intervention. As well, defending behaviour was positively associated with personal responsibility for intervention when it was perceived that their peers wanted them to intervene. This is also supported in the research of Rigby and Johnson (2006), who found that the children in their study were more likely to intervene when they saw that someone being bullied was younger, female, had rarely, if ever, bullied their peers, had positive attitudes towards victims, and believed that their mothers, fathers, and friends expected them to help the victims.

2.3.4 School Leadership

Some evidence suggests that the most important person in preventing school bullying or violence is the school principal (Astor, Benbenishty & Estrada, 2009). Rigby and Thomas (2002), who conducted research in Australia, found that strong leadership was viewed as the most important factor for effective action when dealing with school bullying. Further evidence of the importance of strong leadership is found in McGrath (2005), whose research showed that one of the most important factors in schools that had very low levels of bullying was effective leadership.

Schools have become more complex. The demands are many, such as trying to keep up with the latest in technology and addressing the demands of on-going issues such as student behaviour. Demands for school improvement also come from parents, government policy changes, and school districts. As such, schools require leaders who can adapt and who are able to collaborate with many stakeholders.

As a result of the many demands on schools and principals, the old hierarchical model of leadership is viewed as out-dated. Research suggests that schools that adopt a more collaborative approach to leadership see many improvements, although these results have been found to be indirect (Sheppard & Dibbon, 2011). The emerging approaches of leadership are distributed, collaborative, and transformational. Within these approaches, there are formal and informal leaders, and, teachers and others who regularly discuss ideas and problems with their colleagues; share information, skill, and resources; and participate in collaborative problem-solving (Leithwood et al., 2004). School improvements conducted under the umbrella of collaboration are characterized by schools and staff working together to change pedagogy and overall school climate or

culture. In the improvement of school environments students develop higher personal expectations, their marks improve, students from poorer backgrounds achieve marks closer to higher socioeconomic status students, and teachers are happier and more committed to their teaching (Hall & Hord, 2006).

Unlike the hierarchical model of leadership, collaborative principals encourage teachers to assume leadership roles and to become informal leaders or constituents. The main focus of schools characterized by collaborative leadership is a shared place of action to educate children. The principal helps create a statement reflecting shared mission, values, vision, and goals which are student focused. This process involves the entire school community (Sheppard & Dibbon, 2011).

Few studies have been published that have looked at the role that school-level factors such as leadership play in relation to school bullying (Sheppard & Seifert, 2010). However, in recent years, several studies have provided evidence of the importance of school context in buffering school children from the impact of bullying. Barboza et al. (2009) found that bullying increased in schools with unfavourable environments, where there was a lack of teacher support, and where teachers and parents did not place high expectations on children's school performance. They concluded that bullying arises out of deficits in school climate, and that improving school atmosphere can help reduce bullying and lessen the adverse effects of being a victim of bullying.

While little research can be found on the impact of leadership on bullying, much can be found in the related area of the principal's role in relation to school violence. School violence includes a wide range of deviant behaviour such as fighting and extreme forms of violence and also includes bullying (Vivolo, Holt & Massetti, 2011). Astor et

al. (2009) found that the principal was the most important person when it came to lowering levels of violence. Using mixed methods on three years of data, they found that there were safe schools in violent neighbourhoods and that there were violent schools in safe neighbourhoods. They called these "atypical schools". In atypical, low violence schools, the principal showed strong leadership characteristics and mobilized staff, students, and parents. These schools had philosophies of education that connected school safety directly to the organization and the mission of the school. Astor et al. (2009) also provided evidence that schools often became more violent or peaceful when a school's principal changed.

Research on school climate or school organization, while not looking directly at the role of the school principal, helps shed light on how a schools inner workings can lead to lower levels of bullying and victimization. School climate can be defined as the quality and frequency of interactions among adults and students (Bandyopadhyay, Cornell & Konold, 2009), which can include student perceptions of fairness and strictness of rules or qualities of student-teacher relations. Orpinas and Horne (2006) pointed out that risk factors associated with school climate are identified in schools where there is a negative climate, no encouragement of positive student-teacher relationships, lack of supervision, and no anti-bullying policies. Positive school climates, on the other hand, have the potential to provide protective factors against bullying and aggression. Such schools include those where there is a positive school climate, positive relationships between teachers and students, high levels of supervision, clear policies against bullying, and an emphasis on excellence in teaching (Bandyopadhyay et al., 2009; Harel-Fisch et

al., 2010; Khoury-Kassabri, Benbenishty, Astor & Zeria, 2004; Thapa, Cohen, Guffey, Higgins-D'Alessandro, 2013; Wei, Williams, Chen, & Chang, 2010).

Sheppard and Seifert (2010) conducted the only known study focused directly on explaining the potential link between leadership and safe and caring schools. They looked at seven factors that make up distributed leadership: supportive district leadership, collaborative school leadership, inspiring school leadership, teacher collaboration, shared decision-making, parent and community engagement, and shared vision. They found that supportive district leadership, both collaborative and inspiring school leadership, teacher collaboration, and shared-decision making had a small indirect effect on safe-caring schools. Parent and community engagement also had a small direct effect on safe-caring schools. Interestingly, the existence of a shared vision in the school was found to have no meaningful direct or indirect effects with safe and caring schools.

2.3.5 School Context

Because children spend a lot of time in school, it is not surprising that much of the bullying to which they are exposed takes place on school grounds (Barboza et al., 2009). There are a number of ways schools create environments where victimization is less likely to take place, including the types of behaviours that are provided by adult models, the kinds of communication adults establish with children, the warmth of relationships, how well adults supervise children's whereabouts in their school environment, and how they solve conflicts (Orpinas & Horne, 2006).

Charach, Pepler, and Ziegler (1995) found that in classrooms where there were higher levels of discipline, structure, and organization, there were lower levels of

bullying and victimization. More recent research by Roland and Galloway (2002) found that the degree of teachers' management skills, their ability to control their students' negative behaviour, and the social structure of the class exerted a direct impact on potential (and actual) bullying behaviour. That is, better teacher classroom management leads to lower levels of bullying. In their follow-up research with grade one teachers who were trained in classroom management, the researchers found that both bullying and behaviour problems were significantly reduced (Roland & Galloway, 2004b).

Kasen, Berenson, Cohen, and Johnson (2004) discovered that schools high in conflict and informality exhibited increased bullying related behaviour. They also found that in schools where there is a focus on learning for both teachers and students; students are granted more autonomy and are encouraged to get involved in school politics and in decision-making, and bullying related behaviours declined.

Gregory et al. (2010) found that there were meaningful differences among many schools in students' perceptions of school rules. Schools that were strongly structured manifested less bullying and victimization. The researchers felt that such structure is more important in high schools, where students change classrooms more often than they do in middle schools. Harel-Fisch et al. (2010), using survey research, undertook a major study of 40 countries to examine the impact of negative influences (poor student-teacher relations, liking or disliking school) on perceptions and involvement in school bullying. They confirmed that the greater the number of negative school perceptions (poor student-teacher relations, liking or disliking school) the greater the likelihood of bullying and victimization. Their research further showed that being a victim was more related to the quality of relationships with fellow students than teachers.

Teachers spend a lot of teaching time with students in the early years, but much less time as the students advance into higher grades. Since most bullying occurs in public spaces such as hallways, cafeterias, and playgrounds, teachers often do not see the bullying especially if it is not physical (Bradshaw et al., 2007; Lemstra, Rogers, Redgate, Garner & Moraros, 2011; Vaillancourt et al., 2010). Teachers may not be aware that such bullying is taking place since students may not report it for fear of reprisal (Pepler, Craig, Ziegler, & Charach,1994). Espelage and Swearer (2003) found that teachers often do not correctly identify bullies and are not confident in their abilities to deal with bullies. Additionally, Bradshaw et al. (2007) found that staff who had greater capacity for handling bullying situations were more likely to intervene in the conflict and were less likely to cause the bullying problem to escalate.

Naylor, Cowie, Cossin, de Bettencourt, and Lemme (2006) found that many teachers had a limited conceptualization of bullying, thus restricting their ability to identify it. They recommended that teachers be provided with more information regarding definitions of bullying. This is further supported by Marshall, Varjas, Meyers, Graybill, and Skoczylas (2009) in research which indicated that the most effective way to decrease bullying was through more training of teachers and the provision of workshops dealing with specific responses to bullying. Once bullying is identified; however, it is important that teachers receive support from both the principal and vice-principal when they respond to bullying (Safe School Action Team, 2005).

Teachers can sometimes unintentionally encourage victimization. This can be done by teachers not taking action when bullying is encountered. This failure to intercede in-turn leads to students not reporting further aggressive behaviour since they

believe no action will be taken (Espelage & Swearer, 2003). Teachers may also inadvertently encourage bullying by failing to promote respectful interactions among students or failing to speak out against teasing and other behaviours related to bullying (Espelage & Swearer, 2003). Song and Swearer (2002), as cited in Yoon (2004), found that compared to students who were not involved in bullying, those who were bullies and victims were more likely to report that teachers and other school staff bully students in their schools.

Barboza et al. (2009) found that the perceived social support of teachers had a positive effect on diminishing bullying. Their research indicated that bullying depends on the extent to which teachers take an active role in promoting student welfare, are interested in helping students, allow the possibility of alternative forms of self-expression, promote cooperation, and create an equitable school environment.

While teachers and principals are on the frontlines of preventing victimization, other school personnel can play a role in deterring bullying, as well: counsellors, social workers, bus drivers, nurses, and cafeteria workers are all in roles where they may observe or be asked to intervene should a bullying incident occur. However, very little research has been carried out on the role these groups play in bullying victimization.

To date, there has been only one known study which has looked at the role of the school counsellor in relation to bullying in schools (Jacobson & Bauman, 2007). The researchers presented one-hundred and eighty-three school counsellors in Arizona with three bullying scenarios in which children were being victimized by acts of physical, relational (social exclusion), and verbal bullying, and asked counsellors how they would respond. Using repeated measure ANOVAs, they found that the school counsellors rated

physical and verbal bullying as more serious than relational bullying, and felt more empathy for victims. They were more likely to intervene in cases of verbal bullying than relational bullying. One important finding that Jacobson and Bauman identified while examining the level of training was that school counsellors who had bullying training were more likely than those without to intervene in cases of relational bullying.

Hendershot, Dake, Price, and Lartey (2006) surveyed 404 elementary school nurses in the United States on their perceptions of bullying, their actions when they encountered a bully or victim, and their perceived level of personal preparation when they encountered bullying in schools. They found that 29% of respondents believed that bullying was a major problem in schools in general; however, only 9% of the nurses thought that bullying was a problem in their school. They found, as well, that school nurses, for the most part, are likely to encounter physical bullying. Based on their findings, the authors emphasize that nurses, like other professionals, should be educated concerning bullying: how to recognize bullies and victims, how to encourage the reporting of bullying behaviour, and which behaviours to report. Other findings from this study reveal that 80% of nurses assessed and documented injuries, 80% reported the bullying to the principal, and 72% made teachers or staff aware of the problem. They also found that nurses felt that the best way to reduce school bullying was through consistent discipline for students and improved student supervision.

Very little research has been carried out on the physical school structure and its surroundings, and the subsequent impact that they may have on preventing bullying. Schools are microcosms of society that may have an impact on the associated levels and types of bullying. Research has shown that class and school size are not related to levels

of bullying (Galloway & Roland, 2004; Khoury-Kassabri et al., 2004; Whitney & Smith, 1993), although it has been found that schools in larger, more urban centres have higher levels of bullying (Whitney & Smith, 1993). Socioeconomic status, surprisingly, has not typically been found to be related to bullying incidents in schools either (Whitney & Smith, 1993). However, more recent research conducted by Bradshaw et al. (2009) who surveyed 22,178 students in 95 elementary and middle schools in the United States, found that socioeconomic status defined by concentration of student poverty was related to bullying-related attitudes and experiences. They recommended that more research be carried out on socioeconomic status and bullying.

2.3.6 Community

It appears that very little research has focused on the impact of community-related factors on the level of bullying in schools (Due et al., 2009). The research that has been completed in this general area of study; however, suggests the level of victimization differs not only by schools, but also by community and across different countries (Chaux, Molano & Podlesky, 2009; Elgar, Craig, Boyce, Morgan & Vella-Zarb, 2009).

The community can play a role in preventing or encouraging school bullying. One study showed that in communities where there are high levels of crime there are also higher levels of bullying in schools (Chaux et al., 2009). Positive communities, where children see adults solving conflicts peacefully, where they perceive that adults value educational achievement, and where police are seen modelling a community problem-solving orientation, encourage children to see that violence is not the way to achieve a desired end (Orpinas & Horne, 2006). Communities that respect differences and

celebrate cultural diversity are also much more likely to protect children from violence and bullying (Orpinas & Horne, 2006).

Exposure to community problems such as poverty and violence; however, cannot fully explain why in some schools there are lower levels of bullying. Astor et al. (2009) found that schools in some communities marked by high levels of violence did not have corresponding high levels of bullying. In fact, these schools were often seen as nonviolent, with diminished levels of bullying. The researchers demonstrated that the biggest contributing factor was the type of leadership practised by the principal. Astor et al. (2009) indicated that the principals were instrumental in creating safe schools:

> Under the leadership of these principals, the atypically low violence schools aimed beyond mere safety to a goal of creating caring, inclusive, and nurturing environments. This included how they maintained and celebrated both the social and academic work of students in the hallways and classrooms. It included how they smiled and used positive encouragement during supervision in violence-prone areas such as hallways and playgrounds (rather than draconian law enforcement methods). It encompassed how the staff organized to be consistent and procedure driven so that the response to violence was clear and fair. (p. 451-452).

2.3.7 Summary of Findings for Risk and Protective Factors Associated with Being Bullied

The social-ecological theory emphasizes the interactions between the whole community of students, teachers, principals, staff, parents, and the outside community that play a role in preventing bullying. This section shows that there are a number of factors from the social-ecological theory that place a student at an elevated risk of being bullied. Boys are more likely to be victims of physical bullying than girls. Girls on the other hand are more likely to be victims of social, verbal, and cyber bullying. It is generally the case that bullying tendencies decrease with age, bullying is most common

in junior high school and tapers off after that. Physically weaker students, and obese and overweight children are more likely to be victims of bullying. Students manifesting disabilities such as autism, epilepsy, and learning disabilities are at a greater risk of becoming victims of bullying. LGBTQ students are at a much higher risk of becoming a victim of all types of bullying. Being of a different race and/or religious background than the majority in the community represents a risk factor as well. Bullying victimization is related to prior bullying victimizations such as verbal or social.

Family can be both a risk factor and a protective factor. Families where mothers are overprotective, controlling, restrictive, and overly involved increase the risk of male bullying victimization. Fathers who are distant, critical, or absent are also linked to male victimization. Female victims of bullying have mothers who withdraw love, are hostile, rejecting, threatening, and controlling. Conversely, in homes where the parents are loving and caring, there is less risk of the student becoming a victim of bullying.

Peers are present at most bullying events. Therefore, in schools where students do not react to bullying, members of the school population are more likely to be bullying victims. Age and gender are related to whether a student will intervene. Girls are more likely to come to the aid of all victims, but such tendencies to intervene decrease with age.

Weak or dysfunctional school environments can create potential victimizing risks for students becoming victims of bullying. Schools marked by insufficient discipline (policies or practices), poor organization, classroom mismanagement, elevated levels of conflict and informality provide fertile grounds in which intimidation and torment thrive. Teachers are important players in dealing with bullying events and limiting victimization.

They implicitly encourage bullying when they do not confront it, and they endorse bullying behaviours in students when they themselves exhibit intimidation and coercion. Similarly, it is often their lack of ability to identify bullying that contributes to the problem due to their inaction when bullying occurs. Other non-teaching personnel such as educational psychologists, social workers, and counsellors can also have a positive impact on lowering bullying levels through the education of teachers on various aspects of bullying. Schools must educate teachers on how to identify and consequently respond to bullying. Ultimately, the evidence suggests that there is less bullying victimization in communities that have lower repeated levels of violence.

2.4 Physical, Psychological, Health, and Educational Outcomes Related to Being a Victim of Bullying

The link between the impact of school bullying and having health related problems is strong. This is substantiated by the overwhelming amount of research that has been conducted internationally (Alikasifoglu, Erginoz, Ercan, Uysal & Albayrak-Kaymak, 2007; Due et al., 2005; Due, Hansen, Merlo, Andersen, & Holstein, 2007; Fleming & Jacobsen, 2009; Forero, McLennan, Rissel & Bauman, 1999; Kim, Koh, & Leventhal, 2005; Nansel et al., 2001; Nansel et al., 2004; Natvig, Albrektsen & Qvarstrom, 2001). These studies use large samples, delineate various types of study designs (case studies, prospective, retrospective), employ different types of research methodologies (quantitative and qualitative), target varied locations (local, national, and international), and represent both rural and urban settings. Major prospective studies have controlled for confounders and bias as well as having used multilevel data analysis (Bond et al., 2001; Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006;

Nickel et al., 2005; Storch, Masia-Warner, Crisp, & Klein, 2005). In addition, systematic reviews and meta-analyses have been carried out on large cross-sectional studies (Gini & Pozzoli, 2009; Hawker & Boulton, 2000).

2.4.1 Physical, Psychological Health, and Education Related Problems Caused by Being a Victim of Bullying

Those who are bullied at school encounter both physical and psychological health related problems. Health related problems associated with being bullied include: suicidal ideation (Due et al., 2005), being hurt physically (Baldry & Farrington, 1999; Craig, Peters & Konarski, 1998), and higher prevalence of self-reported symptoms of anxiety or depression (Bond et al., 2001). The impact of being bullied has been shown to have long-term implications for adults, such as increased incidence of depression and low self-esteem (Olweus, 1994; O' Moore & Kirkham, 2001).

The evidence that being a victim of bullying, and consequently suffering social and health related problems is overwhelming, coming in the form of case studies, cross-sectional studies, and, of more importance, longitudinal studies. There have been a number of international studies that have looked at the impact of victimization on the health of children using the same standardized questionnaires with multiple outcomes using advanced analytical techniques. There have been different types of informants, peers, parents, and teachers involved.

The link between bullying victimization and health related problems among school-aged children is complicated. The relationship is not linear, and it is difficult to make a causal link when many children do not show the immediate effects of being bullied especially when the bullying is verbal or social. In spite of the challenges relating

to this particular field of study there is an abundance of research which has shed light on the negative impact on the health of students who are the subject of bullying in school.

Some of the health related problems of being bullied arise directly from the actual physical beatings, such as being thrown into lockers, or having one's head placed in a toilet. The psychosocial problems associated with being bullied range from anxiety, depression, self-mutilation, and weight loss or gain. Bullied students are more susceptible to common colds, learned helplessness, low self-esteem, and suicidal tendencies, and are at a greater risk of committing suicide (Hawker & Boulton, 2000; Gini & Pozzoli, 2009; Wolke, Woods, Bloomfield & Karstadt, 2001). Reflecting the poor health and psychological outcomes associated with bullying, Nesbit (1999) judiciously entitled his book on bullying in Newfoundland and Labrador: Black eyes and bruised souls: A portrait of bullying. An example at the extreme end of school bullying is the tragic death of Reena Virk from Sannich, British Columbia, who was bullied by seven girls and one boy (The Globe and Mail, 1997), being an especially horrific example but not an isolated case. More recently, Amanda Todd, in British Columbia in 2012 and Rehtaeh Parsons, in Nova Scotia in 2013 committed suicides which were said to be linked to cyber bullying (Alphonso, 2013).

The health related problems of "bully/victims" (one who is both bully and victim) overlap with those of the victims only and the bully. Kaltiala-Heino, Rimpela, Rantanen, and Rimpela (2000) indicated that these bully/victims suffer more health related problems than either the bullied or the bully, problems marked by anxiety, depression, self-mutilation, and weight loss. They are also more susceptible to common colds,

learned helplessness, low self-esteem, and more frequent suicidal ideations, attempts and successes.

Less research has been conducted on the health consequences with regards to the bystander (Rivers et al., 2009). Research has shown that in as many as 85% of all cases of bullying, there are witnesses (Craig & Pepler, 1997). Some of these witnesses actually join in with the bully or either actively or passively reinforce the bullying by watching without joining in and this can be seen as encouraging the bullying (O'Connell et al., 1999). However, it is possible that those who witness the act and do nothing are likely to have feelings of guilt, sleeplessness, depression, and inferiority (Rivers et al., 2009).

Nansel et al. (2004) carried out a major international cross-sectional study in which 25 countries (including Canada) took part. The same survey instruments were utilized and translated into different languages. Samples were large ranging from 1648 to 6567 with an average size of 4528 students per country. It was clear from their research that children who were bullied were more likely to a have greater number of health related problems such as poorer psychosocial adjustment and poorer emotional adjustment than those who were not involved. Other studies, conducted using cross-sectional designs using different methods and questionnaires have found similar results in Canada, the United States, England, Australia, Italy, Korea, Chile, and Ireland to name a few (Analitis et al., 2009; Baldry, 2004; Craig, 1998; Flemming & Jacobsen, 2009; Nansel et al., 2001; Rigby, 1999).

More recently, prospective cohort studies have shown the impact of bullying on the health of victims (Arseneault et al., 2008; Rothon, Head, Klineberg, & Stansfeld, 2011; Winsper, Lereya, Zanarini, & Wolke, 2012). The prospective study is a rare

opportunity to gain access to students before they have been bullied. Due to the longitudinal nature of these studies, this allows for the establishment of a baseline data where the level and types of bullying can be established and followed, thus allowing for the control of pre-established health and bullying problems. Prospective cohort studies also allow for the control of pre-existing health problems such as emotional problems.

One of these studies followed 1116 twin pairs, some of whom were identical (Arseneault et al., 2008), using multilevel analysis, thus controlling for confounders and adjusting for age. The results from this study show that the twin who is not bullied versus the one who is bullied has fewer health related problems such as somatic complaints, anxiety, and depression. Researchers concluded that there was a dose response: the more severe the bullying and the more often it occurred, then the more severe and the greater the number of psychological problems caused. Their findings indicated that being bullied leads to internalizing associated problems independent of other risk factors common to members of the family in which the bullied twins grew up. The association between bullying and internalizing problems does not simply reflect a genetic susceptibility to being victimized by bullies and developing internalizing problems. The study concluded that being bullied contributes uniquely to internalizing problems in children's lives during their early school years.

Hawker and Boulton (2000) studied 20 years of research (1978-1997) on school bullying and its impact on health. Using meta-analysis they compiled the findings of a number of large cross-sectional studies. They were able to conclude that there was a strong link between bullying and health related problems such as anxiety and depression. They recommended that there was no need to conduct further research on the link

between the two since the research was so powerful and convincing. However, a limitation of their meta-analysis was the failure to look at the different types of bullying such as the bully and the bully/victim (one who both bullies and is a victim).

Despite the strong conclusions attributed by Hawker and Boulton, research in this area remains ongoing. In 2009, Gini and Pozzoli used 11 studies dating from the databases that were created up to March 2008 to produce another meta-analysis, this time using the link between the type of bullying and health related problems. Their conclusions were similar to those of Hawker and Boulton. Their specific contribution to the literature was that they examined the impact of the type of victimization on the bully, the bullied, and the bully/victim. Their conclusion is that children who are targets of peer aggression (both victims only and bully/victims) are at significant risk of a variety of psychosomatic problems when compared to the non-involved. There were similarities between victims and bully/victims in several domains, such as low emotional adjustment, and health problems. Bullies were found to be at a significantly higher risk of psychosomatic problems, such as headaches, dizziness, and sleeping problems, when compared to those not involved in bullying.

Schreier et al. (2009) conducted research using a prospective study design which involved yearly assessments starting when the children surveyed were seven years of age. Health outcomes were measured at age twelve. They found evidence of a link between severity or chronicity of peer victimization and the development of psychotic symptoms, and reported that these findings were consistent with the impact of sexual or physical abuse. They also found that there was a dose response, that is, the longer and more

frequent the duration and repetition of the peer victimization, the more likely that the child would exhibit psychotic symptoms.

Victims of bullying have been found to have educational problems. In many cases, bullied students do not want to go to school and this affects their school work due to lost school time and learning. Glew, Fan, Katon, and Rivara (2008) found that, after controlling for age, sex, ethnicity and income status, bystanders who are also victims of bullying when compared to victims were more likely to feel unsafe at school and sad most days, and to believe that they were not good at all and that they did not belong at school. Konishi, Hymel, Zumbo, and Li (2010) using Canadian data, found that when principals perceived higher levels of bullying in their school, students did poorer on math and reading achievement than in schools where principals perceived less bullying.

2.4.2 Summary of Findings for the Physical, Psychological, Health, and Educational Outcomes Related to Being a Victim of Bullying

There is little doubt about the long-term impact on the physical, psychological, and educational outcomes of being a victim of bullying. The research encompasses both quantitative and qualitative approaches, includes prospective studies, retrospective studies, as well as experiments, systematic reviews, and meta-analyses.

There are physical issues associated with being the victim of bullying as well as psychosocial problems such as anxiety, depression, self-harm and self-mutilation, and weight loss or gain. Other health related problems include susceptibility to common colds, learned helplessness, low self-esteem, and suicidal ideation. Students who are bullied also have problems with schooling which may affect their future educational

opportunities. Bystanders are indirectly victimized by bullying behaviours when they are unable to help the victims.

2.5 Risk and Protective Factors Associated with Being a Bully

Social-ecological theory can also provide a framework to help explain why some individuals become bullies. Research on why students bully is not as extensive as it is for risk factors and consequences of being a victim of bullying. However, there are a number of factors related to why some children are bullies and others are not. According to social-ecological theory, factors that are related to being a bully are individual characteristics, family, peers, school context, and community characteristics. The evidence of each is reviewed in the section that follows.

2.5.1 The Individual

Gender is associated with being a bully. Males are more likely than females to engage in physical bullying (Craig et al., 2009; Totten & Quigley, 2005). Pepler, Jiang, Craig, and Connolly (2008) found that males were more likely than females to be involved in moderate to high levels of bullying. However, the researchers did indicate that the reason for this finding was probably the way that bullying was defined since they did not elaborate social forms of aggression. Females are more likely than males to be involved in social or verbal bullying (Bradshaw et al., 2009; Totten & Quigley, 2005).

Age is associated with being a bully. Bullying peaks in adolescence and tends to taper off in the high school years (Nansel et al., 2001). Craig and McCuaig-Edge (2008) found that bullying peaked for boys in grade nine and for girls in grades eight and nine.

Ma et al. (2001) reported that as bullies grow older bullying tends to be expressed differently and is less physical. However, these researchers state that verbal bullying remains consistently high during school years.

Bullies have been found to have higher levels of aggression than the non-bullies. It is not just other students who are victims: bullies also take out their aggression on teachers, parents, and siblings (Olweus, 1991). Bosworth, Espelage, and Simon (1999) found that the strongest predictor of bullying was anger. Others have found that embracing a positive view of aggression is directly related to bullying (Bentley & Li, 1996; Lee, 2011). Craig (1998) found, that when surveyed, males reported more physical aggression across grades than did a comparison group. For females, aggression occurred in higher grade levels. Her research also showed that female bullies reported more physical and verbal aggression than a comparison group.

Canadian research by Janssen et al. (2004) found a link between being obese and overweight and being a bully. Their study, which involved 5749 students aged 11-16 years old, found that overweight and obese girls were more likely than non-overweight girls to engage in verbal bullying and physical bullying. The researchers also found a relationship between being male and obesity and being overweight and bullying behaviours.

Like bullying victimization, more recent studies are showing that engaging in bullying is related to prior acts of bullying. That is to say that engaging in other types of bullying places students at greater risk of engaging in other types of bullying behaviour such as physical, verbal, social, or cyber bullying. This has led some researchers to label these students as chronic bullies and to place these students at much greater risk than

other students to bully (Cappadocia, et al., 2013; Hinduja & Patchin, 2008; Juvonen &

Gross, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010).

2.5.2 Family

Bullies are influenced by their upbringing (Dempsey & Storch, 2010). The family

characteristics of bullies are said to include having an absent father, low cohesion, little

warmth, parents with high power needs (use of harsh physical punishment) that permit or

encourage aggression, physical abuse, poor family functioning, negative affect (anxiety,

depress or guilt), authoritarian parenting, and harsh physical punishment (Baldry, 2003;

Bowers, Smith & Binney, 1992; Bowers, Smith & Binney, 1994; Bowes et at., 2009;

Ferguson, San Miguel & Hartley, 2009; Holt et al., 2009; Stevens, Bourdaeudhuij, & Van

Oost, 2002). Research has also examined the role of siblings as a factor in bullying.

Duncan (1999) found that 42% of bullies often bullied their siblings. More recent

research on family characteristics has shown that family interactions have a significant

influence on bullying at school (Lee, 2011). Lee also found that children who are

exposed to less authoritarian parenting and less domestic violence are less likely to

demonstrate prominent levels of aggressive tendencies and less likely to have higher

levels of aggression and fun seeking behaviour and thus are less likely to engage in

bullying behaviours, a finding which is consistent with most literature on bullying.

2.5.3 Peers

Peers can encourage bullying. Active bystanders who, for whatever reason,

sympathize with the bully may implicitly encourage bullying when they fail to intervene.

Similarly, passive bystanders who do nothing to prevent the bullying, may actually encourage bullying by sanctioning the bullying even if they have not participated in it (Stueve et al., 2006). O' Connell et al. (1999) found that when averaging bullying episodes across all episodes, peers spent 54% of their time reinforcing bullies by passively watching, and 21% of their time actively encouraging the bullying.

2.5.4 School Context

All school environments, because of negative student school perceptions can have the potential to create victims; the bullies and the victims share characteristics that allow bullying behaviours to happen. Charach et al. (1995) found that classrooms where there are reduced levels of discipline, structure, and organization demonstrate higher levels of bullying. More recent research by Roland and Galloway (2002) found that classroom management, evidenced especially in the ability to control students' negative behaviour, dictated levels of bullying. They found that the teacher's management and control of the class and the social structure of that class had a direct impact on bullying behaviour. Other factors found to be related to negative school environments include lack of classroom management skills, poor teaching abilities, low expectation for student success, and an inefficient discipline plan (Orpinas & Horne, 2006).

More recent research has shown the important role that teachers play in whether students bully. Barboza et al. (2009) found that schools where students experience a lack of teacher support, or attend schools with unfavourable environments, and have teachers without high expectations for their school performance, place students at a higher risk of becoming bullies. This research is supported by research from Cyprus which showed that

the psychological climate of schools (as defined by the quality of interpersonal relationships and application of and obedience to rules in school) has significant direct effects on bullying behaviours (Bayraktar, 2011). Harel-Fisch et al. (2010) found that participation in bullying was related to poor teacher-student relations. However, when teachers encouraged students to express views, treated students fairly, gave extra help when needed, valued fair rules, and did not treat students strictly or severely, bullying diminished. Gregory et al. (2010) also found lower rates of bullying in schools where rules were perceived to be fair and uniformly enforced.

Barboza et al. (2009) found that perceived social support of teachers had a positive effect on de-escalating bullying. Their research illustrated that bullying can depend on the extent to which teachers take an active role in promoting student welfare, are interested in helping students, allow the possibility of alternative forms of self-expression, promote cooperation, and create an equitable school environment.

Espelage and Swearer (2003) claim that teachers inadvertently encourage bullying behaviour in a number of ways, primarily, by not taking action when bullying is encountered, which in turn leads to students not reporting incidents. They suggested that teachers might encourage bullying by failing to promote respectful interactions among students or failing to speak out against teasing and other behaviours related to bullying.

Twemlow, Fongay, Sacco, and Brethour (2006) studied the repercussions of teachers who are perceived as bullies. They identified two types of teacher bullies: the sadistic bully, who humiliates students, hurts their feelings, and is spiteful, and the bully-victim (is both a bully and victim of bullying) who is frequently absent, fails to set limits, and lets others handle problems. They found that of the 116 teachers from seven

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elementary schools included in their study, 70% of these teachers indicated that other teachers bullied students, but only in isolated cases. Only 18% of these teachers felt that teachers bullying students was frequent. Forty-five percent of these teachers admitted to bullying a student at some time. They also found that in these schools teachers who had been bullied while in school were likely to subsequently bully their students. Teachers who had experienced bullying as children were more likely to report that teacher colleagues bullied students; they admitted to knowing more bullying teachers in the past three years than those teachers who had not been bullied in their youth.

2.5.5 Community

The wider community plays a role in encouraging or discouraging school bullying. For instance, research has shown that in communities where there is income inequality, there are also higher levels of school bullying (Chaux et al, 2009). In other research, income inequality has been found to be related to violence in the community. Elgar et al. (2009), for example, found that income inequality was associated with the rates of bullying in schools among 37 countries.

When a school shooting occurs the influence of the media in bullying becomes the focus of the debate concerning how it may be linked to the event. Although it has been difficult to establish a causal link between media exposure and bullying behaviour, Barboza et al. (2009) found that the odds of bullying increased almost 29% per standard deviation change in hours spent watching television. In addition, they found that the odds of bullying increased by almost two percent per standard deviation change in computer game playing.

2.5.6 Summary of Findings for Risk and Protective Factors Associated With Being a Bully

As is the case in the issue of the victim of bullying, who becomes a bully is influenced by the gender and age of the individual child. Males are more likely than females to be physical bullies, while females are more likely than males to be social and verbal bullies. Bullying by both males and females tends to decrease with age after junior high school. The most common reason for bullying has to do with anger as well as aggression. Overweight and obese children are more likely to be bullies. Bullying others places a students at greater risk of engaging in other types of bullying behaviour such as physical, verbal, social, or cyber bullying.

Family has also been shown to be an influence in bullying behaviour. Bullies are more likely to come from homes where the father is absent, there is low cohesion, little warmth, high power needs (use of harsh physical punishment) that permit or encourage aggression, physical abuse, poor family functioning, negative affect (anxiety, depression and guilt), authoritarian parenting, and harsh physical punishment. They are also more likely than non-involved students to bully their siblings.

School environments where there is little support for victims often encourages bullying due to the tacit support of bullying. As part of this, active bystanders encourage the bully by not helping the victim. School environments in which there are low levels of discipline, structure, and organization can often enable bullying behaviours. Schools where there is a lack of effective classroom management and an ability to control students' negative behaviours also help foster bullies. Other school factors found to be

related to bullying are poor teaching abilities, low expectations for students, and inefficient discipline plans.

Teachers can encourage bullying by not acting when they see bullying taking place. They may also encourage bullying by creating school climates that fail to promote respectful interactions among students. While it is rare in the literature, teachers who bully students are modelling a behaviour that encourages their students to bully. Research shows that when teachers promote student welfare, are interested in helping students, and promote cooperation and equitable school environments, children are less likely to become bullies.

Although there has been less research carried out on the impact of the community and the media on bullying in schools, that which has been reported suggests that the more students watch television and play video games the more likely they will bully. Also, it has also been found that bullying is more likely to happen where communities experience high levels of income inequality.

2.6 Physical, Psychological, Health, and Educational Outcomes Associated with Being a Bully

Most research on the physical, psychological, and educational outcomes of school bullying is focused on the victim. Studies on the impact of actually being a bully are rare. The research that does exist shows that a bully is at a higher risk of experiencing a wide range of problems as compared to students not directly involved in bullying. At the extreme, bullies are more likely than those not involved in bullying to be the victims of school shootings. Research has shown that three-quarters of all school shootings were

done by students who had been bullied and their tormentors were often their targets (Vossekuil, Fein, Reddy, Borum & Modzeleski, 2002).

2.6.1 Physical, Psychological, Health Issues Associated with Being a Bully

Bullies are more likely than non-involved children to engage in risk-taking behaviours such as smoking, drinking often, and fighting. They are less likely to wear seat belts and are more likely to engage in risky sexual behaviours than non-involved children (Dake et al., 2003). Recent research conducted by Radliff, Wheaton, Robinson and Morris (2012) surveyed over 78,000 students in middle and high schools in the United States concerning substance abuse. They found that high school students who were bullies were more likely than non-involved students to use cigarettes, alcohol, and marijuana. They also found that bullies who engaged in one type of deviant behaviour were also more likely to engage in other deviant behaviours. Bullies are also at a higher risk than non-involved students of attempting suicide or attempting self harm/self-mutilation (Center for Disease Control, 2011).

2.6.2 Criminal and Educational Outcomes Associated with Being a Bully

The long-term educational consequences associated with being a bully are not promising. Bullies are most likely to be failing students in both middle and high school compared to those who are not involved in bullying (Center for Disease Control, 2011). Olweus (2011), using longitudinal data following males over a period of eight years, discovered that those who continued to be bullies after school completion were at a much greater risk than non-involved students of ending up in prison over an eight year period.

Canadian research by Jiang, Walsh, and Augimeri (2011) using a sample of over 900 individuals found that bullies are far more likely to end up in the criminal justice system than non-bullies. Bender and Losel (2011), who conducted research in Germany using a prospective longitudinal design, found that bullying at school was a strong predictor of self-reported violence, delinquency, and other anti-social outcomes in young adulthood. The results from these studies are further corroborated by a systematic/meta-analytic review of longitudinal studies carried out by Ttofi, Farrington, Losel, and Loeber (2011). They found that the probability for criminal offending up to eleven years later was two and a half times greater for bullies compared to non-involved individuals.

2.6.3 Summary of Findings for the Physical, Psychological, Health, and Educational Outcomes Associated with Being a Bully

There is less research concerning the long-term impact on the physical, psychological, and educational outcomes resulting from being a bully than there is the victim. However, there is evidence that shows bullies are more likely than those not involved in bullying to engage in high risk behaviours such as smoking, drinking, and getting into fights. Bullies are also more likely to engage in risky sexual behaviours and more likely to attempt suicide. Bullies are more likely than those not involved in bullying to fail school, as well as to end up in prison. As well, bullies are more likely than those who are not involved in bullying to be victims of school shootings.

2.7 Best Practices in School Bullying Intervention and Prevention

There has been a great deal of research on school bullying and prevention in Canada, the United States, and internationally (Ttofi & Farrington, 2011). This section

examines some of the major research related to prevention of school bullying. It presents best practices for both prevention and intervention.

Three types of bullying prevention can be found in the literature. Primary prevention includes all efforts designed to prevent bullying from occurring. The elements of effective anti-bullying programs include: promotion of awareness of bullying and its serious consequences for victims, the need to report bullying and ways to deal with bullying, engaging the school community in rejecting bullying, and fostering safe school environments. Secondary prevention programs involve the identification of bullying incidents and interventions designed to prevent bullying from recurring. Secondary prevention is accomplished through monitoring, reporting, and intervening in cases of bullying. A third level of prevention, tertiary prevention, includes all medical interventions (family therapy, social skills development, cognitive therapy) to prevent the reoccurrence of bullying instances that failed to stop the initial bullying. This is carried out by a medical evaluation of the bully, mental health treatment, and ongoing monitoring of that individual (Srabstein, Joshi, Due, & Wright 2008).

There are many approaches to preventing bullying in schools. These approaches can range from minimal efforts (holding a Pink T-shirt day) to the development of a whole-school approach, one in which the whole school, including parents, become involved. Some anti-bullying prevention programs are aimed at the bully, and as a result, are tertiary prevention programs and have proved to be effective in lessening or preventing bullying (Mytton, DiGuiseppi, Gough, Taylor, & Logan 2006).

In Canada, Pepler, Craig, Ziegler, and Charach (1994) evaluated an anti-bullying program that included the community (parents), the whole school, including each

classroom, and individual students. The project involved four elementary schools with a total of 1000 students aged eight to 14. The program focused on policies to deter bullying, and staff members were encouraged to spend more time on school grounds. Activities were employed to increase all participants' understanding of the nature and harmfulness of bullying. Students were encouraged to curtail bullying activity they witnessed by stepping in. Peer mediation was also a part of the program, and parents were recruited through parent-teacher meetings and a newsletter (Pepler et al., 1994).

The outcomes with respect to reducing bullying; however, were not as positive as expected. Results from the self-report anonymous questionnaires 18 months after the intervention began showed a reduction in the numbers of children being victimized over the past five days, but a small, though non-significant increase in the proportion of children who had been bullied more than once or twice a term. Also, during that period more children reported having bullied others more than once or twice a week during the term of the program (Pepler et al., 1994).

In 2002, an evaluation of an anti-bullying program was conducted in Edmonton, Alberta with seven elementary schools taking part. The program integrated violence prevention in all subject areas in the regular curriculum. Resource materials addressed building a safe and caring classroom, developing self-esteem, respecting diversity, and difference, helping with anger management, dealing with bullying and harassment, and developing conflict resolution skills. This is a school-wide program that provides workshops for adults and older teens in the community. It reinforces the modeling of pro-social, non-violent behaviours extending beyond classroom and school, and parents and the wider community are an essential component. As part of this program, teachers,

trained as facilitators, provided in-service workshops at both elementary and secondary school levels. Their knowledge and skills with curriculum were used to integrate violence prevention into many aspects of school life and learning (Resolve Alberta, 2002).

The evaluation of the Alberta program was conducted over a three-year period to determine its efficacy. Pre- and post-test scores indicated a statistically significant increase in knowledge related to violence and bullying. Positive outcomes were found during post-testing, marked by teachers reporting an increase in observed incidents of sharing and respect, and a decrease in incidents of physical and psychological bullying (Resolve Alberta, 2002).

The Beyond the Hurt program was developed in 1999 by the Canadian Red Cross to prevent the damaging effects that bullying has on youth and communities (Platt & Fairholm, 2004). The program works with youth organizations, schools, and the community to build community capacity to deter bullying. Training takes place over a three-day period for teachers and students (one teacher per two to three students) who will become peer facilitators and are trained to deliver the message that bullying is not acceptable. In the schools where the program is set up, a "risk" workshop is held, in which issues of risk are identified, and violence prevention committees are created gathering together youth, parents, adults, teachers, and community members. The program provides youth peer facilitators with information on interpersonal power issues, the rights and responsibilities of individuals, and intervention and prevention issues as well as the law and policies regarding harassment and bullying (Platt & Fairholm, 2004).

Sutherland (2010) evaluated the effectiveness of the Beyond the Hurt program in decreasing bullying in two schools with a sample size of 621; 285 students in the intervention school and 336 in the control school. Her results showed no significant improvement in bullying behaviour, socio-emotional skills, or social competence. She did; however, find that the program was effective in enhancing empathy, an important component in influencing school bullying and the behaviour of bystanders.

In England, the Sheffield Anti-Bullying Research and Development Project took place from 1991 to 1993. The study consisted of 23 schools (16 primary and seven secondary) and 6500 students aged eight to 16 years. The researchers employed a pre-post design. Its main component was a whole-school policy against bullying. However, schools could choose to put in place other interventions, such as curriculum work, playground interventions, and work at the individual level with bullies, victims, or peers. According to researchers the amount of time spent on the core and optional components varied greatly from school to school (Smith, Ananiadou, & Cowie, 2003).

Following an 18-month period, from the inception of the preliminary noted project, researchers reported that victimization rates decreased by 14% in primary schools and by 7% in secondary schools; rates of bullying decreased by 12% in primary schools and by 12% in secondary schools. It was found that the proportion of students informing teachers about bullying increased by 6% in primary schools and by 32% in secondary schools, and that the proportion of bullies being confronted by teachers increased by 5% in primary schools and by 38% in secondary schools (Smith et al., 2003).

Perhaps the most well known and the first major anti-bullying program was implemented in Norway. It was initiated after three students who had been bullied

committed suicide. This program, a whole school approach to bullying, consisted of interventions at the school (conference day, better student supervision, PTA meetings), the classroom (classroom rules, praise, and sanctions) and at the individual level (talks with the bully, victim, and parents). The study was carried out between May 1983 and May 1985. It included approximately 2,500 children from 42 primary and secondary schools (Olweus, 1993). The intervention focused on children in the Bergen area of Norway in Grades four to nine, between the ages of 10 and 15 years.

The evidence suggests this program was quite successful. Olweus (1993) reported substantial reductions in children reporting being victimized by peers, in children admitting to bullying others, and in student ratings of the numbers of children being bullied in their class. The results revealed an approximate 50 per cent reduction in bullying for the age range of 10-14 years over an eight-month period, and the reduction was even greater after 20 months. The effects showed similar effects for boys and girls.

Following the initial eight months, other positive outcomes were identified from this study. There was an average reduction of 16% for boys and 30% for girls in their reporting of their having bullied other students. After 20 months the reductions were 35% and 74% respectively. Olweus (1991) reported a clear reduction in general anti-social behaviour such as vandalism, theft, drunkenness, and truancy.

Fekkes, Pijpers, and Verloove-Vanhorick (2006) conducted research in the Netherlands using a two-year follow-up randomized intervention "group-control group" design. The anti-bullying intervention program in their study was aimed at teachers, bullied children, bullies, non-involved children, and parents as program leaders. It endeavoured to involve the whole school community as a way of lowering bullying

behaviour. Schools were supplied with the booklet: Bullying in School: How to Deal with It. They were expected to set up clear rules dealing with bullying, incorporate curriculum lessons concerning bullying, allocate good supervision during recess, and inform and involve parents about the anti-bullying policy of the school.

They found a 25% reduction in the level of bullying during the first year, compared to the control group. There was a decrease in the scale scores of victimization and active bullying behaviours in the intervention group compared to the controls. They reported, as well, that there was an increase in improved self-reported peer relationships in the intervention group. Finally, they found a decrease in reported student depression in the intervention schools. In the follow-up year; however, they did not find any significant differences between the intervention and the control group, leading them to conclude that anti-bullying programs must be repeated every year.

Olweus (1993), Fekkes et al. (2006), and other researchers have shown promising results in terms of decreasing bullying and victimization. Limber (2011) notes that Olweus's anti-bullying program has been mainly successful with grades three to seven, but that it is more difficult to decrease bullying in grades seven and above. Limber (2011) cited school structure as part of the problem. In the intermediate and senior high school grades subject teaching replaces homeroom teachers, and as a result teachers are less attuned to the needs of the students.

Gini (2004) provided an overview of published intervention and prevention programs research which has demonstrated the effectiveness of the social-ecological approach to reducing bullying. One anti-bullying program evaluation, carried out in 1995 in an Italian middle school, had the teachers learn psycho-social risk factors in the school

and how to deal with the bully-victim relationship. In the second year, counselling services were introduced to teachers, and parent meetings on bullying were organized. During the third year, teachers, parents, and students worked together to develop school policy to confront bullying and to build a positive school climate. Curriculum was also changed to include bullying related interventions.

The evidence from this study of the previously noted program revealed that the experimental group showed significant decreases in reported bullying in comparison to the control group, and an increase in pro-social behaviours such as feelings of belonging and friendships. Furthermore, the positive effects of this program were being felt six years after it was put in place, highlighted by a 59% decrease in victimization and a 66.5% decrease in bullying.

More recent research has shown the value of anti-bullying programs, as well, Ttofi and Farrington (2011) completed a systematic review and meta-analysis of 44 program evaluations of anti-bullying programs in schools. They found that school-based anti-bullying programs were effective. Bullying on average decreased by 20%-23% and victimization decreased by 17%-20%. They found that the programs that were most effective were those in which parent meetings were included, there were clear and firm disciplinary methods and improved playground supervision. This research is supported by the findings of Craig, Pepler, Murphy, and McCuaig-Edge (2010). They concluded from a review of 48 intervention programs that bullying can be prevented through programs that are designed to help children and youth develop the skills essential for healthy relationships.

2.7.1 Summary of Research on Best Practices in School Bullying Intervention and Prevention

There has been a great deal of research devoted to the prevention of bullying in schools in Canada and internationally. These prevention strategies have ranged from doing nothing to dealing with the whole-school approach. There are three levels of prevention dealing with bullying: primary, secondary, and tertiary. The most effective type of prevention is primary prevention, in which programs are designed to prevent bullying before it happens.

While early findings for many anti-bullying programs were disappointing, new research is showing that the whole-school approach is the best way to deal with bullying. As is the case with the social-ecological theory, the emphasis is on all the players involved with the school environment. Students, teachers, administrators, parents, and the community are involved in the initiative and interventions encompass the entire school population. The focus is on both the students who are involved in bullying and those who are victimized. Interventions address attitudes and behaviours, targeting thoughts, as well as interpersonal and emotional skills through curriculum. For these programs to work; however, they must be carried out as prescribed by the program creators and they must be evaluated in order to determine their efficacy.

The conclusion implied is that anti-bullying programs, when put in place with the proper resources, can foster lower rates of bullying and victimization. However, there has to be a whole-school approach in order to make major differences. Intervention should be at three program levels; 1) the primary level - universal programs, targeting the entire school population, indicated programs, focusing on students with initial involvement in bullying or victimization; 2) secondary level - interventions that address

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attitudes and behaviours targeting thoughts, attitudes, as well as interpersonal and

emotional skills should be included; 3) the tertiary level - intervention aimed at the

individual consistently involved in bullying behaviours. Parents, as well as the

community, should be involved in the initiative (Espelage, & Swearer, 2003; Craig et al.,

2010; Ma, et al., 2001; Smith et al., 2003).

<div align="center">2.8 Summary of Research on School Bullying</div>

This literature review has examined the state of research on school bullying

through a social-ecological theory framework. This review covers the period between the

1970s to the present and includes local research from Newfoundland and Labrador, as

well as Canada and international studies. It has found that bullying and victimization do

not exist in a vacuum and are present in most, if not all, schools. This research is now

moving away from descriptive studies to those which are based on theoretical

foundations. All those involved in schools play roles in the prevalence of victimization

and bullying in schools, suggesting that the solutions to school bullying are therefore in

the hands of all school stakeholders.

Factors inherent in victimizations are related to the child, the family, the school,

and the community. Factors that define the bully are also related to the interactions

between the child, family, the school, and the community. This literature review has also

shown that there are various types of victims of bullying: the bystanders, the victims

themselves, and in many cases the school climate. This review has shown that the victim

of bullying is affected physically, psychologically, and academically. The bully is also

shown to be at physical, psychological, and academic risk. Fortunately, anti-bullying

programs, when implemented properly, can decrease the rates of bullying and

victimization.

Chapter 3

METHODOLOGY

3.1 Introduction

The purpose of this chapter is to outline and describe how the data for this thesis were collected, measured, and analyzed. Specifically, I will present a description of the study design, sample and data collection, variables and measures, how missing data were handled, the data analysis technique, and list of hypotheses.

3.2 Study Design

This research uses a cross-sectional survey design focused on assessing current attitudes, as well as prevalence of victimization and bullying. The cross-sectional survey approach is economical in terms of time and resources (Creswell, 2008), and it has been found to be a reliable and valid way to collect data (McMillan & Schumacher, 2010).

3.3 Data Collection

Students in Grades 6, 9, and 12 completed a modified version of the 2006 Safe School and Social Responsibility Survey for Elementary Students. The 2006 Safe School and Social Responsibility Survey for Elementary Students has been used to survey over 15,000 students in grades four to seven in British Columbia (T. Waterhouse, personal communication, July 7, 2007).

Permission to use the survey was granted by Terry Waterhouse, from the University of the Fraser Valley (Appendix E). Questions not pertaining to bullying were removed from the questionnaire, and the survey was set up to be used with scan sheets. The British Columbia study on which this questionnaire was based was a longitudinal study designed to measure students' perceptions of personal safety, substance use, school connectedness, and community involvement over a period of years. The primary purpose of this research was to provide school districts with comprehensive baseline data and support to enable them to plan for safe and socially responsible learning environments which would meet the needs of the diverse student populations, as well as to help inform policy-making.

Having received the necessary permissions, during the months of October and November, 2008, all schools having students in Grades 6, 9 and 12 in one school district in Newfoundland and Labrador were asked to participate in the study. One staff member of the district was assigned to distribute and collect the data from the individual schools. This individual also followed up and encouraged all schools to participate in the survey.

Students were asked to place the completed questionnaires in envelopes to ensure confidentiality and anonymity.

Parents were informed of the survey through a letter sent home by each school principal. Included with the letter was a consent form. Consent was passive in that if parents did not want their child to take part, the parent sent a form to the child's teacher indicating that they did not want their child to participate. This was done for two reasons: students' involvement is directly related to school life, and students could decide for themselves whether or not to participate.

Independent reviews by the ethics committee at Memorial University (ICEHR), the school district, and the school principals safeguarded the rights and well-being of the students. Parents and teachers were made aware that students' rights and well-being were assured, and that student involvement would be part of their classroom activities. This process facilitated the involvement of as many students as possible.

The modified survey instrument (see Appendix A for a copy of the survey) consisted of 111 questions which covered the following areas: grade level, gender, victimization, bullying, bullying climate, student engagement, student belonging, student efficacy, peer action, family responsiveness, adult responsiveness, adult respect and recognition, community safety, and antisocial behaviour.

The school district where this research was completed consisted of 119 schools. Of the 119 schools in the district, data were collected from 92 schools, a school response rate of 83%. Furthermore, 62 urban and rural schools participated in both the Learning from Leadership Study (see below) and the research on school bullying. Thirty schools that participated in this research were excluded from this thesis because they did not

participate in the leadership study. To ensure reliability, data from students not in the current school the previous year were taken out of the data set.

3.5 Teacher Level Data

In the Spring of 2008, Dibbon and Sheppard asked all teachers in the school district to take part in the Learning from Leadership Study. The study used a mixed-methods design to investigate key sources of leadership for public education and how sources of leadership related to selected school conditions. Of the 2884 teachers eligible to participate in the survey 1804 of them returned surveys for a response rate of 63% (Sheppard & Dibbon, 2011). Schools were identified in this data set allowing for the link to be made to this student level data. The research instrument covered areas of leadership that have been characterized as collaborative leadership and professional learning communities (PLC) factors (Sheppard & Brown, 2008; Sheppard, 2007). Permission was sought and received to use the Dibbon and Sheppard data in conjunction with the student level data collected on school bullying.

The leadership surveys consisted of responses which were then transferred to scan-sheets, guaranteeing that only specific categories (1 to 6) could be filled in. Once scanned the accuracy of the data was ensured because the data did not have to be entered by hand. Factor analyses were carried out on each scale by Sheppard and Dibbon and reliability analyses were carried out to ensure scale reliabilities.

3.5 Description of the Students in School Bullying Sample

In all, sixty-two schools were matched with the student-level data, and the Leadership and Learning Study. The rates of student participation within each school ranged from a low of just over 40% to a high of 100%. Of the 4,246 student participants, 38.0% were in Grade 6, 36.3% were in Grade 9, and 25.6% were in Grade 12. Just over 50% of the participants were females. Just over 74% of the students were located in urban centres.

3.6 Variables and Measures

3.6.1 Student Questionnaire

Table 1 shows the reliabilities for each of the Level-1 predictor scales to be used in the analysis. Cronbach's alpha is the most commonly cited measure of reliability cited in the literature. Alpha ranges from 0 to 1 with higher values indicating greater internal consistency. Nunnally (1978, p. 245) recommends that scales are reliable when they have an alpha level of 0.7 or higher. Two scales, peer inaction and community safety did not achieve that threshold. Community safety, at .68, was close to the threshold and was reliable for Grades 9 and 12 so it was included in future analyses. Once the scales were deemed reliable the items were summed to create the scales.

3.6.1.1 Dependent Variables

Students were given a definition of bullying: "Bullying happens when a person who has more power or some advantage (bigger, more status, etc.) repeatedly tries to bother, hurt, make fun of or attack another person". A definition of bullying was used to ensure that the students clearly understood bullying and victimization. Eight questions

were used to measure victimization and bullying: four questions examined physical, social, verbal, and cyber victimization and four questions examined physical, social, verbal, and cyber bullying. Bullying victimization was measured using four questions: How often have you been bullied by other students in the following ways?1) Physical bullying (hitting, shoving, kicking); 2) Verbal bullying (name-calling, teasing, threats, putdowns); 3) Social bullying (exclusion, rumours, gossip, humiliation); and 4) Cyber bullying (using computer or text messages to exclude, threaten, or humiliate).

Bullying behaviour was assessed using the following four questions: How often have you taken part in bullying others in the following ways? 1) Physical bullying (hitting, shoving, kicking); 2) Verbal bullying (name-calling, teasing, threats, putdowns); 3) Social bullying (exclusion, rumours, gossip, humiliation); and 4) Cyber bullying (using computer or text messages to exclude, threaten, or humiliate). Lower scores on these items indicated lower levels of victimization or bullying, or no victimization or bullying at all. The items ranged from never, once or a few times, about once a month, about once a week, many times a week over the past 12 months.

3.6.1.2 Level-1 Independent Variables

There are two levels (Level-1 and Level-2) of independent variables used in this thesis research. Level-1 variables are variables that were collected at the student level and were gathered using the student self-reports. These included gender, grade, self-esteem, peer action, peer inaction, family responsiveness, adult responsiveness, adult respect and recognition, bullying education, student engagement, student belonging, student efficacy, bullying climate, climate of fear, antisocial behaviour, and community

safety. The first of these variables is student self-esteem. Self-esteem was composed of eight items: 1) I do lots of important things, 2) in general I like the way I am, 3) overall, I have a lot to be proud of, 4) I can do things as well as most other people, 5) other people think I am a good person, 6) a lot of things about me are good, 7) I am as good as most other people, 8) when I do something, I do it well. Responses ranged from strongly agree, agree, undecided, disagree, to strongly disagree. This variable was found to be reliable for all grades and had an overall reliability of .83. Items were reverse scored so that higher scale scores reflected higher levels of self-esteem.

The second variable measured family responsiveness. This variable was made up of three questions: 1) I can get extra help from my family if I need it, 2) adults in my family respect me, and 3) there is an adult in my family that I can go to for support or advice or talk to about my problems and worries. The item scales ranged from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .76. Higher scores for family responsiveness indicate that students were able to call upon an adult family member for support if needed.

The variable peer action (bystander) was designed to capture how students responded when they encountered a student being bullied. This variable was made up of 11 items: 1) told the person(s) doing the bullying to stop, 2) talked to the person(s) doing the bullying, 3) talked to the bullying person(s) friends about it, 4) did something to distract the person(s) who bullied, 5) helped the person being hurt to get away, 6) talked to the person being hurt, afterwards, 7) got friends to help solve the problem, 8) talked to an adult at school, 9) talked to another teen/youth about it, 10) reported it to an adult at

school, 11) talked about it to an adult at school. The item scale responses ranged from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .89. Higher scores for peer action meant that students were likely to act positively when observing bullying taking place.

Peer inaction (bystander) was designed to capture what the respondents did not do when they encountered a student being bullied. There were four items in this scale: 1) walked away, 2) ignored or avoided the person(s) who bullied, 3) stayed home from school, and 4) did nothing. The scale responses went from never, hardly ever, some of the time, most of the time, to always. This variable was found to be unreliable for all grades and had an overall reliability of .56. Due to its low reliability it was not used in the analysis nor were any of the individual items.

Three variables were designed to pinpoint how adults in schools dealt with bullying and violence, respect for students, and bullying education. Adult responsiveness measured the way students perceived how adults handled bullying in school. This variable was made up of two items: 1) adults at my school do a good job of responding to bullying and harassment, and 2) adults at my school do a good job of responding to physical violence (punching, kicking, and weapons). The range for each item consisted of never, hardly ever, some of the time, most of the time, to always. It was found to be reliable for all grades and had an overall reliability of .79. Higher scores for adult responsiveness indicate that adults were more likely to respond to bullying or violence when encountered in school.

Adult respect and recognition measured the quality of relationships between adults and students in school as perceived by students. It consisted of five items: 1) the adults at my school treat students fairly, 2) I can get extra help from adults at my school if I need it, 3) adults in my school respect me, 4) adults in my school really care about students, 5) there is an adult in my school that I can go to for support or advice or talk to about problems and worries. The scale items ranged from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .79. Higher scores for adult respect and recognition indicate that adults were more likely to respond to students' needs in schools.

The bullying education variable consisted of two items: 1) adults help us learn about bullying, and 2) adults help us learn how to recognize and deal with bullying. The scale items responses ranged from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .80. Higher scores for bullying education indicate a greater knowledge about bullying and how to deal with it.

Three variables were designed to capture how students felt about school. Student engagement measured whether students were engaged in school-related activities. The four items that made up this scale are: 1) students treat teachers and adults at school with respect, 2) I know what my school's code of conduct says, 3) students learn to work together and help each other, and 4) students learn to solve problems with others in peaceful ways. The item scales ranged from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .73. Higher scores indicate higher levels of student engagement.

Student belonging referred to whether or not the student feels like he or she belongs in the school and is made up of five items. The five items are: 1) I feel like I belong at my school, 2) other students at my school accept me as I am, 3) when I have a problem, there are students who will help me, 4) students at my school really care about each other, and 5) students only care about themselves and not about others. Item responses ranged from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .77. Higher scale scores mean higher levels of student belonging.

Student efficacy referred to the student's perception that he or she could make a difference in school and is made up of nine items. The nine items are: 1) students at my school work together to solve problems, 2) in my school, students have a say in deciding what goes on, 3) I do kind things for other students at school, 4) I see other students do kind things for others at school, 5) students take responsibility for one another, 6) students learn to consider other people's points of view, 7) students learn to respect the rights of other people, 8) students take an active role in improving the classroom and school, 9) students are trying to make the world a better place. Items ranged from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .89. Higher scores mean higher levels of student efficacy.

Three measures tapped into school climate and included bullying climate, climate of fear, and level of antisocial behaviour in the schools. Bullying climate consisted of four items: 1) bullying is just a normal part of being a kid, 2) it is important to report bullying to adults at school (this item was reverse scored to reflect the coding of the other

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items), 3) in my group of friends, bullying is okay, and 4) many students get bullied because they deserve it. The item responses went from strongly agree, agree, undecided, disagree, to strongly disagree. This variable was found to be reliable for all grades and had an overall reliability of .70. Higher scores were an indication of greater fear on the part of students. Two items, 'it is up to me to deal with bullying at school' and 'other students try to help you when you are being bullied' were deleted from this scale because they lowered the internal consistency of the variable. Higher scores indicate less tolerance for bullying in schools.

Climate of fear consisted of five items and had the lead in: At school or school events over the past 12 months, how often are you worried or afraid that you will: 1) be physically attacked or hurt by other students, 2) be talked into doing things you are not comfortable with by other students, 3) have rumours or gossip spread about you, 4) be verbally harassed or embarrassed, and 5) be made fun of or left out of activities? The item responses went from never, hardly ever, some of the time, most of the time, to always. This variable was found to be reliable for all grades and had an overall reliability of .81. Higher scores were an indication of greater fear on the part of students.

Antisocial behaviour variable consisted of five items and had the lead in: How often have you engaged in the following activities at school, over the past 12 months?: 1) pushed or hit someone else, 2) threatened someone with physical violence, 3) carried a weapon, 4) stolen someone else's property, and 5) damaged school or someone else's property (including graffiti). The scale items ranged from never, once or a few times, about once a month, about once a week, and many times a week over the past 12 month with higher scores indicating greater antisocial behaviour. This variable was found to be

reliable for all grades and had an overall reliability of .83. Higher scores were an indication of greater levels of antisocial behaviour.

Community safety was made up of two questions: 1) I feel safe on my way to and from school, and 2) I feel safe in my neighbourhood or community. The items were on a scale of never, hardly ever, some of the time, most of the time, to always thus meaning that higher scores indicated higher levels of community safety. This variable was found to be reliable for all grades and had an overall reliability of .68.

Table 1

Level-1 Reliability Coefficients for Variables (N=4,246)

Scales	Number of items	Alpha All grades	Alpha Grade 6	Alpha Grade 9	Alpha Grade 12
Victimization – physical	1				
Victimization – verbal	1				
Victimization – social	1				
Victimization – cyber	1				
Bully – physical	1				
Bully – verbal	1				
Bully – social	1				
Bully – cyber	1				
Self-esteem	8	.83	.80	.82	.83
Peer action (Bystander)	11	.89	.87	.88	.90
Peer inaction (Bystander)	4	.56	.49	.59	.64
Family responsiveness	3	.76	.64	.77	.75
Adult responsiveness	2	.79	.71	.80	.78
Adult respect and recognition	5	.81	.76	.83	.79
Bullying education	2	.80	.72	.78	.77
Student engagement	4	.73	.66	.70	.63
Student belonging	5	.77	.74	.76	.77
Student efficacy	9	.89	.86	.89	.87
Bullying climate	4	.70	.62	.69	.70
Climate of fear	5	.81	.82	.80	.83
Antisocial behaviour	5	.83	.73	.84	.85
Community safety	2	.68	.60	.71	.74

3.6.1.3 Level-2 Independent Variables

As previously noted, there are two levels (Level-1 and Level-2) of independent variables used in this thesis research. In the previous section, I have described each of the Level-1 variables. In this section I provide an overview of Level-2 predictor variables. Level-2 variables are variables that were collected at the teacher level and were gathered using teacher self-reports. Table 2 shows the reliabilities for each of these Level-2 variables. The scale of these items ranged from strongly disagree, moderately disagree, slightly disagree, slightly agree, moderately agree, to strongly agree. Fourteen measures of leadership in schools in the teacher survey reflect factors that could buffer the levels of bullying and victimization in schools. These factors relate to the conditions in the school, teachers, and whether teachers feel that their schools are safe.

The predictor variables included whether teachers thought their schools were student focused, students were involved in extracurricular activities, the schools had a caring culture, and leadership was collaborative. Predictor variables also included the level of parental and community engagement, and the extent to which a school focused on school development, and the school was an innovative school. Other measures were whether teachers were engaged in dialogue, whether data-driven decision-making was used, if professional development was valued, if there was ability to deal with difficult students, and whether they thought students were safe. All items in the survey were reverse scored from the original scale so that higher scores reflected positive school characteristics.

The student focused variable was designed to reflect teachers' feelings that the schools' goals were focused on student learning and teachers had a collective sense of

responsibility for those goals. It consisted of four items: 1) our school goals focus on student learning, 2) our school has explicit student performance expectations, 3) teachers in this school have a sense of collective responsibility for student learning, and 4) vision building in this school is focused on student learning. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .74. Higher scores indicate higher levels of focus on the student.

Student extracurricular activity was measured using three items: 1) our school provides a broad range of extracurricular/co-curricular (e.g. theatre, athletics, music) activities for students, 2) our school provides after school/lunch hour academic support activities, and 3) most of our students participate regularly in at least one extracurricular activity. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to have an overall reliability of .69. Higher scores indicate that the school has higher levels of extracurricular activity.

The caring culture variable was designed to capture whether the teachers felt their school was a caring school. The measure consisted of three items: 1) we continually examine curriculum materials to eliminate cultural and gender bias; 2) we provide opportunities for students to discuss the effects of intolerance on their lives; 3) administrators and staff are sensitive towards differences (e.g. cultural, economic, gender) when dealing with parents, teachers, and students. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .71. Higher scores indicate that the school has higher levels of caring culture.

The collaborative leadership variable was designed to determine if the school administrators were professional, collaborative, and innovative, that they gave the school a sense of overall purpose and protected it from distractions. The variable consisted of eight items and had the lead : My administrators... 1) give my school a sense of overall purpose; 2) follow through with their promises and commitments; 3) model a high level of professional practice; 4) encourage collaborative work among teachers; 5) ensure wide participation in decisions about school development; 6) encourage schools to try out alternative arrangements of personnel, time, and resources to improve teaching and learning; 7) frequently participate with my colleagues and me in discussions of educational issues; and 8) protect our school from distractions to our school development. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .91. Higher scores indicate that the school has higher levels of collaborative leadership.

Parental engagement was designed to capture the relationship which teachers had with parents, and if parents were included in the decision-making process. It consisted of three items: 1) I have a productive working relationship with parents in my school, 2) I integrate parent input into my decision-making process, and 3) I empower parents to participate in decision making related to things that happen in my classroom. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with a reliability of .78. Higher scores indicate that the school has higher levels of parental engagement.

The community engagement variable was designed to see how the school worked with parents, community groups, businesses, professional organizations, and how it

valued them as partners in the decision making process. It consisted of four items: 1) the community is a valued partner in the decision-making process; 2) this school works closely with parents, community service groups, businesses, professionals, etc; 3) in this school, the public are involved as influential decision makers; 4) this school recognizes the need to develop partnerships with groups that have been traditionally viewed as external and unconnected to schools (e.g. business, federal government agencies, service groups). The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .78. Higher scores indicate that the school had higher levels of community engagement.

The focused school development variable consisted of three items: 1) our school development efforts are based on clearly articulated goals and plans, 2) our school development plan targets specific curriculum areas, and 3) our school development plan drives teachers' professional development. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .71. Higher scores indicate that the school had higher levels of focused school development.

Just one item was used to determine if the school was an innovative school: this school is among the first to try out new and interesting ideas. The response options ranged from strongly disagree to strongly agree.

The teachers engage in dialogue consisted of five items: 1) most teachers in this school do not go along with the vocal people, because they want to get the meeting finished; 2) in this school, everyone's ideas are given equal weight in our discussions; 3) in this school there are no topics that cannot be discussed because we might offend

someone or violate an unspoken taboo; 4) I feel free to speak my mind during discussions with school and district administrators, without fear of reprisal; and 5) school administrators do not become defensive when their ideas are questioned by others. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .70. Higher scores indicate that the school has higher levels of dialogue among teachers.

The teachers engaging in data-driven decision-making variable consisted of seven items. These items were: 1) in our school, continuous improvement is viewed by most staff members as a necessary part of every job; 2) in our school, problems are viewed as issues to be solved, not as barriers to actions; 3) our school has the capacity for reliable assessment and feedback of student and school performance; 4) our teachers incorporate student and school performance data into school-level decision making; 5) the school uses student achievement data as an indicator of teacher professional developments needs and resources; 6) data about student achievement drives decision making in our school; and 7) in this school, decision-making is based on actual data rather than opinion. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .79. Higher scores indicate that the school has higher levels of data-driven decision-making.

The professional development variable consisted of three items: My professional development 1) plays a significant role in helping me make decisions about curriculum, 2) has helped me to use data more efficiently, and 3) has helped me to become a more effective teacher. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .87. Higher

scores indicate that teachers in the school place greater value on professional development.

The dealing with difficult students variable consisted of two items: 1) most of our teachers can get through to the most difficult students, and 2) most teachers in this school are skilled at dealing with disruptive students. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .81. Higher scores indicate that the teachers were better equipped to deal with difficult students.

The teacher collaboration variable was designed to see if teachers collaborated with one another concerning teaching and learning. It consisted of three questions: 1) most teachers in our school share a similar set of values, beliefs, and attitudes related to teaching and learning; 2) there is ongoing, collaborative work among teachers in our school; and 3) teachers in our school have ongoing conversations about teaching practice. The scale of these items ranged from strongly disagree to strongly agree. This variable was found to be reliable with an overall reliability of .79. Higher scores indicate that the teachers in the school have higher levels of teacher collaboration.

A final question was designed to capture the feeling of safety that teachers perceived to exist in their school. It was worded: Students feel safe in our school. The response options ranged from strongly disagree to strongly agree.

Table 2

Level-2 Reliability Coefficients for Variables, N=1,404

	Number of items	Alpha
Student focused	4	.74
Student extracurricular activities	3	.69
Caring culture	3	.71
Collaborative leadership	8	.91
Parental engagement	3	.78
Community engagement	4	.78
Focused school development	3	.71
An innovative school	1	-
Engage in dialogue	5	.70
Engage in data-driven decision-making	7	.79
Value professional development	3	.87
Dealing with difficult students	2	.81
Teacher collaboration	3	.79
Feel safe	1	-

3.7 Missing Data

Missing data are a problem in virtually all survey research and how it is dealt with can have consequences for research results (Enders, 2010). There are three types of missing data: missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR). MCAR happens when the data are missing without a pattern.   That is, "the data are MCAR when the probability of a missing data on variable X is unrelated to other measured variables and to the values of X itself" (Baraldi & Enders, 2010 pg. 7). Enders (2010) calls this missing data haphazard therefore the 'missingness' is not related to the data.

There are a number of ways of dealing with missing data. Pairwise and listwise deletion are the most commonly used methods, but are considered the least desirable

because they are said to produce biased parameter estimates because the data may not be MCAR (Enders, 2010). In addition, these deletion methods can dramatically reduce the sample size if there is a large proportion of missing data on a large number of items (Baraldi & Enders, 2010).

Methods such as multiple imputation and full maximum likelihood are considered better ways of handling missing data, and they are now available in most statistical software (Allison, 2012; Baraldi & Enders, 2010). Multiple imputations method fills in the missing data based on information from other variables in the data set and also creates multiple data sets.

Maximum likelihood method uses data from both missing and full data to find the best possible fit with the data that is available. The maximum likelihood procedure estimates parameters on the basis of complete data available along with the implied values of the missing data given the observed data. Maximum likelihood takes information from the complete data and arrives at an estimate based on the implied data. As a result the maximum likelihood estimation uses different combinations of the population parameter values until it identifies the particular set of values that produces the best fit for the data and comes closest to sample data (Enders, 2010). No data go unused with the procedure. The advantages of maximum likelihood over multiple imputation are: it is more efficient, only one data set is needed to arrive at unbiased results, with maximum likelihood the same result is achieved since only one data set is being used, maximum likelihood does not require as many decision rules as are required when using multiple imputation. A final advantage of maximum likelihood over multiple imputation is that the missing data and the analysis are conducted with the same set,

whereas, in multiple imputation there is always the potential conflict between the imputation model and the analysis model due to the number of multiple imputed data sets (Allison, 2012). As a result of the estimation procedure in maximum likelihood, the procedure produces accurate parameter estimates when the data are MCAR and MAR. When the data are NMAR, it produces some biased results but they are not biased throughout the entire model, and are considered better than the traditional methods for handling missing data (Schafer & Graham, 2002; Schlomer, Bauman & Card, 2010). As such, full maximum likelihood method is used for handling missing data in this thesis.

3.8 Data Analysis

The analysis of the data is carried out in three stages. In the first stage, scale items are prepared and any necessary recodes to the data are completed along with tests for normality. In the second stage, basic analyses, such as frequency distributions, cross-tabulations, and Pearson's correlations are conducted in order to see which Level-1 and Level-2 predictor variables are related to the dependent variables of victimization and bullying.

In the third stage of data analysis, eight multilevel logistic regressions are carried out on the victimization and bullying dependent variables. This type of analysis is used since the data are hierarchal in nature and the dependent variables are dichotomous. Given the existence of both student and school-level data and that the dependent variables are dichotomous, multilevel logistic regression was conducted using Hierarchical Linear Modeling (HLM) 6.08 software (Raudenbush, Bryk, & Congdon, 2012).

HLM is used when the data are nested such as students within schools. Nested data consist of two or more levels such as students within schools within school districts and in many cases within provinces. Researchers need to take into account that at each level there are unique characteristics that can have an impact on the outcome being studied. In the Canadian educational system, schools are located in provinces, school districts, and communities. In turn, students are situated in classrooms, schools, and school districts. Raudenbush and Bryk (2002) argued that educational research is challenging because students are nested in organizational settings. The student is influenced by interactions based on personal characteristics, classroom organization, and the characteristics of the teacher. Therefore, students nested within classrooms and within schools cannot be considered independent of one another. O'Connell and McCoach (2008) argued "when considering variance from data obtained through grouped or clustered designs, the hierarchical sources of variability cannot be ignored without seriously contributing to errors of inference, compromising the validity of results and research conclusions" (pg. 5).

Much of past research on bullying has been carried out using ordinary least squares regression analysis. Previous to HLM, data were aggregated either up to the Level-2 data (school level) or down to the Level-1 data (student level). That is to say, student data were matched with each school or aggregated to the student level data. This is known as the ecological fallacy and can lead the researcher into making incorrect findings since the data are aggregated (Nezlek, 2011). HLM helps deal with problems associated with univariate analysis such as the unit of analysis, which is the school; dependencies of individual responses within schools; confounding variables at both the

school level and individual level; and the manipulation of cross-level interactions (Ma, 2002; Ma, Ma & Bradley, 2008).

The hierarchal nature of these data is at two levels, students (Level-1) and schools (Level-2). As a result, a two level model is constructed for each dependent variable. When doing multilevel modeling the researcher first estimates the null model which is sometimes called the unconditional model with only the dependent variable and no explanatory variables. This analysis is carried out to determine if there are school level effects. At this point the intra-class correlations (ICC) were calculated to determine the influence of the individual schools on victimization or bullying behaviour. The ICC for victimization ranged from 3.5% to 5.0% and 3.5% to 12.4% for bullying behaviour and the results are significant which allowed for the creation of the next two models, the first with only Level-1 variables and then with both the Level-1 and Level-2 variables.

Having found significant differences among schools and victimization and bullying behaviours, the two-level models were constructed. The first model contains only the variables at Level-1 (the student level variables). This is called the student model of school effects. The addition of school level variables is called the contextual model of school effects. This model then allowed for the determination of which student and school variables predict the likelihood of a student becoming a victim of bullying or becoming a bully.

In HLM, variables are sometimes centered to make the results more meaningful. Three types of centering can be carried out. First the researcher can decide not to centre the data at all. The second option is to centre the variables on the group mean. The last option and the one chosen for this research is grand mean centering. This type of

centring is done for four reasons: 1) it makes the interpretation of the results more meaningful, 2) it produces results which are similar to the raw score model results, 3) it is not likely to alter the research questions relative to raw score model results and finally, 4) it helps reduce collinearity (high correlations) between predictive variables (Ma et al., 2008).

In estimating models, HLM creates a number of statistics used to determine the impact of Level-1 and Level-2 predictor variables on the dependent variables. At the outset, HLM provides the significance level of the models. This preliminary analysis allows for the examination of school level differences. Odds ratios are then used to determine which Level-1 and Level-2 predictors impact the dependent variables under study. Odds ratios are used to determine the level of impact of the independent variables on the dependent variables. An odds ratio represents the effect of an independent variable on the likelihood (or odds) of being either a victim of bullying or being a bully, relative to not being a victim or a bully. If the odds ratio is 1.0, then there is no relationship between the independent and dependent variable (Twisk, 2006). Odds ratios above 1.0 indicate that there is an increase in the likelihood of becoming a victim or of being a bully. Odds ratios below 1.0 indicate that there is a decrease in the likelihood of becoming a victim or of being a bully (Hair, Black, Babin, & Anderson, 2010). For this research the level for statistical significance was set at .05, which is the most common level of statistical significance used in educational and social sciences research (Huck, 2012).

3.9 Research Hypotheses

The theoretical approach to bullying used in this research is the social-ecological theory which examines the relationships that are a part of the individual student's day-to-day activities and how such interactions play a role in whether he or she becomes a victim or bully. Based on the literature review presented in chapter two, a series of non-directional hypotheses is put forward organized on the basis of who the individual student is interacting with along with the level of the data (individual and school).

3.9.1 Research Hypotheses for Bullying Victimization

This section presents a complete listing of the hypotheses relating to bullying victimization as derived from the literature presented in Chapter Two.

Hypotheses for Level-1 predictors

Individual characteristics: Individual characteristics such as gender, grade, and geographic location are hypothesized to significantly predict physical, verbal, social, and cyber victimization (Craig & McCuaig-Edge, 2008; Green et al., 2011; Nansel et al., 2001; Olweus, 1993). Self-esteem will significantly predict physical, verbal, social, and cyber victimization (O' Moore & Kirkham, 2001; Patchin & Hinduja, 2010; Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999; Wild, Flisher, Bhana, & Carl, 2004). Previous bullying experiences each significantly predict physical, verbal, social, and cyber victimization risks (Cappadocia et al., 2013, Hinduja & Patchin, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang, Iannotti, Luk, & Nansel, 2010).

Family: Family responsiveness is hypothesized to predict physical, verbal, social, and cyber victimization (Cook et al., 2010; Duncan, 2011).

Peers: Peer actions is hypothesized to significantly predict physical, verbal, social, and cyber victimization (Pozzoli & Gini, 2010; Rigby & Johnson, 2006).

School context: Adults' behaviour in schools (such as responsiveness) and bullying education are hypothesized to significantly predict physical, verbal, social, and cyber victimization (Barboza et al., 2009; Gregory et al., 2010; Harel-Fisch et al., 2010; Roland & Galloway, 2004b). Student engagement, student belonging, and student efficacy are hypothesized to significantly predict physical, verbal, social, and cyber victimization (Swearer & Espelage, 2011; Harel-Fisch et al., 2010; Khoury-Kassabri et al., 2004; Murray-Harvey, 2010). Bullying climate, climate of fear, and level of antisocial behaviour are hypothesized to significantly predict physical, verbal, social, and cyber victimization (Barboza et al., 2009; Cappadocia et al., 2013; Gregory et al., 2010; Harel-Fisch et al., 2010; Roland & Galloway, 2004b).

Community: Community safety is hypothesized to significantly predict physical, verbal, social, and cyber victimization (Chaux et al., 2009; Elgar et al., 2009).

Hypotheses for Level-2 predictors

School context: School level factors such as caring culture, students focus, and parental engagement are hypothesized to significantly predict physical, verbal, social, and cyber victimization (Barboza et al., 2009; Gregory et al., 2010; Harel-Fisch et al., 2011; Nansel et al., 2001; Roland & Galloway, 2004b).

3.9.2 Research Hypotheses for Bullying Behaviour

The hypotheses listed in this section largely parallel those stated in the previous section relating to victimization. In the section, however, the focus is on the bullying behaviour.

Hypotheses for Level-1 predictors

Individual characteristics: Individual demographic characteristics such as gender, grade, and geographic location are hypothesized to significantly predict physical, verbal, social, and cyber bullying (Craig & McCuaig-Edge, 2008; Green et al., 2011; Nansel et al., 2001; Olweus, 1993). Self-esteem is hypothesized to significantly predict physical, verbal, social, and cyber bullying (O'Moore & Kirkham, 2001; Patchin & Hinduja, 2010; Salmivalli et al., 1999; Wild et al., 2004). Previous bullying behaviours are hypothesized to significantly predict physical, verbal, social, and cyber bullying (Cappadocia et al., 2013; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010).

Family: Family responsiveness is hypothesized to significantly predict physical, verbal, social, and cyber bullying (Cook et al., 2010, Duncan, 2011).

Peers: Peer action is hypothesized to significantly predict physical, verbal, social, and cyber bullying (Pozzoli & Gini, 2010; Rigby & Johnson, 2006).

School context: Adults' behaviour in schools (such as responsiveness) and bullying education are hypothesized to significantly predict physical, verbal, social, and cyber bullying (Barboza et al., 2009; Gregory et al., 2010; Harel-Fisch et al., 2010; Roland & Galloway, 2004b). Student engagement, student belonging, and student

efficacy are hypothesized to significantly predict physical, verbal, social, and cyber bullying (Swearer & Espelage, 2011; Khoury-Kassabri et al., 2004; Murray-Harvey, 2010). Bullying climate, a climate of fear, and the level of antisocial behaviour are hypothesized to significantly predict physical, verbal, social, and cyber bullying (Barboza et al., 2009; Cappadocia et al., 2013; Gregory et al., 2010; Harel-Fisch et al., 2010; Roland & Galloway, 2004b).

Community: Community safety is hypothesized to significantly predict physical, verbal, social, and cyber bullying (Chaux et al., 2009; Elgar et al., 2009).

Hypotheses for Level-2 predictors

School context: School level factors such as caring culture, students focus, and parental engagement will significantly predict physical, verbal, social, and cyber bullying (Barboza et al., 2009; Gregory et al., 2010; Harel-Fisch et al., 2010; Roland & Galloway, 2004b).

3.10 Summary

In this chapter a description of the methodology employed in this research was put forward. The procedures used to collect the data from students and teachers were detailed. As well, a description of how major variables were defined and created was described. Variable reliabilities were then presented, along with an explanation of how missing data are handled and the approach to data analysis. Since the data consisted of both student and school-level data, and the dependent variables are dichotomous, the statistical approach used is multilevel logistic regression using HLM. This approach was taken to data analysis in order to take into account that at each level there are unique characteristics that can have an impact on the outcome being studied. Finally, each

hypothesis based on the social-ecological theoretical framework derived from the

literature review was presented (See Chapter 2). In the following chapter, a description

of the results of the data analysis will be put forward in three steps, first by providing

univariate analyses, then bivariate analyses, and finally the multilevel logistic regression

analyses with victimization and bullying behaviour.

Chapter 4

DATA ANALYSIS

4.1 Introduction
4.2 Descriptive Analyses
4.3 Bullying Victimization Dependent Variables Bivariate Analyses
4.4 Bivariate Analyses for Level-1 and Level-2 Variables and Types of Bullying Victimization
4.5 Results of Multilevel Logistic Regression Analysis on Bullying Victimization
4.6 Bivariate Analyses for Level-1 and Level-2 Variables and Types of Bullying
4.7 Results of Multilevel Logistic Regression Analysis on Bullying Behaviour

4.1 Introduction

This chapter provides the results from the Level-1(student level) and Level-2

(school level) predictor variables concerning school bullying, victimization, and bullying

behaviour. In the first part of the chapter, descriptive and bivariate results on various

independent and dependent variables are presented. Then the results from the bivariate

analyses on the eight dependent variables related to bullying victimization and bullying

are provided. Following that, the bivariate analyses for Level-1 and Level-2 predictor

variables for bullying victimization are provided. These analyses are designed to show

the individual influences of the Level-1 and Level-2 variables on the various types of

bullying victimization. Having provided the results of these analyses, the results of the

multilevel logistic regression analyses for bullying victimization behaviour are presented.

These are followed by the bivariate analyses for Level-1 and Level-2 predictor variables

for bullying. These aforementioned analyses are designed to show the individual

influences of the Level-1 and Level-2 variables on the various types of bullying. Finally,

the results of the multilevel logistic regression analyses for bullying behaviours are

presented.

4.2 Descriptive Analyses

Table 3 shows the results from questions concerning bullying victimization and

bullying behaviour. The most common type of bullying victimization is verbal with

60.4% of students indicating that they had been verbally bullied by another student at

least once over the past year. Cyber victimization, at 26.2%, is the least common type of

victimization. Verbal bullying is found to be the most common manifestation of this type

of behaviour, with 44.6% of students indicating that they had verbally bullied another

student at least once in the past year. Cyber bullying, at 18.2%, is the least common type

of bullying behaviour.

Table 3

Prevalence of Bullying Victimization and Bullying Behaviour during the Past 12 Months

	N	Never	Once or a few times	About once a month	About once a week	Many times a week
Victimization – physical	4190	60.3%	27.0%	4.8%	3.3%	4.6%
Victimization – verbal	4200	39.6%	36.1%	8.6%	6.8%	8.9%
Victimization – social	4190	47.9%	34.6%	7.7%	4.6%	5.1%
Victimization – cyber	4132	73.8%	17.2%	3.9%	2 .2%	2.9%
Bullying – physical	4191	69.2%	21.3%	3.7%	2.5%	3.2%
Bullying – verbal	4183	55.4%	31.6%	5.1%	3.5%	4.4%
Bullying – social	4185	64.7%	25.5%	4.5%	2.4%	2.9%
Bullying – cyber	4185	81.8%	11.3%	3.0%	1.6%	2.3%

The next set of analyses examined the various types of victimization and bullying by gender, geographic location of the schools, and grade level. Due to the fact that the data are at the nominal level of measurement, the chi-square, a nonparametric test, was used to determine if there were statistical differences in victimization and bullying behaviour across gender, students' geographic locations, and grade. Table 4 shows the results from the questions on bullying victimization and bullying behaviour and gender. Males are more likely than females to be victims of physical bullying (48.3% compared to 31.0%), $X^2(4, n = 3999) = 164.14$, $p < .001$. Females are more likely to be victims of verbal, social, and cyber bullying than males. The largest difference for gender and bullying victimization is for social victimization with 61.1% of females indicating that they had been socially bullied at least once during the past 12 months versus 43.3% for males, $X^2(4, n = 3999) = 132.77$, $p < .001$. The next largest difference is for cyber victimization with 30.3% of females indicating that they had been cyber bullied at least once during the past 12 months compared to 21.8% for males, and this is statistically different $X^2(4, n = 3944) = 67.67$, $p < .001$. Finally, there is a small, but statistically significant difference between females (62.0%) and males (59.0%) in their reporting having been victims of verbal bullying $X^2(4, n = 4008) = 23.69$, $p < .001$.

In terms of bullying behaviour males are more likely to admit to engaging in physical, verbal, and cyber bullying. For physical bullying, 41.6% of males admitted to physically bullying other students compared to 20.1% for females at least once or a few times during the past year, $X^2(4, n = 4002) = 224.67$, $p < .001$. For verbal bullying, 48.4% of males and 41.3% of females admitted to verbally bullying others at least once or a few times during the past year, $X^2(4, n = 3995) = 66.54$, $p < .001$. For cyber

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bullying, 18.2% of males admitted to verbally bullying others while 17.9% of females

admitted bullying at least once or a few times during the past year, $X^2(4, n = 3997) =$

53.21, p < .001. While these results are statistically different, the percentages are

virtually identical. Females were more likely than males to indicate that they were social

bullies with 39.2% of females indicating that they had socially bullied other students

compared to 31.6% of males indicating this type of bullying, once again these findings

are statistically significant $X^2(4, n = 3996) = 67.03$, p < .001.

Table 4

Prevalence of Bullying Victimization and Bullying Behaviour by Gender during the past 12 Months

	N	Males[a]	Females[a]	X^2
Victimization – physical	3999	48.3%	31.0%	164.14, df = 4, p < .001
Victimization – verbal	4008	59.0%	62.0%	23.69, df = 4, p < .001
Victimization – social	3999	43.3%	61.1%	132.77, df = 4, p < .001
Victimization – cyber	3944	21.8%	30.3%	67.67, df = 4, p < .001
Bullying – physical	4002	41.6%	20.1%	224.67, df = 4, p < .001
Bullying – verbal	3995	48.4%	41.3%	66.54, df = 4, p < .001
Bullying – social	3996	31.6%	39.2%	67.03, df = 4, p < .001
Bullying – cyber	3997	18.2%	17.9%	53.21, df = 4, p < .001

Note. [a]Results are for those students indicating that they were bullied or were a bully once or a few times to many times a week.

Table 5 shows the results from the questions on bullying victimization and

bullying behaviour by geographic location. None of the results are significant at the p <

0.05, level which indicates that whether the student lives in a rural or urban location did

not make a difference in terms of being a victim of bullying or engaging in bullying

behaviours.

Table 5

Prevalence of Bullying Victimization and Bullying Behaviour by Geographic Location during the Past 12 Months

	N	Rural[a]	Urban[a]	X^2
Victimization – physical	4190	40.1%	39.5%	0.79, df = 4, p > .05
Victimization – verbal	4200	60.0%	60.5%	7.78, df = 4, p > .05
Victimization – social	4190	52.4%	51.9%	4.01, df = 4, p > .05
Victimization – cyber	4132	26.3%	26.1%	0.75, df = 4, p > .05
Bullying – physical	4191	32.4%	30.2%	4.32, df = 4, p > .05
Bullying – verbal	4183	46.4%	44.0%	4.13, df = 4, p > .05
Bullying – social	4185	36.5%	34.9%	6.10, df = 4, p > .05
Bullying – cyber	4185	20.0%	17.6%	7.09, df = 4, p > .05

Note. [a]Results are for those students indicating that they were bullied or were a bully once or a few times to many times a week.

Table 6 displays the results from the questions on bullying victimization and bullying behaviour by grade level. Grade 6 students reported the highest levels of physical victimization (44.9% compared to 40.0% and 31.5% for Grade 9s and 12s respectively), with these results being significantly different X^2(8, n = 4142) = 61.44, p < .001. Grade 9s are more likely than either Grade 6s or Grade 12s to be victims of verbal bullying: 64.4% compared with 60.0% for Grade 12s and 57.1% for Grade 6s. These differences are significantly different X^2(8, n = 4152) = 24.74, p < .01. Grade 12s are more likely than either Grade 6s or Grade 9s to be victims of social bullying (56.2%, X^2(8, n = 4142) = 41.59, p < .001 and cyber bullying (32.0%, X^2(8, n = 4084) = 107.91, p < .001). However, the differences between the Grade 9s and 12s were not large, being less than 3% in both cases. The largest difference between grades for these two variables were between Grade 6 and Grade 12 with there being an almost 10% difference for social victimization and almost 15% difference for cyber bullying.

Table 6

Prevalence of Bullying Victimization and Bullying Behaviour by Grade Level during the Past 12 Months

	N	Grade 6[a]	Grade 9[a]	Grade[a] 12	X^2
Victimization – physical	4142	44.9%	40.0%	31.5%	61.44, df = 8, p < .001
Victimization – verbal	4152	57.1%	64.4%	60.0%	24.74, df = 8, p < .01
Victimization – social	4142	47.4%	54.4%	56.2%	41.59, df = 8, p < .001
Victimization – cyber	4084	17.4%	30.8%	32.0%	107.91, df = 8, p < .001
Bullying – physical	4143	28.5%	36.0%	26.8%	77.96, df = 8, p < .001
Bullying – verbal	4135	33.9%	52.7%	49.0%	154.97, df = 8, p < .001
Bullying – social	4137	25.0%	41.5%	41.8%	139.31, df = 8, p < .001
Bullying – cyber	4137	8.2%	24.6%	24.0%	180.43, df = 8, p < .001

Note. [a]Results for those students indicating that they were bullied or were a bully once or a few times to many times a week.

In terms of bullying behaviour, Grade 6 students showed the lowest levels of three types of bullying and are less likely to admit to engaging in physical, verbal, and cyber bullying. For physical bullying, 36.0% of the Grade 9s admitted to physically bullying others at least once or a few times during the past year, compared to 26.8% for Grade 12s, and 28.5% for Grade 6 students. The differences across grades are significantly different X^2(8, n = 4143) = 77.96, p < .001. For verbal bullying, 52.7% of Grade 9s admitted to verbally bullying other students at least once or a few times during the past year compared with 49.0% for Grade 12s and 33.9% of Grade 6's. These differences are also significantly different X^2(8, n = 4135) = 154.97, p < .001. For social bullying, 41.8% of Grade 12s admitted to socially bullying others at least once or a few times during the past year, compared to 41.5% for Grade 9's while the 25.0% of Grade 6's. These results are also statistically significant X^2(8, n = 4137) = 139.31, p < .001. For cyber bullying, 24.6% of Grade 9s admitted to cyber bullying other students at least once or a few times during the past year compared with 24.0% of the Grade 12s and 8.2% of Grade 6

students. These differences are significant X^2(8, n = 4137) = 180.43, p < .001. While these results are statistically different the percentages, for physical, verbal and social bullying are virtually identical for Grade 9 and 12 students. There are; however, considerable differences when Grade 6 students are compared to the Grade 9 and Grade 12 students.

Tables 7 and 8 provide descriptive statistics on the various Level-1 and Level-2 predictor variables to be used later in the multilevel logistic regression analyses. The statistics provided are the mean, standard deviation, minimum and maximum scores, along with the skewness statistics for each variable. For those variables coded zero to one, the mean can be interpreted as a percentage. Table 7 displays the descriptive statistics for the Level-1 variables. For bullying victimization, verbal victimization is the highest type of victimization at 60%. This is followed by social victimization (52%), physical victimization (40%), and finally cyber victimization (26%). In terms of bullying behaviour, verbal bullying occurs most often with 45% of students admitting to verbal bullying at least once in the past year. Following in the level of prevalence are social bullying (35%), physical bullying (31%), and cyber bullying (18%).

In terms of gender, 51% of the sample is female. In terms of grade levels, 38% of the sample is made up of students in Grade 6, 36% were in Grade 9, and 26% were in Grade 12. Seventy-four percent of the students in the sample are from urban areas. Skewness is a statistic that needs to be addressed when doing quantitative analysis. Huck (2012) indicates that there are no clear guidelines when interpreting measures of skewness, but that many use values from 1- to +1 to determine if data are skewed. The

skewness statistics for most of these variables are within acceptable levels since all are within the range or not far from ±1 and as such no further adjustment is necessary.

Table 7

Descriptive Data on the Level-1 Independent and Dependent Variables used in the Data Analysis

Level-1 variables	N	Mean	Standard deviation	Min-Max	Skewness
Victimization – physical	4190	.40	.49	0-1	.42
Victimization – verbal	4200	.60	.49	0-1	-.43
Victimization – social	4190	.52	.50	0-1	-.08
Victimization – cyber	4132	.26	.44	0-1	1.08
Bullying – physical	4191	.31	.46	0-1	.83
Bullying – verbal	4183	.45	.50	0-1	.22
Bullying – social	4185	.35	.48	0-1	.62
Bullying – cyber	4185	.18	.39	0-1	1.65
Gender	4044	.51	.50	0-1	-.03
Grade 6	4193	.38	.49	0-1	.49
Grade 9	4193	.36	.48	0-1	.57
Grade 12	4193	.26	.44	0-1	1.12
Rural/urban	4246	.74	.44	0-1	-1.11
Self-esteem	4168	32.18	4.40	8-40	-.73
Peer action (Bystander)	3911	28.53	9.89	11-55	.23
Family responsiveness	4188	13.28	2.43	3-15	-1.79
Adult responsiveness	4174	7.76	2.13	2-10	-.87
Adult respect and recognition	4158	19.89	4.21	5-25	-1.02
Bullying education	3971	7.27	2.27	2-10	-.57
Student engagement	3833	13.60	3.53	4-20	-.31
Student belonging	4146	18.45	3.77	5-25	-.75
Student efficacy	3724	29.71	7.30	9-45	-.25
Bullying climate	4118	14.88	3.54	4-20	-.58
Climate of fear	4177	9.76	3.92	5-25	1.14
Antisocial behaviour	4146	7.27	3.61	5-25	2.60
Community safety	4212	8.40	1.77	2-10	-1.55

The bulk of the remaining Level-1 predictor variables in Table 7 indicate that most are normally distributed. These predictor variables include family, adult relationships, student interactions within schools, and community safety. It should be

noted that only five of the variables are overly skewed, that is they are above 1 or less than 1. This finding is important since having too many variables which are not normal can have an impact on the final results. In these cases it is sometimes useful to transform the data, but since there were few that are somewhat skewed and the guidelines of what is considered not normally distributed is not clear, it was decided not to do any data transformations.

Table 8 displays the descriptive statistics on the various Level-2 predictor variables to be used later in the multilevel logistic regression analyses. All of the variables have normal distributions, as can be seen by their skewnesss statistics, which are all between -1 and +1.

Table 8

Descriptive Data on the Level-2 Independent Variables used in the Data Analysis

	N	Mean	Standard deviation	Min-Max	Skewness
Student focused	62	20.96	1.31	4-24	-.25
Student extracurricular activities	62	14.34	1.65	3-18	-.32
Caring culture	62	13.64	1.07	3-18	.05
Collaborative leadership	62	40.92	3.46	8-48	-.70
Parental engagement	62	13.99	1.02	3-18	-.27
Community engagement	62	17.69	1.81	4-24	-.22
Focused school development	62	15.49	1.20	3-18	-.78
An innovative school	62	4.68	.54	1-6	.11
Engage in dialogue	62	20.07	2.83	5-30	-.09
Engage in data-driven decision-making	62	33.88	2.08	7-42	-.31
Value professional development	62	14.31	1.20	3-18	-.31
Dealing with difficult students	62	9.32	.85	2-12	-.24
Teacher collaboration	62	14.70	1.21	3-18	-.16
Feel Safe	62	5.18	.54	1-6	-.84

4.3 Bullying Victimization and Bullying Dependent Variables Bivariate Analyses

Before proceeding to more advanced statistical analyses, it is important to understand the relationships between the various Level-1 and Level-2 independent and dependent variables. For the purpose of this research Pearson's correlation was used to determine the strength of relationships as well as whether the relationships are statistically significant at $p < .05$ level. All tests were done using two-tailed tests.

Table 9 indicates the relationships between the Level-1 dependent variables. Physical victimization is positively correlated to verbal victimization ($r = .43$, $p < .001$) suggesting that victims of physical bullying are also subjected to verbal victimization. Physical victimization is to a lesser extent correlated with social victimization ($r = .29$, $p < .001$), suggesting that some students who are physically bullied are also socially victimized. Physical victimization is also weakly correlated with cyber victimization ($r = .23$, $p < .001$). Physical victimization is correlated with physical bullying ($r = .42$, $p < .001$), suggesting that these students are also physical bullies. Physical victimization is also correlated with verbal bullying ($r = .29$, $p < .001$) suggesting that some students are also verbal bullies. Physical victimization is correlated with social bullying ($r = .19$, $p < .001$), indicating that some students are also social bullies. Finally, physical victimization is also correlated with the cyber bullying ($r = .17$, $p < .001$), suggesting that these students also engage in cyber bullying.

Table 9

Correlations for Level-1 Dependent Variables

	1	2	3	4	5	6	7	8
1. Victimization – physical								
2. Victimization – verbal	.43***							
3. Victimization – social	.29***	.44***						
4. Victimization – cyber	.23***	.31***	.34***					
5. Bullying – physical	.42***	.24***	.15***	.22***				
6. Bullying – verbal	.29***	.42***	.28***	.27***	.49***			
7. Bullying – social	.19***	.27***	.38***	.30***	.33**	.49***		
8. Bullying – cyber	.17***	.20***	.20***	.50***	.33***	.38***	.41***	

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

The next set of correlations addresses verbal victimization. Verbal victimization is correlated to social victimization (r = .44, p < .001), which suggests that some students who are verbally bullied are also socially victimized and the results are significant. Verbal victimization is to a lesser extent related to cyber victimization (r = .31, p < .001), which indicates that some students who are verbally bullied are also cyber bullied. Verbal victimization is also correlated with physical bullying (r = .24, p < .001), suggesting that being a victim of this form of bullying makes an individual more likely to be a physical bully. Verbal victimization is also positively correlated with verbal bullying (r = .42, p < .001), suggesting that these students are verbal bullies as well. Verbal victimization is also correlated with social bullying (r = .27, p < .001), suggesting that these students are social bullies. Finally, verbal victimization is also correlated with the cyber bullying (r = .20, p < .001), suggesting that some of these students are also cyber bullies.

The next series of correlations addresses social bullying victimization. Social victimization is correlated to cyber victimization (r = .34, p < .001), which indicates that some students who are socially bullied are also cyber victimized. Social victimization is to a lesser extent related to physical bullying (r = .15, p < .001), which suggests that some students who are victims of socially bullying are also physical bullies. Social victimization is also correlated with verbal bullying (r = .28, p < .001), suggesting that some of these students are verbal bullies. Social victimization is also correlated with the social bullying (r = .38, p < .001), suggesting that these students are also social bullies. Social victimization is also positively correlated with the cyber bullying (r = .20, p < .001), suggesting that these students are also cyber bullies.

The following set of correlations addresses cyber victimization. Cyber victimization correlates to physical bullying (r = .22, p < .001), which suggests that some students who are cyber bullied are also physical bullies. Cyber victimization is positively correlated to verbal bullying (r = .30, p < .001), which suggests that some students who are victims of cyber bullying are also social bullies. Cyber victimization is also correlated with cyber bullying (r = .50, p < .001), meaning that these students are also cyber bullies.

Physical bullying is positively correlated to verbal bullying (r = .49, p < .001), suggesting that some physical bullies are also verbal bullies. Physical bullying is to a lesser extent related to social bullying (r = .33, p < .001), which indicates that some students who physically bully are also socially bullying. Physical bullying is also correlated with cyber bullying (r = .33, p < .001). Verbal bullying is correlated with social bullying (r = .49, p < .001), which suggests that some students who are verbal bullies are also bullies who bully socially. Verbal bullying is correlated with cyber bullying (r = .38, p < .001). Finally, social bullying is also correlated with cyber bullying (r = .41, p < .001), which suggests that some of those who socially bully are also engaging in cyber bullying.

Table 10 presents the results of the Level-1 predictor variables in relation to one another. Most of the correlations ranged from low to moderate. For the purposes of the analysis none of the variables pose the risk of multicolinearity.

Table 11 presents the results for the Level-2 predictor variables and how they correlate to one another. Most of the correlations ranged from moderate to high. As with the Level-1 predictors none of the variables pose the risk of multicolinearity.

Table 10

Bivariate Correlations for Level-1 Predictor Variables

Level-1 variables	Gender	Geographic status	Grade 6	Grade 9	Grade 12	Student engagement	Student belonging
Gender (1=Female)							
Geographic status (1=Urban)	.02						
Grade 6 (1=Grade 6)	-.02	.04***					
Grade 9 (1=Grade 9)	.01	.01	-.59***				
Grade 12 (1= Grade 12)	.01	-.06***	-.46***	-.44***			
Student engagement	.07***	-.03	.42***	-.28***	-.15***		
Student belonging	.09***	.03	.22***	-.14***	-.09***	.54***	
Student efficacy	.07***	-.01	.37***	-.25***	-.14***	.80***	.59***
Self-esteem	.02	.01	.26***	-.17***	-.10***	.36***	.45***
Peer action (Bystander)	.13***	-.02	.29***	-.17***	-.14***	.41***	.23***
Family responsiveness	.03	.00	.27***	-.08***	-.21***	.39***	.43***
Adult responsiveness	.08***	.00	.32***	-.18***	-.16***	.57***	.49***
Adult respect and recognition	.10***	-.03	.30***	-.18***	-.14***	.59***	.53***
Bullying climate	.19***	.01	.30***	-.23***	-.08***	.46***	.28***
Community safety	-.01	.00	.01	-.02	.02	.21***	.30***
Bullying education	.08***	-.01	.37***	-.13***	-.27***	.60***	.39***
Climate of fear	.05***	-.01	.04*	-.01	-.04*	-.21***	-.50***
Antisocial behaviour	-.25***	.01	-.20	.13***	.08***	-.40***	-.31***

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

Table 10

Bivariate Correlations for Level-1 Predictor Variables - continued

Level-1 variables	Student efficacy	Self- esteem	Peer action (Bystander)	Family responsiveness	Adult responsiveness
Gender (1=Female)					
Geographic status (1=Urban)					
Grade 6 (1=Grade 6)					
Grade 9 (1=Grade 9)					
Grade 12 (1= Grade 12)					
Student engagement					
Student belonging					
Student efficacy					
Self-esteem	.40***				
Peer action (Bystander)	.47***	.23***			
Family responsiveness	.39***	.38***	.18***		
Adult responsiveness	.58***	.27***	.26***	.40***	
Adult respect and recognition	.58***	.38***	.29***	.50***	.63***
Bullying climate	.44***	.25***	.35***	.31***	.40***
Community safety	.20***	.16***	.04*	.25***	.23***
Bullying education	.66***	.27***	.37***	.35***	.55***
Climate of fear	-.24***	-.26***	.04*	-.26***	-.24***
Antisocial behaviour	-.37***	-.22***	-.19***	-.34***	-.40***

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

Table 10

Bivariate Correlations for Level-1 Predictor Variables - continued

Level-1 variables	Adult respect and recognition	Bullying climate	Community safety	Bullying education	Climate of fear
Gender (1=Female)					
Geographic status (1=Urban)					
Grade 6 (1=Grade 6)					
Grade 9 (1=Grade 9)					
Grade 12 (1= Grade 12)					
Student engagement					
Student belonging					
Student efficacy					
Self-esteem					
Peer action (Bystander)					
Family responsiveness					
Adult responsiveness					
Adult respect and recognition					
Bullying climate	.44***				
Community safety	.27***	.16***			
Bullying education	.53***	.40***	.17***		
Climate of fear	-.26***	-.11***	-.33***	-.15***	
Antisocial behaviour	-.45***	-.49***	-.22***	-.34***	.22***

Note: *** = p < .001, ** = p < .01, * = p < .05.

Table 11

Bivariate Correlations for Level-2 Predictor Variables

Level-2 variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Student focused													
2. Student extracurricular activities	.28***												
3. Caring culture	.68***	.01											
4. Collaborative leadership	.72***	.23***	.62***										
5. Parental engagement	.63***	-.10***	.66***	.42***									
6. Community engagement	.65***	.28***	.63***	.50***	.63***								
7. Focused school development	.80***	.11***	.68***	.67***	.67***	.72***							
8. An innovative school	.52***	.49***	.24***	.50***	.02	.41***	.44***						
9. Engage in dialogue	.55***	.18***	.52***	.69***	.29***	.42***	.49***	.19***					
10. Engage in data-driven decision-making	.88***	.27***	.67***	.70***	.68***	.78***	.87***	.48***	.53***				
11. Value professional development	.64***	-.10***	.67***	.53***	.76***	.58***	.74***	.02	.45***	.67***			
12. Dealing with difficult students	.72***	.09***	.77***	.65***	.60***	.63***	.71**	.24***	.60***	.63***	.66***		
13. Teacher collaboration	.70***	.08***	.72***	.55***	.60***	.48***	.68***	.20***	.56***	.71***	.60***	.65***	
14. Safety	.65***	.22***	.52***	.48***	.45***	.52***	.55***	.34***	.37***	.47***	.50***	.66***	.38***

Note: *** = $p < .001$, ** = $p < .01$, * = $p < .05$.

4.4 Bivariate Analyses for Level-1 and Level-2 Variables and Bullying Victimization

Table 12 provides the results of Pearson's correlations for Level-1 predictor variables in relation to the four types of bullying victimization. All Pearson correlations were completed using two-tails tests. The purpose of this analysis is to determine the individual impacts of the individual variables on each of the bullying victimization dependent variables.

Table 12

Level-1 Predictor Variable Correlations by Victimization Types

Level-1 predictor variables	Physical	Verbal	Social	Cyber
Gender (Female = 1)	-.18***	.03	.18***	.10***
Grade 6	.08***	-.05***	-.08***	-.15***
Grade 9	.01	.06***	.03*	.08***
Grade 12	-.10***	-.01	.05**	.08***
Rural/urban	-.01	.00	.00	.00
Self-esteem	-.12***	-.15***	-.14***	-.16***
Family responsiveness	-.13***	-.15***	-.14***	-.21***
Peer action (Bystander)	.01	.01	.03	.04*
Adult responsiveness	-.16***	-.17***	-.15***	-.21***
Adult respect and recognition	-.15***	-.16***	-.14***	-.21***
Bullying education	-.08***	-.11***	-.10***	-.18***
Student engagement	-.13**	-.18***	-.14***	-.19***
Student belonging	-.26***	-.28***	-.24***	-.23***
Student efficacy	-.15***	-.18***	-.16***	-.19***
Climate of fear	.36***	.39***	.39***	.33***
Bullying climate	-.18***	-.12***	-.07***	-.18***
Antisocial behaviour	.28***	.19***	.10***	.24***
Community safety	-.16***	-.12***	-.12***	-.18***

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

Individual Factors. Males are more likely than females to be the victims of physical bullying with a correlation of r = -.18, p < .001, whereas females are more likely than males to be victims of social and cyber victimization (r = .18, p < .001, r = .10, p < .001). Grade 6 students are most likely to be victims of physical bullying and least likely

to be victims of verbal bullying ($r = -.05$, $p < .001$). Grade 9 students are most likely to be victims of all types of bullying with cyber victimization being the highest.

Grade 12 students are most likely to be victims of social and cyber bullying and least likely to be victims of physical and verbal bullying ($r = .08$, $p < .001$, $r = -.05$, $p < .001$, $-.08$, $p < .001$, and $r = -.15$, $p < .001$). Geographic status is not significantly related to any type of victimization.

Student self-esteem is negatively and weakly related to all types of victimization, suggesting that higher levels of student self-esteem is related to lower levels of bullying victimization. The strongest correlation for student self-esteem is with cyber victimization at $r = -.16$, $p < .001$. The weakest correlation for self-esteem is with physical victimization at $r = -.12$, $p < .001$.

Family factors. Family responsiveness is negatively related to all types of victimization, indicating that higher levels of family responsiveness is related to lower levels of bullying victimization. The strongest correlation for family responsiveness is with cyber victimization at $r = -.21$, $p < .001$. The weakest correlation for family responsiveness is with physical victimization at $r = -.13$, $p < .001$.

Peers. Peer action is positively but weakly correlated to all types of victimization, suggesting that higher levels of peer action are related to higher levels of victimization. The strongest correlation for peer action, and the only one that is significant is with cyber victimization at $r = .04$, $p < .05$.

School context. Adult responsiveness, adult respect and recognition, and bullying education are all significantly correlated to all types of victimization. Adult responsiveness is negatively related to all types of victimization meaning that higher

levels of adult responsiveness are related to lower levels of bullying victimization. The strongest correlation for adult responsiveness is with cyber victimization at r = -.21, p < .001. The weakest correlation for adult responsiveness is with social victimization at r = -.15, p < .001.

Adult respect and recognition are negatively related to all types of victimization, meaning that higher levels of adult respect and recognition is correlated to lower levels of bullying victimization. The strongest correlation for adult respect and recognition is with cyber victimization at r = -.21. The weakest correlation for adult respect and recognition is with social victimization at r = -.14, p < .001.

Bullying education is negatively related to all types of victimization suggesting that higher levels of bullying education are related to lower levels of bullying victimization. The strongest correlation for bullying education is with cyber victimization at r = -.18, p < .001. The weakest correlation for bullying education is with physical victimization at r = -.08, p < .001.

Student engagement, student belonging, and student efficacy were examined in relation to bullying victimization. Student engagement is negatively related to all types of victimization, indicating that higher levels of student engagement are related to lower levels of bullying victimization. The strongest correlation for student engagement is with cyber victimization at r = -.19, p < .001. The weakest correlation for student engagement is with physical victimization at r = -.13, p < .001.

Student belonging is negatively correlated to all types of victimization, meaning that higher levels of student belonging is related to lower levels of bullying victimization. The strongest correlation for student belonging is with verbal victimization at r = -.28, p

< .001. The weakest correlation for student belonging is with cyber victimization at r = -.23, p < .001.

Student efficacy is negatively but weakly correlated to all types of victimization, indicating that higher levels of student efficacy are related to lower levels of bullying victimization. The strongest correlation for student efficacy is with cyber victimization at r = -.19, p < .001. The weakest correlation for student engagement is with physical victimization at r = -.15, p < .001.

Three variables examined the level of problem behaviours which can occur in schools. These included a climate of fear, bullying climate in the schools, and whether there was antisocial behaviour occurring in the schools. All variables are significantly correlated to all types of victimization. Climate of fear is positively correlated to all types of victimization, suggesting that higher levels of fear are related to higher levels of victimization. The strongest correlation for climate of fear is with social and verbal victimization with both at r = .39, p < .001. The weakest correlation for climate of fear is with cyber victimization at r = .33, p < .001.

Bullying climate is negatively correlated to all types of victimization, meaning that higher levels of bullying climate is related to lower levels of bullying. The strongest correlation for bullying climate is with physical and cyber victimization, with both at r = -.18, p < .001. The weakest correlation for bullying education is with social victimization at r = -.07, p < .001.

Antisocial behaviour is positively correlated related to all types of victimization, indicating that higher levels of antisocial behaviour are related to higher levels of victimization. The strongest correlation for antisocial behaviour is with physical

victimization at r = .28, p < .001. The weakest correlation for antisocial behaviour is with social victimization at r = .10, p < .001.

Community. Community safety is negatively related to all types of victimization, meaning that higher levels of community safety is related to lower levels of bullying victimization. The strongest correlation for community safety is with cyber victimization at r = -.19, p < .001.   Finally, the weakest correlation for community safety is with verbal and social victimization, with both at r = -.12, p < .001.

Table 13 displays the results for the Level-2 predictor variables in relation to the four types of victimization. Surprisingly, none of the correlations are greater than .10, indicating that the Level-2 predictors do not exert much influence on the dependent victimization variables. Twelve of the predictor variables achieve significance for physical bullying victimization, and in most cases they are not in the hypothesized direction.

Table 13

Level-2 Pearson's correlations for all bullying victimization types, N=62

Level-2 variables	Physical	Verbal	Social	Cyber
Student focused	.04*	-.03*	-.02	-.04**
Student extracurricular activities	-.08***	-.02	.00	.03*
Caring culture	.07***	-.01	-.01	-.05**
Collaborative leadership	.04*	-.01	-.03	-.02
Parental engagement	.09***	.01	.00	-.03
Community engagement	.05*	-.03*	.00	.00
Focused school development	.06***	-.02	-.03*	-.03
An innovative school	-.03	-.05**	-.03	-.02
Engage in dialogue	.03*	.01	.00	.00
Engage in data-driven decision-making	.06***	-.03	-.04*	-.03
Value professional development	.09***	-.01	-.03	-.04**
Dealing with difficult students	.05**	.00	.00	-.03
Teacher collaboration	.06***	.00	-.03*	-.04*
School safety	-.01	-.03	.00	-.05**

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

4.5 Results of Multilevel Logistic Regression Analysis on Bullying Victimization

The previous section showed the results for both Level-1 (student level) and

Level-2 (school level) predictor variables in relation to the various types of bullying

victimization. In this section, the effects of controlling for each of these variables in

relation to one another is carried out to see which predictor variables, when controlled,

can predict bullying victimization. Tables 14 through 17 provide the results of the

multilevel logistic regression analyses for the four types of bullying victimization. These

tables address physical, verbal, social, and cyber bullying victimization, respectively.

Odds ratios were used to determine the impact of the independent variables on each of

the dependent variables. An odds ratio represents the effect of an independent variable on the likelihood (or odds) of being either a victim of bullying or being a bully, relative to not being a victim or a bully. If the odds ratio is 1.0, then there is no relationship between the independent and dependent variable (Twisk, 2006).

Table 14 displays the results for two models constructed after running the unconditional null model without any Level-1 (student level) or Level-2 (school level) predictor variables included for physical bullying victimization. The unconditional null model reveals that there are significant differences among the schools on physical bullying victimization (X^2=185.46, df =61, p = .001). The intra-class correlation coefficient (ICC), which is the between and within schools variance, is 3.9% for physical bullying victimization. The ICC examines the ratio of the variability between schools to the variability within those schools at Level-1 (Tabachnick & Fidell, 2013). The ICC revealed that 3.9% of the variance can be explained between schools for physical bullying victimization.

Ten Level-1 predictors are significantly related with physical bullying victimization: being female (OR = .35, p < .001), Grade 9 (OR = .45, p < .001), Grade 12 (OR = .29, p < .001), having been a victim of verbal (OR = 4.99, p < .001), social, (OR = 1.89, p < .001), or cyber bullying (OR = 1.47, p < .001), student belonging (OR = .96, p < .001), bullying climate (OR = 0.94, p <.001) , climate of fear (OR = 1.11, p < .001), and antisocial behaviour (OR = 1.10, p <.001).

The addition of Level-2 predictors when running Model 2 did not alter the results from the first model. Interestingly, only two Level-2 predictor variables are significantly

related to physical bullying victimization: student extracurricular activities (OR = 0.88, p

< .01) and teachers engaging in dialogue (OR = 0.94, p < .05).

Table 14

Results of Multilevel Logistic Analysis of Level-1 and Level-2 Predictors on Physical Bullying Victimization

Scales	Model 1 N=3068		Model 2 N=3054	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1 predictor variables				
Gender (1=Female)	.35***	(0.28-0.44)	0.35***	(0.28-0.44)
Geographic status (1=Urban)	0.97	(0.79-1.19)	0.86	(0.64-1.17)
Grade 9 (1=Grade 9)	0.45***	(0.35-0.57)	0.50***	(0.38-0.66)
Grade 12 (1= Grade 12)	0.29***	(0.22-0.40)	0.33***	(0.22-0.49)
Self-esteem	1.01	(0.98-1.04)	1.01	(0.98-1.04)
Victim of verbal bullying	4.99***	(3.98-6.27)	5.13***	(4.09-6.43)
Victim of social bullying	1.89***	(1.50-2.38)	1.88***	(1.49-2.37)
Victim of cyber bullying	1.47**	(1.15-1.1.87)	1.46***	(1.15-1.87)
Family responsiveness	0.99	(0.95-1.03)	0.99	(0.95-1.03)
Peer action (Bystander)	1.00	(0.99-1.02)	1.00	(0.99-1.01)
Adult responsiveness	0.96	(0.91-1.01)	0.95	(0.91-1.00)
Adult respect and recognition	1.03	(0.99-1.07)	1.03	(1.00-1.07)
Bullying education	1.03	(0.98-1.09)	1.04	(0.98-1.09)
Student engagement	1.00	(0.96-1.05)	1.01	(0.96-1.05)
Student belonging	0.96*	(0.93-1.00)	0.96**	(0.93-0.99)
Student efficacy	1.00	(0.98-1.02)	1.00	(0.98-1.02)
Bullying climate	0.94***	(0.91-0.98)	0.94***	(0.91-0.97)
Climate of fear	1.11***	(1.07-1.14)	1.11***	(1.07-1.14)
Antisocial behaviour	1.10***	(1.07-1.13)	1.10***	(1.07-1.13)
Community safety	0.98	(0.92-1.04)	0.98	(0.92-1.04)
Level-2 predictor variables				
Student focused			0.95	(0.83-1.10)
Student extracurricular activities			0.88**	(0.81-0.97)
Caring culture			0.98	(0.82-1.19)
Collaborative leadership			1.00	(0.96-1.05)
Parental engagement			0.89	(0.77-1.03)
Community engagement			1.11	(0.98-1.27)
Focused school development			0.90	(0.78-1.04)
An innovative school			1.17	(0.78-1.76)
Engage in dialogue			0.94*	(0.89-1.00)
Engage in data-driven decision-making			1.12	(0.93-1.35)
Value professional development			1.07	(0.88-1.30)
Dealing with difficult students			1.00	(0.75-1.33)
Teacher collaboration			1.01	(0.85-1.19)
School safety			0.88	(0.61-1.28)

Note. *** = p < .001,** = p < .01, * = p < .05. Unconditional model: df = 61, X^2=185.46, p = 0.000. Grade 6 is the reference grade.

Table 15 shows the results for verbal bullying victimization after running the unconditional null model without any Level-1 or Level-2 predictors included. The unconditional null model showed that there are significant differences among the schools on verbal bullying victimization (X^2=173.70, df =61, p = .000). The intra-class correlation coefficient (ICC), which is the between and within schools variance, is 3.7% for verbal bullying victimization, meaning that 3.7% of the variance in verbal bullying victimization can be explained between schools.

The Level-1 model shows that six of the student predictor variables are significantly related to verbal bullying victimization: having been a victim of physical bullying (OR = 4.84, p < .001), social (OR = 3.26, p < .001), or cyber bullying (OR = 2.25, p < .001), student belonging (OR = .96, p < .001), climate of fear (OR = 1.16, p <.001), and community safety (OR = 1.06, p <.05).

The addition of Level-2 school level predictor variables in Model 2 did not alter the results for the second model. However, the odds ratios for having been a victim of both physical and social bullying increased slightly (OR = 5.00, p < .001). Similarly, it decreased slightly for having been a victim of cyber bullying (OR = 2.21, p < .001). Three Level-2 predictor variables are significantly related to verbal bullying victimization: parental engagement (OR = 1.25, p < .05), community engagement (OR = 0.88, p < .05), and schools with focused school development (OR = 1.21, p < .05).

Table 15

Results of Multilevel Logistic Analysis of Level 1 and Level-2 Predictors on Verbal Bullying Victimization

Scales	Model 1 N=3068		Model 2 N=3054	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1 predictor variables				
Gender (1=Female)	1.10	(0.89-1.36)	1.10	(0.89-1.36)
Geographic status (1=Urban)	1.11	(0.87-1.40)	1.26	(0.97-1.65)
Grade 9 (1=Grade 9)	1.10	(0.85-1.42)	1.14	(0.88-1.46)
Grade 12 (1= Grade 12)	1.06	(0.75-1.49)	1.17	(0.85-1.61)
Self-esteem	1.01	(0.98-1.03)	1.01	(0.98-1.03)
Victim of physical bullying	4.84***	(3.90-6.01)	5.00***	(4.03-6.19)
Victim of social bullying	3.26***	(2.68-3.97)	3.29***	(2.70-4.01)
Victim of cyber bullying	2.25***	(1.80-2.81)	2.21***	(1.77-2.75)
Family responsiveness	0.99	(0.95-1.03)	0.99	(0.95-1.03)
Peer action (Bystander)	1.01	(1.00-1.02)	1.01	(1.00-1.02)
Adult responsiveness	0.98	(0.92-1.03)	0.97	(0.92-1.03)
Adult respect and recognition	1.02	(0.99-1.05)	1.02	(0.99-1.05)
Bullying education	1.03	(0.97-1.09)	1.03	(0.97-1.10)
Student engagement	0.99	(0.93-1.05)	0.99	(0.93-1.05)
Student belonging	0.96*	(0.92-0.99)	0.96*	(0.93-1.00)
Student efficacy	0.99	(0.96-1.02)	0.99	(0.96-1.02)
Bullying climate	1.00	(0.97-1.03)	1.00	(0.97-1.03)
Climate of fear	1.16***	(1.12-1.21)	1.16***	(1.12-1.21)
Antisocial behaviour	1.02	(0.98-1.06)	1.02	(0.98-1.06)
Community safety	1.06*	(1.00-1.12)	1.06*	(1.00-1.13)
Level-2 predictor variables				
Student focused			0.86	(0.70-1.06)
Student extracurricular activities			1.07	(0.96-1.19)
Caring culture			1.00	(0.80-1.24)
Collaborative leadership			1.02	(0.96-1.08)
Parental engagement			1.25*	(1.04-1.50)
Community engagement			0.88*	(0.78-0.99)
Focused school development			1.21*	(1.01-1.45)
An innovative school			0.94	(0.62-1.42)
Engage in dialogue			1.06	(0.99-1.14)
Engage in data-driven decision-making			0.94	(0.77-1.14)
Value professional development			0.98	(0.85-1.13)
Dealing with difficult students			1.02	(0.74-1.41)
Teacher collaboration			0.96	(0.83-1.10)
School safety			1.08	(0.83-1.41)

Note. *** = p < .001, ** = p < .01, * = p < .05. Unconditional model: df = 61, X^2=173.70, p = 0.000. Grade 6 is the reference grade.

Table 16 displays the results for two models constructed after running the unconditional null model without any Level-1 (student level) or Level-2 (school level) predictors included for social bullying victimization. The unconditional null model shows that there are significant differences among the schools on social bullying victimization (X^2=127.75, df =61, p = .001). The intra-class correlation coefficient (ICC), which is the between and within schools variance, is 2.2% for social bullying victimization, meaning that 2.2% of the variance can be explained between schools and social bullying victimization.

The Level-1 model indicates that seven of the predictor variables are significantly related to social bullying victimization. The Level-1predictors related to social bullying victimization are: female (OR = 2.58, p < .001), Grade 12 (OR = 1.56, p <.01), having been a victim of physical (OR = 1.97, p < .001), verbal (OR = 3.32, p < .001), or cyber bullying (OR = 2.94, p < .001), climate of fear (OR = 1.18, p <.001), and antisocial behaviour (OR = 0.96, p <.05).

The addition of Level-2 predictors in Model 2 did not significantly alter the results. However, the odds ratio for Grade 9 became significantly different at p < .01 instead of being not significant. Three Level-2 predictor variables are significantly related to social bullying victimization: student focused schools (OR = 1.20, p < .05), student extracurricular activities (OR = 0.92, p < .05), and community engagement (OR = 1.11, p < .05).

Table 16

Results of Multilevel Logistic Analysis of Level-1 and Level-2 Predictors on Social Bullying Victimization

Scales	Model 1 N=3068		Model 2 N=3054	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1 predictor variables				
Gender (1=Female)	2.58***	(2.16-3.07)	2.59***	(2.17-3.09)
Geographic status (1=Urban)	0.92	(0.76-1.11)	0.93	(0.75-1.16)
Grade 9 (1=Grade 9)	1.31	(0.99-1.72)	1.54**	(1.19-2.00)
Grade 12 (1= Grade 12)	1.56**	(1.18-2.07)	1.78***	(1.34-2.37)
Self-esteem	0.99	(0.97-1.02)	1.00	(0.97-1.03)
Victim of physical bullying	1.97***	(1.56-2.49)	1.96***	(1.55-2.48)
Victim of verbal bullying	3.32***	(2.75-4.01)	3.35***	(2.78-4.04)
Victim of cyber bullying	2.94***	(2.29-3.78)	2.95***	(2.31-3.78)
Family responsiveness	1.01	(0.96-1.06)	1.01	(0.96-1.05)
Peer action (Bystander)	1.00	(0.99-1.02)	1.00	(0.99-1.02)
Adult responsiveness	0.98	(0.92-1.04)	0.98	(0.92-1.04)
Adult respect and recognition	1.01	(0.98-1.04)	1.01	(0.98-1.04)
Bullying education	1.00	(0.96-1.06)	1.00	(0.96-1.06)
Student engagement	0.99	(0.94-1.05)	0.99	(0.94-1.05)
Student belonging	0.99	(0.95-1.02)	0.99	(0.95-1.02)
Student efficacy	0.99	(0.97-1.02)	0.99	(0.96-1.02)
Bullying climate	1.01	(0.99-1.04)	1.01	(0.99-1.04)
Climate of fear	1.18***	(1.13-1.22)	1.18***	(1.14-1.22)
Antisocial behaviour	0.96**	(0.93-0.99)	0.96**	(0.93-0.99)
Community safety	1.03	(0.98-1.08)	1.02	(0.98-1.07)
Level-2 predictor variables				
Student focused			1.20*	(1.01-1.44)
Student extracurricular activities			0.92*	(0.85-1.00)
Caring culture			1.10	(0.97-1.26)
Collaborative leadership			1.00	(0.95-1.05)
Parental engagement			1.04	(0.90-1.20)
Community engagement			1.11*	(1.00-1.23)
Focused school development			0.97	(0.85-1.10)
An innovative school			0.99	(0.76-1.30)
Engage in dialogue			0.99	(0.94-1.04)
Engage in data-driven decision-making			0.90	(0.80-1.03)
Value professional development			0.89	(0.78-1.02)
Dealing with difficult students			0.87	(0.72-1.06)
Teacher collaboration			1.04	(0.93-1.17)
School safety			1.16	(0.93-1.45)

Note. *** = $p < .001$, ** = $p < .01$, * = $p < .05$. Unconditional model: df = 61, X^2=127.75, p = 0.000. Grade 6 is the reference grade.

Table 17 shows the results for the two models constructed after running the null model without any predictor variables at either Level-1or Level-2 for cyber bullying victimization. The unconditional null model shows that there are significant differences among schools on cyber bullying victimization (X^2=216.02, df =61, p = .000). The intra-class correlation coefficient (ICC), which is the between and within schools variance, is 5.0% for cyber bullying victimization, meaning that 5.0% of the variance for cyber bullying victimization can be explained between schools.

The Level-1 model shows twelve predictor variables which are significantly different with cyber bullying victimization: female (OR = 1.90, p < .001), being in Grade 9 (OR = 2.17, p < .001), being in Grade 12 (OR = 2.50, p < .001), peer action, (OR = 1.04, p <.001), having been a victim of physical bullying (OR = 1.46, p < .001), verbal (OR = 2.26, p < .001), or social bullying (OR = 3.03, p < .001), bullying education (OR = .93, p <.01), bullying climate (OR = 0.94, p <.001), climate of fear (OR = 1.10, p <.001), antisocial behaviour (OR = 1.08, p <.001), and community safety (OR = 0.91, p <.05).

The addition of Level-2 predictor variables did not qualitatively alter the Level-1 predictors radically with the exception of Grade 9, which went from an odds ratio of 2.17, p < .001 to an odds ratio of 2.49, and for Grade 12 went from an odds ratio of 2.50, p < .001 to an odds ratio of 2.92, p < .001. Two Level-2 predictor variables are related to cyber bullying victimization: caring culture (OR = 0.77, p < .05) and parental engagement (OR = 1.28, p < .05).

Table 17

Results of Multilevel Logistic Analysis of Level-1 and Level-2 Predictors on Cyber Bullying Victimization

Scales	Model 1 N=3068		Model 2 N=3054	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1 predictor variables				
Gender (1=Female)	1.90***	(1.51-2.37)	1.90***	(1.52-2.39)
Geographic status (1=Urban)	1.07	(0.82-1.39)	1.21	(0.84-1.73)
Grade 9 (1=Grade 9)	2.17***	(1.70-2.77)	2.49***	(1.79-3.45)
Grade 12 (1= Grade 12)	2.50***	(1.81-3.47)	2.92***	(1.90-4.51)
Self-esteem	0.99	(0.97-1.01)	0.99	(0.97-1.01)
Victim of physical bullying	1.46**	(1.14-1.88)	1.46**	(1.13-1.89)
Victim of verbal bullying	2.26***	(1.78-2.87)	2.22***	(1.76-2.81)
Victim of social bullying	3.03***	(2.37-3.87)	3.04***	(2.38-3.87)
Peer action (Bystander)	1.04***	(1.03-1.06)	1.04***	(1.03-1.06)
Family responsiveness	0.98	(0.93-1.04)	0.98	(0.93-1.04)
Adult responsiveness	1.00	(0.94-1.07)	1.00	(0.94-1.06)
Adult respect and recognition	0.98	(0.94-1.02)	0.98	(0.94-1.02)
Bullying education	0.93**	(0.88-0.98)	0.93**	(0.87-0.98)
Student engagement	1.01	(0.96-1.06)	1.01	(0.96-1.07)
Student belonging	1.03	(0.98-1.07)	1.03	(0.98-1.07)
Student efficacy	1.00	(0.97-1.03)	1.00	(0.97-1.03)
Bullying climate	0.94***	(0.92-0.97)	0.94***	(0.92-0.97)
Climate of fear	1.10***	(1.07-1.13)	1.10***	(1.07-1.14)
Antisocial behaviour	1.08***	(1.04-1.11)	1.08***	(1.04-1.11)
Community safety	0.91**	(0.86-0.97)	0.91**	(0.86-0.97)
Level-2 predictor variables				
Student focused			0.95	(0.75-1.19)
Student extracurricular activities			0.93	(0.82-1.06)
Caring culture			0.77*	(0.62-0.95)
Collaborative leadership			1.00	(0.95-1.05)
Parental engagement			1.28**	(1.07-1.52)
Community engagement			1.05	(0.94-1.18)
Focused school development			1.00	(0.83-1.20)
An innovative school			1.35	(0.96-1.91)
Engage in dialogue			1.05	(0.99-1.11)
Engage in data-driven decision-making			0.92	(0.77-1.10)
Value professional development			1.08	(0.92-1.28)
Dealing with difficult students			1.00	(0.73-1.36)
Teacher collaboration			0.99	(0.86-1.14)
School safety			1.07	(0.82-1.39)

Note. *** = $p < .001$, ** = $p < .01$, * = $p < .05$. Unconditional model: df = 61, X^2=216.02, $p = 0.000$. Grade 6 is the reference grade.

4.6 Bivariate Analyses for Level-1 and Level-2 Variables and Types of Bullying

Having completed a discussion of the findings relating to the effects of the various independent Level-1 (student level) and Level-2 (school level) variables on bullying victimization, study findings relating to bullying behaviour will now be reviewed. Before proceeding to a discussion of the multilevel logistic regression analyses, it is important to highlight the relationships between the various Level-1 and Level-2 independent and bullying dependent variables. Similar to the previous analysis relating to victimization, Pearson's correlation was used to determine the strength of relationships as well as whether the relationships were statistically significant at $p < .05$ level. All tests are completed using two-tailed tests. Table 18 provides the results of Pearson's correlations for Level-1 variables in relation to the four types of bullying.

Table 18

Level-1 Pearson's Correlations for Bullying Behaviour

Level-1 variables	Physical	Verbal	Social	Cyber
Gender	-.23***	-.07***	.08***	.00
Grade 6	-.04*	-.17***	-.17***	-.20***
Grade 9	.09***	.12***	.10***	.13***
Grade 12	-.05***	.05***	.08***	.09***
Rural/urban	-.02	-.02	-.02	-.03
Self-esteem	-.17***	-.20***	-.16***	-.18***
Family responsiveness	-.20***	-.20***	-.19***	-.22***
Peer action	-.12***	-.14***	-.09***	-.07***
Adult responsiveness	-.21***	-.23***	-.23***	-.25***
Adult respect and recognition	-.25***	-.27***	-.23***	-.28***
Bullying education	-.17***	-.20***	-.19***	-.24***
Student engagement	-.25***	-.30***	-.23***	-.25***
Student belonging	-.21***	-.25***	-.18***	-.17***
Student efficacy	-.25***	-.30***	-.23***	-.24***
Bullying climate	-.39***	-.34***	-.28***	-.33***
Climate of fear	.20***	.23***	.23***	.16***
Antisocial behaviour	.50***	.40***	.34***	.42***
Community safety	-.14***	-.13***	-.10***	-.11***

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

Individual Factors. Males are more likely than females to be physical and verbal bullies with correlations of r = -.23, p < .001 and r = -.07, p < .001, respectively. However, females are more likely than males to be students who bully socially r = .18, p < .001. Grade 6 students are less likely than students in other grades to engage in all types of bullying, with cyber bullying having the strongest correlation at r = -.20, p < .001. Social and verbal bullying have the same correlation r = -.17, p < .001. Physical bullying has the lowest correlation at r = -.04, p < .05. Grade 9 students are more likely to be bullies of all types of bullying, with cyber bullying being the highest followed by verbal, social then physical (r = .13 , p < .001, r = .12, p < .001, r = .10, p < .05, and r = .09, p < .05).

Grade 12 students are most likely to be bullies of cyber, social, and verbal bullying, and least likely to be physical bullies (r = .09, p < .001, r = .08, p < .001, .05, p < .001, and r = -.05). Geographic location is not significantly related to any type of bullying. Student self-esteem is negatively related to all types of bullying meaning that higher levels of student self-esteem are related to lower levels of bullying. The strongest correlation for self-esteem is with verbal bullying at r = -.20, p < .001. The weakest correlation for self-esteem is with social bullying at r = -.16, p < .001.

Family. Family responsiveness is negatively related to all types of bullying, meaning that higher levels of family responsiveness are related to lower levels of bullying. The strongest correlation for family responsiveness is with cyber bullying at r = -.22, p < .001. The weakest correlation for family responsiveness is with physical bullying at r = -.19, p < .001.

Peers. Peer action is negatively correlated to all types of bullying, meaning that higher levels of peer action are related to lower levels of bullying. The strongest correlation for peer action is with verbal bullying at r = -.14, p < .001. The weakest correlation for peer action is with cyber bullying at r = -.07, p < .001.

School context. A number of items dealt with the impact of adults on whether a student was likely to be a bully. Adult responsiveness, adult respect and recognition, and bullying education are all significantly related to all types of bullying. Adult responsiveness is negatively related to all types of bullying, meaning that higher levels of adult responsiveness are related to lower levels of bullying. The strongest correlation for adult responsiveness is with cyber bullying at r = -.25, p < .001. The weakest correlation for adult responsiveness is with physical bullying at r = -.21, p < .001.

Adult respect and recognition are negatively related to all types of bullying, meaning that higher levels of adult respect and recognition are related to lower levels of bullying. The strongest correlation for adult respect and recognition is with cyber bullying at r = -.28, p < .001. Finally, the weakest correlation for adult respect and recognition is with social bullying at r = -.23, p < .001.

Bullying education is negatively correlated to all types of bullying, meaning that higher levels of bullying education are related to lower levels of bullying. The strongest correlation for bullying education is with cyber bullying (r = -.24, p < .001). The weakest correlation for bullying education is with physical bullying (r = -.17, p < .001).

Student engagement, student belonging, and student efficacy were examined in relation to bullying. Student engagement is negatively correlated to all types of bullying, meaning that higher levels of student engagement are related to lower levels of bullying.

The strongest correlation for student engagement is with verbal bullying (r = -.30, p < .001). The weakest correlation for student engagement is with social bullying (r = -.23, p < .001).

Student belonging is negatively correlated to all types of bullying, meaning that higher levels of student belonging are related to lower levels of bullying. The strongest correlation for student belonging is with verbal bullying (r = -.25, p < .001). The weakest correlation for student belonging is with cyber bullying (r = -.17, p < .001).

Student efficacy is negatively correlated to all types of bullying, meaning that higher levels of student efficacy are related to lower levels of bullying. The strongest correlation for student efficacy is with verbal bullying at r = -.30, p < .001. The weakest correlation for student efficacy is with social bullying (r = -.23, p < .001).

Three variables examined the level of problem behaviours which can occur in schools. These included bullying climate, a climate of fear, and whether there was antisocial behaviour occurring in the schools. All variables are significantly related to all types of bullying behaviour. Bullying climate is negatively correlated to all types of bullying, meaning that higher levels of positive anti-bullying climate are related to lower levels of bullying. The strongest correlation for bullying climate is with physical bullying (r = -.39, p < .001). The weakest correlation for bullying climate is with social bullying (r = -.28, p < .001).

Climate of fear is positively correlated to all types of bullying, meaning that higher levels of fear are correlated to higher levels of bullying behaviour. The strongest correlation for climate of fear is with social and verbal bullying with both at r = .23, p <

.001. The weakest correlation for climate of fear is with cyber bullying ($r = .16$, $p <$ .001).

Antisocial behaviour is positively correlated to all types of bullying, meaning that higher levels of antisocial behaviour are related to higher levels of bullying. The strongest correlation for antisocial behaviour is with physical bullying ($r = .50$, $p < .001$). The weakest correlation for antisocial behaviour is with social bullying ($r = .34$, $p <$ .001).

Community. Community safety is negatively related to all types of bullying, meaning that higher levels of community safety are related to lower levels of bullying. The strongest correlation for community safety is with physical bullying ($r = -.14$, $p <$ .001). The weakest correlation is between community safety and social bullying ($r = -$ .10, $p < .001$).

Table 19 examines the Level-2 predictor variables in relation to the four types of bullying behaviour. None of the correlations are above .10, indicating that the Level-2 predictor variable correlations are not strongly correlated with bullying behaviours. Fewer than five correlations are significantly correlated to either physical or cyber bullying. Verbal and social bullying are both negatively correlated with nine of the Level-2 predictor variables, indicating that higher levels are associated with lower levels of bullying.

Table 19

Level-2 Pearson's Correlations for all Bullying Types, N=62

Level-2 factors	Physical	Verbal	Social	Cyber
Student focused	.00	-.07***	-.05***	-.03
Student extracurricular activities	-.03*	.01	.04*	.05***
Caring culture	.02	-.05***	-.05**	-.02
Collaborative leadership	.04*	-.03	-.03	-.02
Parental engagement	.04**	-.03	-.04**	-.03
Community engagement	.01	-.05***	-.03*	-.02
Focused school development	.02	-.05***	-.06***	-.02
An innovative school	-.02	-.04**	-.03	-.02
Engage in dialogue	.04*	.01	.00	.00
Engage in data-driven decision-making	.01	-.06***	-.06***	-.02
Value professional development	.03	-.05**	-.06***	-.04**
Dealing with difficult students	.02	-.03	-.03	-.01
Teacher collaboration	.02	-.05***	-.06***	-.01
School safety	-.03	-.06***	-.04**	-.05***

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

4.7 Results of Multilevel Logistic Regression Analysis on Bullying Behaviour

The previous section presented the results for both Level-1 (student level) and Level-2 (school level) predictor variables in relation to the various types of bullying behaviours. In this section, the effects of controlling for each of these variables in relation to one another is presented to show which predictor variables can predict bullying behaviours. Table 20 summarizes the results for the two models constructed after running the null model without any predictor variables at either Level-1 or Level-2 for physical bullying. The unconditional null model shows that there are significant differences among schools on physical bullying (X^2=158.43, df =61, p = .000). The intra-

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class correlation coefficient (ICC), which is the between and within schools variance is 3.5% for physical bullying, meaning that 3.5% of the variance can be explained between schools.

Table 20 shows that 11 of the Level-1 predictor variables are significantly related to physical bullying: being female (OR = 0.43, $p < .001$), being in Grade 9 (OR = 0.47, $p < .001$), being in Grade 12 (OR = 0.29, $p < .001$), self-esteem (OR = 0.97, $p < .05$), having been a verbal (OR = 4.80, $p < .001$), social (OR = 1.30, $p < .05$), or a cyber bully (OR = 1.62, $p < .01$), bullying climate (OR = 0.88, $p < .001$), bullying education (OR = 1.06, $p < .05$), climate of fear (OR = 1.04, $p < .05$), and antisocial behaviour (OR = 1.33, $p < .001$).

The addition of Level-2 predictor variables does not alter the significance of the Level-1 predictor variables with just one exception, the Grade 9 variable changed from being significant at $p < .001$ to being significant at the $p < .01$ level. Four Level-2 predictor variables are significantly related to physical bullying: student extracurricular activities (OR = 0.90, $p < .01$), parental engagement (OR = 1.30, $p < .01$), an innovative school (OR = 1.50, $p < .05$), and teachers value professional development (OR = 1.19, $p < .05$).

Table 20

Results of Multilevel Logistic Analysis of Level-1and Level-2 Predictor Variables on Physical Bullying

Scales	Model 1 N=3077		Model 2 N=3063	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1predictor variables				
Gender (1=Female)	0.43***	(0.35-0.54)	0.43***	(0.35-0.54)
Geographic status (1=Urban)	0.84	(0.68-1.05)	1.02	(0.78-1.33)
Grade 9 (1=Grade 9)	0.47***	(0.36-0.61)	0.62**	(0.46-0.83)
Grade 12 (1= Grade 12)	0.29***	(0.22-0.38)	0.42***	(0.31-0.59)
Self-esteem	0.97*	(0.94-1.00)	0.96*	(0.94-0.99)
Bullying – verbal	4.80***	(3.67-6.28)	4.73***	(3.62-6.18)
Bullying – social	1.30*	(1.02-1.66)	1.27*	(1.00-1.62)
Bullying – cyber	1.62**	(1.15-2.27)	1.60**	(1.13-2.25)
Family responsiveness	0.96	(0.91-1.02)	0.96	(0.91-1.01)
Peer action (Bystander)	1.00	(0.99-1.01)	1.00	(0.99-1.02)
Adult responsiveness	1.03	(0.95-1.12)	1.02	(0.95-1.11)
Adult respect and recognition	1.02	(0.99-1.06)	1.03	(0.99-1.07)
Bullying education	1.06*	(1.00-1.13)	1.07*	(1.00-1.14)
Student engagement	0.98	(0.93-1.04)	0.98	(0.93-1.04)
Student belonging	1.02	(0.98-1.06)	1.02	(0.98-1.06)
Student efficacy	0.99	(0.96-1.01)	0.99	(0.96-1.01)
Bullying climate	0.88***	(0.85-0.92)	0.88***	(0.85-0.91)
Climate of fear	1.04*	(1.00-1.07)	1.04*	(1.00-1.07)
Antisocial behaviour	1.33***	(1.25-1.42)	1.34***	(1.25-1.42)
Community safety	0.99	(0.94-1.05)	1.00	(0.94-1.05)
Level-2 predictor variables				
Student focused			1.01	(0.87-1.19)
Student extracurricular activities			0.90*	(0.82-1.00)
Caring culture			0.87	(0.74-1.02)
Collaborative leadership			1.03	(0.99-1.07)
Parental engagement			1.30**	(1.11-1.51)
Community engagement			1.03	(0.91-1.17)
Focused school development			0.97	(0.84-1.12)
An innovative school			1.50*	(1.06-2.12)
Engage in dialogue			0.97	(0.92-1.04)
Engage in data-driven decision-making			0.93	(0.82-1.06)
Value professional development			1.19*	(1.03-1.37)
Dealing with difficult students			0.83	(0.63-1.09)
Teacher collaboration			1.00	(0.86-1.17)
School safety			1.06	(0.84-1.34)

Note. *** = $p < .001$,** = $p < .01$, * = $p < .05$. Unconditional model: df = 61, X^2=158.43, p = .000. Grade 6 is the referent grade.

Table 21 summarizes the results for the two models constructed after running the null model without any predictor variables at either Level-1 or Level-2 on verbal bullying. The unconditional null model shows that there are significant differences among schools on verbal bullying (X^2=306.08, df =61, p = .000). The intra-class correlation coefficient (ICC), which is the between and within schools variance, is 8.8% for verbal bullying, meaning that 8.8% of the variance can be explained between schools.

Table 21 shows that nine Level-1predictor variables are significantly related with verbal bullying. These variables are: being a Grade 12 student (OR = 1.42, p <.05), adult responsiveness (OR = 1.08, p <.01), having been a physical bully (OR = 4.62, p < .001), social (OR = 4.96, p < .001), or a cyber bully (OR = 2.86, p < .001), bullying climate (OR = 0.95, p <.01), bullying education (OR = 1.09, p <.01), climate of fear (OR = 1.06, p <.001), and antisocial behaviour (OR = 1.14, p <.001).

The addition of Level-2 predictor variables did not alter the Level-1 predictor variables, with the exception of being in Grade 12, which became significant at p < .01 instead of at p < .05. The odds ratio increased from 1.42 to 1.82. Five Level-2 predictor variables are significantly related to verbal bullying: student focused (OR = 0.73, p < .01), a caring culture (OR = 0.80, p < .05), parental engagement (OR = 1.31, p < .01), an innovative school (OR = 1.61, p < .001), and teachers engaging in dialogue (OR = 1.08, p < .05).

Table 21

Results of Multilevel Logistic Analysis of Level-1 and Level-2 Predictor Variables on Verbal Bullying

Scales	Model 1 N=3077		Model 2 N=3063	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1 predictor variables				
Gender (1=Female)	1.01	(0.81-1.27)	1.02	(0.81-1.28)
Geographic status (1=Urban)	0.98	(0.76-1.25)	1.13	(0.85-1.51)
Grade 9 (1=Grade 9)	1.22	(0.88-1.69)	1.39	(0.97-2.00)
Grade 12 (1= Grade 12)	1.42*	(1.03-1.98)	1.82**	(1.21-2.72)
Self-esteem	1.00	(0.97-1.04)	1.00	(0.96-1.04)
Bullying – physical	4.62***	(3.56-6.00)	4.62***	(3.56-6.00)
Bullying – social	4.96***	(3.97-6.19)	5.01***	(4.00-6.28)
Bullying – cyber	2.86***	(2.07-3.94)	2.79***	(2.03-3.85)
Family responsiveness	1.05	(0.99-1.10)	1.05	(0.99-1.11)
Peer action (Bystander)	0.99	(0.99-1.00)	0.99	(0.99-1.00)
Adult responsiveness	1.08**	(1.02-1.15)	1.08*	(1.01-1.14)
Adult respect and recognition	0.97	(0.94-1.01)	0.97	(0.94-1.01)
Bullying education	1.09**	(1.02-1.17)	1.09**	(1.02-1.17)
Student engagement	0.96	(0.91-1.01)	0.96	(0.91-1.01)
Student belonging	0.98	(0.94-1.02)	0.98	(0.94-1.02)
Student efficacy	0.97	(0.95-1.00)	0.97	(0.95-1.00)
Bullying climate	0.95**	(0.92-0.99)	0.95**	(0.91-0.98)
Climate of fear	1.06***	(1.02-1.09)	1.06***	(1.02-1.10)
Antisocial behaviour	1.14***	(1.08-1.22)	1.14***	(1.07-1.21)
Community safety	0.99	(0.93-1.04)	0.99	(0.94-1.05)
Level-2 predictor variables				
Student focused			0.73**	(0.58-0.91)
Student extracurricular activities			0.96	(0.85-1.02)
Caring culture			0.80*	(0.64-0.99)
Collaborative leadership			0.98	(0.91-1.05)
Parental engagement			1.31**	(1.07-1.61)
Community engagement			0.85	(0.73-1.01)
Focused school development			0.99	(0.79-1.24)
An innovative school			1.61**	(1.03-2.53)
Engage in dialogue			1.08*	(1.00-1.15)
Engage in data-driven decision-making			1.07	(0.90-1.28)
Value professional development			1.15	(0.94-1.43)
Dealing with difficult students			1.27	(0.97-1.69)
Teacher collaboration			0.99	(0.86-1.15)
School safety			1.11	(0.81-1.53)

Note. *** = p < .001, ** = p < .01, * = p < .05. Unconditional model: df = 61, X^2=306.08, p = 0.000. Grade 6 is the referent grade.

Table 22 summarizes the results for the two models constructed after running the null model without any predictor variables at either Level-1 or Level-2 on social bullying. The unconditional null model shows that there are significant differences among schools on social bullying (X^2=242.80, df =61, p =.000). The intra-class correlation coefficient (ICC), which is the between and within schools variance, is 6.6% for social bullying, meaning that 6.6% of the variance can be explained between schools.

The Level-1 model shows that eight Level-1 predictor variables are significantly related to social bullying: female (OR = 2.47, p < .001), being in Grade 12 (OR = 1.31, p < .05), having been a physical bully (OR = 1.37, p < .01), verbal (OR = 4.92, p < .001), or a cyber bully (OR = 3.20, p < .001), student belonging (OR = 1.06, p <.01), climate of fear (OR = 1.08, p <.001), and antisocial behaviour (OR = 1.08, p <.001). The addition of Level-2 predictor variables did not alter the Level-1 predictors. No Level-2 predictor variables are significantly related to social bullying.

Table 22

Results of Multilevel Logistic Analysis of Level-1and Level-2 Predictor Variables on Social Bullying

Scales	Model 1 N=3077		Model 2 N=3063	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1 predictor variables				
Gender (1=Female)	2.47***	(2.02-3.03)	2.49***	(2.03-3.06)
Geographic status (1=Urban)	1.00	(0.81-1.23)	1.14	(0.89-1.46)
Grade 9 (1=Grade 9)	1.14	(0.91-1.44)	1.26	(0.93-1.69)
Grade 12 (1= Grade 12)	1.31*	(1.03-1.66)	1.50*	(1.07-2.09)
Self-esteem	1.00	(0.98-1.03)	1.00	(0.98-1.03)
Bullying – physical	1.37**	(1.08-1.72)	1.34**	(1.07-1.67)
Bullying – verbal	4.92***	(3.98-6.09)	4.95***	(4.00-6.12)
Bullying – cyber	3.20***	(2.54-4.03)	3.20***	(2.54-4.04)
Family responsiveness	0.98	(0.93-1.03)	0.98	(0.93-1.03)
Peer action (Bystander)	1.00	(0.99-1.02)	1.00	(0.99-1.02)
Adult responsiveness	0.95	(0.90-1.00)	0.95	(0.89-1.00)
Adult respect and recognition	0.99	(0.96-1.03)	0.99	(0.96-1.02)
Bullying education	1.00	(0.95-1.06)	1.00	(0.95-1.06)
Student engagement	0.99	(0.95-1.05)	0.99	(0.95-1.04)
Student belonging	1.06**	(1.02-1.11)	1.07***	(1.03-1.11)
Student efficacy	0.99	(0.97-1.02)	0.99	(0.97-1.02)
Bullying climate	0.97	(0.93-1.00)	0.97	(0.93-1.00)
Climate of fear	1.08***	(1.05-1.10)	1.08***	(1.05-1.11)
Antisocial behaviour	1.08***	(1.04-1.12)	1.08***	(1.04-1.12)
Community safety	1.05	(0.99-1.11)	1.05	(0.99-1.11)
Level-2 predictor variables				
Student focused			1.11	(0.92-1.34)
Student extracurricular activities			0.99	(0.91-1.09)
Caring culture			1.02	(0.90-1.17)
Collaborative leadership			1.03	(0.98-1.09)
Parental engagement			1.03	(0.90-1.19)
Community engagement			1.01	(0.90-1.13)
Focused school development			0.96	(0.84-1.10)
An innovative school			0.95	(0.67-1.34)
Engage in dialogue			0.98	(0.93-1.04)
Engage in data-driven decision-making			0.93	(0.81-1.08)
Value professional development			1.11	(0.94-1.32)
Dealing with difficult students			0.88	(0.70-1.10)
Teacher collaboration			0.94	(0.84-1.06)
School safety			1.13	(0.89-1.45)

Note. *** = $p < .001$, ** = $p < .01$, * = $p < .05$. Unconditional model: df = 61, X^2=242.80, p = 0.000. Grade 6 is the referent grade.

Table 23 summarizes the results of the two models constructed after running the null model without any predictor variables at either Level-1 or Level-2 on cyber bullying. The unconditional null model shows that there are significant differences among schools on cyber bullying (X^2=339.55, df =61, p = .000). The intra-class correlation coefficient (ICC), which is the between and within schools variance, is 12.4% for cyber bullying, meaning that 12.4% of the variance can be explained between schools.

The Level-1 model shows 11 of the predictor variables are significant and related to cyber bullying: female (OR = 1.79, p < .001), being in Grade 9 (OR = 2.15, p < .001), being in Grade 12 (OR = 2.55, p < .01), student belonging, (OR = 1.05, p <.05), self-esteem (OR = 0.96, p <.01), peer action (OR = 1.03, p <.01), having been a physical bully (OR = 1.62, p < .01), verbal (OR = 2.98, p < .001), or a social bully (OR = 3.35, p < .001), bullying climate (OR = 0.92, p <.001), and antisocial behaviour (OR = 1.12, p <.001). The addition of Level-2 predictor variables did not alter the Level-1 predictor variables. None of the Level-2 predictors are significantly related to cyber bullying.

Table 23

Results of Multilevel Logistic Analysis of Level-1 and Level-2 Predictor Variables on Cyber Bullying

Scales	Model 1 N=3077		Model 2 N=3063	
	Odds ratio	Confidence level	Odds ratio	Confidence level
Level-1 predictor variables				
Gender (1=Female)	1.79***	(1.39-2.32)	1.81***	(1.40-2.35)
Geographic status (1=Urban)	1.01	(0.73-1.40)	1.18	(0.69-2.01)
Grade 9 (1=Grade 9)	2.15***	(1.48-3.13)	2.32***	(1.41-3.81)
Grade 12 (1= Grade 12)	2.55***	(1.59-4.07)	2.77**	(1.41-5.54)
Self-esteem	0.96**	(0.93-0.99)	0.96**	(0.94-0.99)
Bullying – physical	1.62***	(1.15-2.28)	1.61***	(1.15-2.28)
Bullying – verbal	2.98***	(2.16-4.12)	2.97***	(2.15-4.09)
Bullying – social	3.35***	(2.63-4.28)	3.38***	(2.64-4.32)
Family responsiveness	1.03	(0.98-1.09)	1.03	(0.98-1.09)
Peer action (Bystander)	1.03**	(1.01-1.05)	1.03**	(1.01-1.05)
Adult responsiveness	0.96	(0.89-1.03)	0.96	(0.88-1.04)
Adult respect and recognition	0.99	(0.95-1.04)	0.99	(0.95-1.04)
Bullying education	0.93	(0.86-1.01)	0.93	(0.86-1.00)
Student engagement	1.01	(0.95-1.07)	1.01	(0.96-1.06)
Student belonging	1.05*	(1.00-1.10)	1.05	(1.00-1.11)
Student efficacy	0.99	(0.96-1.02)	0.99	(0.96-1.02)
Bullying climate	0.92***	(0.89-0.96)	0.92***	(0.88-0.95)
Climate of fear	1.03	(0.99-1.06)	1.02	(0.99-1.06)
Antisocial behaviour	1.12***	(1.09-1.15)	1.12***	(1.09-1.15)
Community safety	0.99	(0.92-1.08)	1.00	(0.92-1.08)
Level-2 predictor variables				
Student focused			0.94	(0.62-1.43)
Student extracurricular activities			1.01	(0.84-1.22)
Caring culture			0.89	(0.65-1.22)
Collaborative leadership			1.00	(0.93-1.08)
Parental engagement			1.33	(0.97-1.82)
Community engagement			0.91	(0.75-1.11)
Focused school development			1.08	(0.79-1.47)
An innovative school			1.31	(0.73-2.39)
Engage in dialogue			0.98	(0.88-1.10)
Engage in data-driven decision-making			1.01	(0.78-1.32)
Value professional development			1.00	(0.77-1.30)
Dealing with difficult students			1.07	(0.74-1.57)
Teacher collaboration			0.96	(0.76-1.21)
School safety			0.87	(0.56-1.37)

Note. *** = $p < .001$, ** = $p < .01$, * = $p < .05$. Unconditional model: df = 61, X^2=339.55, p = 0.000. Grade 6 is the referent grade.

Chapter 5

SUMMARY of FINDINGS and CONCLUSIONS

5.1 Bullying Victimization Hypotheses
5.2 Bullying Hypotheses
5.3 Discussion of the Results
5.4 Bullying Victimization
5.5 Major Findings - Bullying Victimization
5.6 Bullying
5.7 Major Findings - Bullying
5.8 Strengths and Limitations of this Study
5.9 Implications for the Prevention of Bullying
5.10 Implications for Future Research
5.11 Conclusions

This research was guided by the social-ecological theory that examines the impact

of the individual, parental, and the school context on bullying victimization and bullying

behaviour. This theory, considered by some to be the most comprehensive theory

examining human behaviour, posits that it is the interplay between the individual, peer

group, family, school, community, and culture that has an impact on each other (Espelage

& Swearer, 2008). The purpose of this thesis research was to determine how individual

and school-level factors impact the levels and types of bullying occurring in schools in

one school district in Newfoundland and Labrador. To achieve this purpose, data were

collected from students (Level-1 data) and permission was received from Dibbon and

Sheppard to use their previously collected teacher-level data, which served as Level-2

data.

Three lines of inquiry were followed: (1) levels and types of victimization and

bullying taking place in schools in one school district in Newfoundland and Labrador

were identified, (2) individual factors (such as grade level and gender) and school-level

factors (such as formal and informal leadership) are related to victimization and bullying were determined, and (3) the interaction between individual and school related factors on the one hand, and levels and types of victimization and bullying on the other were explained.

5.1 Bullying Victimization Hypotheses

In chapter three a series of hypotheses, based on the social-ecological theory, were presented based on the literature review regarding bullying victimization. The following section presents the findings for these hypotheses based on the bivariate and multilevel logistic regression level results. It is important to point out that the bivariate results may be significant, but when running more advanced analyses, using statistical techniques such as HLM, results may not hold up. In the final analysis, it is the HLM results that are believed to be most meaningful in this research. The results for the multilevel logistic regressions on bullying victimization are found in Table 24.

Table 24

Results of Multilevel Logistic Regression Analysis of Level-1and Level-2 Predictor Variables on Bullying Victimization

Scales	Physical (OR)	Verbal (OR)	Social (OR)	Cyber (OR)
Level-1 predictor variables				
Gender (1=Female)	0.35***	1.10	2.59***	1.90***
Geographic status (1=Urban)	0.86	1.26	0.93	1.21
Grade 9 (1=Grade 9)	0.50***	1.14	1.54**	2.49***
Grade 12 (1= Grade 12)	0.33***	1.17	1.78***	2.92***
Self-esteem	1.01	1.01	1.00	0.99
Victim of bullying	5.13*** V	5.00***P	1.96***P	1.46**P
Victim of bullying	1.88***S	3.29***S	3.35***V	2.22***V
Victim of bullying	1.46***C	2.21***C	2.95***C	3.04***S
Family responsiveness	0.99	0.99	1.01	1.04***
Peer action (Bystander)	1.00	1.01	1.00	0.98
Adult responsiveness	0.95	0.97	0.98	1.00
Adult respect and recognition	1.03	1.02	1.01	0.98
Bullying education	1.04	1.03	1.00	0.93**
Student engagement	1.01	0.99	0.99	1.01
Student belonging	0.96**	0.96*	0.99	1.03
Student efficacy	1.00	0.99	0.99	1.00
Bullying climate	0.94***	1.00	1.01	0.94***
Climate of fear	1.11***	1.16***	1.18***	1.10***
Antisocial behaviour	1.10***	1.02	0.96**	1.08***
Community safety	0.98	1.06*	1.02	0.91**
Level-2 predictor variables				
Student focused	0.95	0.86	1.20*	0.95
Student extracurricular activities	0.88**	1.07	0.92*	0.93
Caring culture	0.98	1.00	1.10	0.77*
Collaborative leadership	1.00	1.02	1.00	1.00
Parental engagement	0.89	1.25*	1.04	1.28**
Community engagement	1.11	0.88*	1.11*	1.05
Focused school development	0.90	1.21*	0.97	1.00
An innovative school	1.17	0.94	0.99	1.35
Engage in dialogue	0.94*	1.06	0.99	1.05
Engage in data-driven decision-making	1.12	0.94	0.90	0.92
Value professional development	1.07	0.98	0.89	1.08
Dealing with difficult students	1.00	1.02	0.87	1.00
Teacher collaboration	1.01	0.96	1.04	0.99
School safety	0.88	1.08	1.16	1.07

Note. *** = p < .001,** = p < .01, * = p < .05. (P) Victim of physical bullying, (S) Victim of social bullying, (V) Victim of verbal bullying, and (C) Victim of cyber bullying.

At the bivariate correlation level, all individual characteristics with the exception of geographic location predicted each type of bullying victimization. However, at the multilevel logistic regression level, some of these variables ceased to have an effect. In terms of gender, findings from multilevel regression reveal males having a greater likelihood of being victims of physical bullying whereas females have a greater likelihood of being victims of social and verbal bullying. As well, these findings reveal that Grade 9 and 12 students are at a lower risk of being victims of physical bullying, but at greater risk of being victims of cyber bullying. Grade 12 students are at greater risk of being social bullying victims. No significant results for verbal bullying were found. Self-esteem predicts physical, verbal, social, and cyber victimization at the bivariate level, but not at the multilevel logistic regression level.

Previous bullying experiences significantly predict all types of victimization at the bivariate level, as was hypothesized. Similarly, at the multilevel logistic regression level, previous victimization is significantly related to all types of victimization.

Family responsiveness was hypothesized to be correlated and significantly related to physical, verbal, social, and cyber victimization. However, no significant results were found when these variables were examined using multilevel logistic regression analyses.

Peer actions were hypothesized to be correlated significantly with physical, verbal, social, and cyber victimization at the bivariate level. However, peer victimization is not shown to be significant for physical, verbal, and social bullying victimization when the variables were placed in the multilevel logistic regressions. While it is significant for cyber bullying victimization, it is in the opposite direction than would be expected.

Adult behaviour in schools (such as adult responsiveness) and bullying education were hypothesized to significantly predict physical, verbal, social, and cyber victimization; and this is the case at the bivariate level. When the multilevel logistic regressions analyses were performed only bullying education was found to be significant and that is with cyber victimization.

Student engagement, student belonging, and student efficacy were all hypothesized to be correlated significantly with physical, verbal, social, and cyber victimization at the bivariate level, and this proves to be the case. However, in the multilevel logistic regression models, only student belonging correlates with either form of bullying victimization: higher levels of student belonging are related to lower levels of physical and verbal victimization.

Bullying climate, climate of fear, and level of antisocial behaviour were all hypothesized to be significantly correlated with physical, verbal, social, and cyber victimization, and this is the case at the bivariate level. When the multilevel logistic regression models were run, the results were not always as predicted. Bullying climate is significantly related to physical and cyber victimization. Climate of fear is correlated to all types of victimization. Higher levels of climate of fear are related to higher rates of all types of victimization. Antisocial behaviour is correlated with physical and cyber victimization, and is a protective factor for social victimization.

Community safety significantly predicted physical, verbal, social, and cyber victimization at the bivariate level as was hypothesized. However, use of multilevel regression revealed mixed results with all types of bullying victimization: higher rates of

community safety were found to be associated with higher rates of verbal bullying victimization but with lower rates of cyber victimization.

All Level-2 predictors, such as caring culture, students focus, and parental engagement tapped into the school context, and it was hypothesized that they would all be correlated significantly to physical, verbal, social, and cyber victimization. Seven variables are significantly correlated to physical victimization; however, they often are in the opposite direction than was expected. Only two variables are in the expected direction: extracurricular activities and an innovative school. Few variables are significantly correlated with the other three types of bullying victimization. At the multilevel logistic regression level of analysis, only one variable, extracurricular activities, consistently predicted victimization. It appears that this is a protective variable as higher scores are associated with lower levels of victimization for both physical and social victimization.

5.2 Bullying Hypotheses

In Chapter Three a series of hypotheses based on the literature review were put forward using social-ecological theory as a guiding framework. The following section presents the findings for these hypotheses based on the bivariate and multilevel logistic regression level results. As with the section on bullying victimization, it is important to point out that the bivariate results may be significant but when running more advanced analyses the results may not hold up when using more advanced statistical techniques such as HLM. In the final analysis, it is the HLM results that are believed to be most

meaningful in this research. The results for the multilevel logistic regressions on bullying

are found in Table 25.

Table 25

Results of Multilevel Logistic Regression Analysis of Level-1and Level-2 Predictor Variables on Bullying

Scales				
	Physical (OR)	Verbal (OR)	Social (OR)	Cyber (OR)
Level-1predictor variables				
Gender (1=Female)	0.43***	1.02	2.49***	1.81***
Geographic status (1=Urban)	1.02	1.13	1.14	1.18
Grade 9 (1=Grade 9)	0.62**	1.39	1.26	2.32***
Grade 12 (1= Grade 12)	0.42***	1.82**	1.50*	2.77**
Self-esteem	0.96*	1.00	1.00	0.96**
Bullying	4.73***V	4.62***P	1.34**P	1.61***P
Bullying	1.27*S	5.01***S	4.95***V	2.97***V
Bullying	1.60**C	2.79***C	3.20***C	3.38***S
Family responsiveness	0.96	1.05	0.98	1.03
Peer action (Bystander)	1.00	0.99	1.00	1.03**
Adult responsiveness	1.02	1.08*	0.95	0.96
Adult respect and recognition	1.03	0.97	0.99	0.99
Bullying education	1.07*	1.09**	1.00	0.93
Student engagement	0.98	0.96	0.99	1.01
Student belonging	1.02	0.98	1.07***	1.05
Student efficacy	0.99	0.97	0.99	0.99
Bullying climate	0.88***	0.95**	0.97	0.92***
Climate of fear	1.04*	1.06***	1.08***	1.02
Antisocial behaviour	1.34***	1.14***	1.08***	1.12***
Community safety	1.00	0.99	1.05	1.00
Level-2 predictor variables				
Student focused	1.01	0.73**	1.11	0.94
Student extracurricular activities	0.90*	0.96	0.99	1.01
Caring culture	0.87	0.80*	1.02	0.89
Collaborative leadership	1.03	0.98	1.03	1.00
Parental engagement	1.30**	1.31**	1.03	1.33
Community engagement	1.03	0.85	1.01	0.91
Focused school development	0.97	0.99	0.96	1.08
An innovative school	1.50*	1.61**	0.95	1.31
Engage in dialogue	0.97	1.08*	0.98	0.98
Engage in data-driven decision-making	0.93	1.07	0.93	1.01
Value professional development	1.19*	1.15	1.11	1.00
Dealing with difficult students	0.83	1.27	0.88	1.07
Teacher collaboration	1.00	0.99	0.94	0.96
School safety	1.06	1.11	1.13	0.87

Note. *** = p < .001,** = p < .01, * = p < .05. (P) Physical bully, (S) Social bully, (V) Verbal bully, and (C) Cyber bully.

It was hypothesized that individual demographic characteristics such as gender, grade, and geographic location would all significantly predict physical, verbal, social, and cyber bullying. At the bivariate correlation level, all individual characteristics (with the exception of geographic location) predicted all types of bullying, and the results are statistically significant. However, when examined using the multilevel logistic regression models, some of these variables ceased to have an effect. In terms of gender, males have a greater likelihood of being physical bullies, whereas females have a greater likelihood of being social, verbal, and cyber bullies. Grade 9 students are at a greater risk of being cyber bullies. Grade 9 and 12 students are at lower risk of being physical bullies, but at a higher risk of being cyber bullies. Grade 12 students are at greater risk of being verbal, social, and cyber bullies. Self-esteem significantly predicted physical, verbal, social, and cyber bullying at the bivariate level. At the multilevel logistic regression level of analyses, higher levels of self-esteem predicted lower levels of bullying for physical and cyber bullying.

Previous bullying experiences significantly predicted all types of bullying behaviour at the bivariate level. At the multilevel logistic level, previous bullying activities are significantly related to all types of bullying behaviours.

Family responsiveness, it was hypothesized, would significantly predict physical, verbal, social, and cyber bullying. At the bivariate level it was found that family responsiveness is significantly correlated with physical, verbal, social, and cyber

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bullying. However, at the multilevel logistic analyses level these factors ceased to be statistically significant.

It was hypothesized that peer actions would significantly predict physical, verbal, social, and cyber bullying. Peer actions significantly predicted physical, verbal, social, and cyber bullying at the bivariate level. At the multilevel only one odds ratio was found to be significant and that was in an unexpected direction, with higher levels of peer action corresponding with higher rates of cyber bullying.

Adult in schools behaviour (such as responsiveness) and bullying education, it was hypothesized, would significantly predict physical, verbal, social, and cyber bullying. The behaviour of adults in school and bullying education did significantly predict physical, verbal, social, and cyber bullying at the bivariate level. When examined using the multilevel logistic regression models, bullying education is significantly correlated with higher levels of physical and verbal bullying. Adult responsiveness is only significantly related to verbal bullying and in the opposite direction of what would be expected.

Student engagement, student belonging, and student efficacy, it was hypothesized, would all significantly predict physical, verbal, social, and cyber bullying. Student engagement, student belonging, and student efficacy all correlate significantly with physical, verbal, social, and cyber bullying at the bivariate level. However, when examined in the multilevel logistic regression models, only student belonging remained statistically significant. Higher levels of school belonging is related to higher levels social and cyber bullying.

It was also hypothesized that bullying climate, climate of fear, and the level of antisocial behaviour would all significantly predict physical, verbal, social, and cyber bullying. Bullying climate, climate of fear, and level of antisocial behaviour are all significantly correlated with physical, verbal, social, and cyber bullying at the bivariate level. Bullying climate is significantly related to physical, verbal, and cyber bullying. Climate of fear is related to three types of bullying: physical, verbal, and social. Antisocial behaviour behaviour is related to all types of bullying. When examined using the multilevel logistic regression models, bullying climate was significantly related to physical, verbal and cyber bullying, with negative views of bullying related to lower levels of bullying. Higher levels of climate of fear and antisocial behaviour are positively correlated with physical, verbal and social bullying.

Community safety, it was hypothesized, would significantly predict physical, verbal, social, and cyber bullying. Community safety significantly predicted physical, verbal, social, and cyber bullying at the bivariate level. However, none of the multilevel models showed any significance.

All Level-2 predictors were intended to capture the school context, and it was hypothesized that factors such as caring culture, student focus, and parental engagement would significantly predict physical, verbal, social, and cyber victimization. Four variables are significantly correlated at the bivariate level to physical bullying; however, two were in the opposite direction that was expected. Nine variables are significantly correlated with verbal bullying, and they are all in the expected direction at the bivariate level. Ten variables are significantly correlated with social bullying, and they are all in the expected direction at the bivariate level.

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At the multilevel logistic regression level of analysis, only one variable consistently predicted bullying. With social and cyber bullying, none of the remaining variables are significantly related. Three variables were risk factors for physical bullying: parental engagement, an innovative school, and dealing with difficult students. Extracurricular activities is a significant protective factor, higher scores being associated with lower levels of physical bullying. Three variables were risk factors for verbal bullying: community engagement, an innovative school, and teachers engaging in dialogue. Schools that are student focused and have a caring culture are protective factors, with higher scores being associated with lower levels of physical bullying.

5.3 Discussion of the Results

At the individual level, this research shows that bullying and victimization is currently taking place in schools in one school district in Newfoundland and Labrador. Rates of victimization are shown to be 60.4% for verbal victimization, 52.1% for social victimization, 39.7% for physical victimization, and just over 26.0% for cyber victimization occurring at least once over the past year. These findings are similar to that found elsewhere in Canada and internationally (Craig & Pepler, 2003; Craig et al., 2009). Regarding prevalence of bullying behaviour, the findings reveal rates of 44.6% for verbal bullying, 35.3% for social bullying, 30.8% for physical bullying, and just over 18% for cyber bullying at least once over the past year. These findings relating to bullying are similar to what has been identified elsewhere in the literature on bullying (Craig & Pepler, 2003; Craig et al., 2009).

The study findings further reveal that males are more likely than females to be the victims of physical bullying while females are more likely than males to be victims of verbal, social, and cyber bullying. In terms of bullying behaviour, males are more likely than females to be the perpetrators of physical, verbal, and cyber bullying. For cyber bullying; however, the differences are not large. Females are more likely than males to be social bullies. These results are consistent with findings of previous studies, as well (Craig & McCuaig 2008; Green et al., 2011, Lemsta et al., 2012; Nansel et al., 2001). No relationship was found between geographic location of schools and any type of bullying or victimization.

Dissimilar from the finding of others, victimization did not peak in junior high (Craig & McCuaig-Edge, 2008; Green et al., 2011; Pepler et al., 2006). Physical victimization was found to be highest in Grade 6, while Grade 9 students were found to have the highest level of verbal victimization. Grade 12 students experience the most social and cyber victimization. This finding is contradictory with some of the research findings relating to bullying which indicate that the highest level of victimization occurs in lower grades (Craig & McCuaig-Edge, 2008; Green et al., 2011; Pepler et al., 2006).

In terms of bullying behaviour, Grade 9 students have the highest rates of physical and cyber bullying while Grade 12 students have the highest rates of social and verbal bullying, although the differences are not large when compared to the Grade 9 students. Grade 6 students have much lower rates of bullying behaviour than either the Grade 9 or Grade 12 students.

The second line of inquiry: to determine which individual factors (such as grade level and gender) and school-level factors (such as formal and informal leadership) are

related to victimization and bullying, was first carried out using bivariate statistics. All correlations for the dependent variables were positive and statistically significant. In terms of bullying victimization, the correlations show that if a student is a victim of one type of bullying he/she is highly likely to be a victim of other forms of bullying victimization. The strongest correlation for victimization is between verbal and social victimization, with the weakest correlation being between physical and cyber victimization.

In terms of bullying behaviour a similar pattern was found. Bullies appear to use more than one form of bullying to bully other students. The strongest correlations are between physical and verbal bullying, and verbal and social bullying. The weakest correlation for bullying behaviour is between physical and cyber bullying. The strongest correlation between all dependent variables is between cyber bullying and cyber victimization. The weakest correlation is between physical victimization and cyber bullying. These findings are consistent with research found in the literature (Hinduja & Patchin, 2008; Li, 2005; Olweus, 2012).

When examining student level variables, the results of this study reveal that higher levels of engagement, belonging, efficacy, and self-esteem are related to lower levels of victimization. This is similar to other findings (Sapouna, 2010). Surprisingly, peer action was significantly correlated only with cyber bullying and the correlation was weak (< .05). Student perceptions of adults in their lives are also related to all types of victimization. Higher levels of family responsiveness, adult responsiveness, and adult respect and recognition are all related to lower levels of victimization. Both bullying education and bullying climate are also related with all types of victimization, meaning

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that engaging students in schools with anti-bullying education programs and the existence of positive school climates has a protective influence on victimization. More positive school climates and the level of community safety are associated with lower levels of victimization, which is consistent with previously published findings (Barboza, 2009; Bayraktar, 2011; Gregory, 2011; Harel-Fisch, 2010; Lee, 2011). In contrast, both climate of fear and antisocial behaviour are both positively associated with victimization, meaning that higher levels of fear and antisocial behaviour are correlated with bullying victimization. These results are similar to that found in the literature (Barboza, 2009; Bayraktar, 2011; Cappadocia et al., 2013; Gregory, 2011; Harel-Fisch, 2010; Lee, 2011).

Few Level-2 (school factors) predictors were related to victimization. The most robust results were found with physical victimization although they were often in the direction that was not expected. That is, higher levels of parental engagement, valuing professional development, and teacher collaboration are correlated with higher levels of victimization. It is possible that due to higher rates of victimization teachers seek out ways to help through engaging parents, professional development, and greater teacher collaboration.

Importantly, it was found that conditions within the schools have an impact on whether students engaged in bullying behaviours.   Student engagement, student belonging, student efficacy, and self-esteem were all found to be associated with all types of bullying behaviour. These findings indicate that higher levels of student engagement, belonging, efficacy, and self-esteem are related to lower levels of bullying. These findings are similar to what has been found in the literature (Barboza et al., 2009; Bayraktar, 2011; Sapouna, 2010).

Student perceptions of adults in their lives are also related to all types of bullying. Higher levels of family responsiveness, adult responsiveness, and adult respect and recognition are all related to lower levels of bullying. Bullying education is also negatively correlated with all types of bullying, meaning that educating students does have a protective influence on bullying. Bullying climate is also related to all types of bullying. This is consistent with other research showing that more positive school climates are correlated to lower levels of bullying (Barboza et al., 2009; Bayraktar, 2011; Gregory et al., 2011; Harel-Fisch et al., 2010; Lee, 2011; Thapa, 2013).

Both climate of fear and antisocial behaviour are both positively correlated with bullying, meaning that higher levels of fear and antisocial behaviour are correlated with bullying. These findings are also similar to that found in prevention research on bullying (Barboza et al., 2009; Bayraktar, 2011; Cappadocia, 2013; Gregory et al., 2011; Harel-Fisch et al., 2010; Lee, 2011). Community safety is associated with all types of bullying, meaning that community safety does have a protective influence on bullying behaviour, and again this is consistent with previously published studies (Chaux et al., 2009, Astor et al., 2009).

Unlike bullying victimization, many more Level-2 predictors were found to be related to school bullying. The most robust results were found with verbal and social bullying. As predicted, the results showed that student focused schools, schools engaging in data-driven decision-making, schools with focused school development, caring cultures, and teacher collaboration are all related to lower levels of school bullying (Bayraktar, 2011).

The third line of inquiry for this thesis was to determine if there is an interaction between individual and school related factors on the one hand, and levels and types of victimization and bullying on the other. This was accomplished through the use of multilevel logistic regression. These findings are discussed in the following four sections.

5.4 Bullying Victimization

Ten Level-1 predictor variables are significantly correlated to physical bullying victimization: being male, being in Grade 9 or Grade 12, student belonging, having been a victim of verbal bullying, having been a victim of social bullying, having been a victim of cyber bullying, bullying climate, climate of fear, and antisocial behaviour. The strongest risk factors for physical victimization are prior bullying victimizations. Students who are verbally victimized are five times more likely than those who are not to be victimized physically. Students who are socially victimized are twice as likely as those who are not to be victimized physically. Students who are cyber bullying victims are one and a half times more likely to be victimized physically compared to those who are not. These findings are consistent with previous studies (Cappadocia et al., 2013; Hinduja & Patchin, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang et al., 2010). Other risk factors related to physical victimization are climate of fear and level of antisocial behaviour in the school as perceived by the students. Protective factors against physical bullying victimization are being female, being in Grades 9 or 12, student belonging, and a climate where bullying is not accepted. Two Level-2 predictors could be seen as protective factors: students participating in extracurricular activities and teachers engaging in data-driven decision-making.

The Level-1 predictors found to be related to verbal bullying victimization were having been a victim of either physical, social, or cyber bullying; student belonging; community safety; and antisocial behaviour. The strongest risk factor for predicting verbal victimization is prior bullying victimization. Students who are physically victimized are five times more likely than those who are not to be verbally victimized. Those who are socially victimized are over three times as likely as those who are not to be verbally victimized. Those who are cyber victimized are over twice as likely as those who are not to be verbally victimized. These findings are consistent with others reported (Cappadocia et al., 2013, Hinduja & Patchin, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang et al., 2010). Other risk factors include climate of fear and community safety. Student belonging was found to be a protective factor related to verbal bullying victimization.

Three Level-2 predictors are significantly related to verbal bullying victimization: community engagement, parental engagement, and schools with focused school development. Parental engagement and schools with focused school development are identified as risk factors. It is possible that these variables can be seen as risk factors due to the fact that parents and schools are becoming engaged due to higher levels of bullying victimization. Community engagement is a protective factor.

The Level-1 predictors found to be related to social bullying victimization are being female; being in Grade 12; and having been a victim of physical, verbal, or cyber bullying; climate of fear; and antisocial behaviour. The strongest risk factor for social bullying victimization is having been previously bullied. Students who are either verbally or cyber victimized are three times more likely than those who are not to be

socially bully victimized. Similarly, students who are physically victimized are almost twice as likely as those who are not to be verbally victimized. Once again, these findings are consistent with previous findings (Cappadocia et al., 2013, Hinduja & Patchin, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang et al., 2010). Being female, being in Grade 12, and being in school with higher levels of fear of crime are risk factors for social bullying victimization. Only one protective factor was found and that was schools that have lower levels of antisocial behaviour exhibit lower levels of social bullying victimization.

Three Level-2 predictor variables are significantly related to social bullying victimization: student focused schools, student extracurricular activities, and community engagement. Two of the previous appear as risk factors: schools that are student focused and community engagement. It is possible that these two variables can be seen as risk factors due to the fact that communities are becoming more engaged and schools are becoming student focused due to higher levels of bullying victimization. Student extracurricular activities is a protective factor.

The Level-1 factors that are related to cyber bullying victimization are being female; being in Grade 9 or Grade 12; peer action; having been a victim of either physical, verbal, or social bullying; bullying climate; community safety; climate of fear; and antisocial behaviour. The strongest risk factor for cyber victimization is prior bullying victimization. Students who are socially victimized are three times more likely than those who are not to be cyber victimized. Students who are verbally victimized are just over twice as likely as those who are not to be verbally victimized. Students who are physically victimized are almost 50% more likely not to be verbally victimized than those

who are not (Cappadocia et al., 2013, Hinduja & Patchin, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang et al, 2010). Unlike other types of bullying victimization, being in Grade 9 or Grade 12 are strong predictors of cyber victimization. Other risk factors include being female, a climate of fear (i.e. where students are afraid that they will be forced to do something that they do not want to do), and students engaging in antisocial behaviour. Protective factors include bullying education, community safety, and a school climate that eschews bullying.

Two Level-2 predictors are related to cyber victimization: schools having a caring culture and parental engagement. Parental engagement is a risk factor. Schools having a caring culture is a protective factor against cyber bullying victimization.

5.5 Key Findings – Bullying Victimization

Evidence from this study reveals that the greatest risk factor to becoming a victim of bullying is the prevalence of concomitant types of victimization. This finding is consistent with other research on victimization (Cappadocia et al., 2013, Hinduja & Patchin, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang et al., 2010). Other risk factors include schools that have higher levels of climate of fear and higher levels of student antisocial behaviour. Gender is not a consistent predictor of victimization: males are more likely than females to be victims of physical bullying, and gender was not found to be significantly related to verbal bullying. Females are more likely than males to be victims of cyber bullying. Grade level is also not consistent across types of victimization. Physical victimization is less likely to be experienced in Grades 9 and 12.

Few of the Level-2 factors are significantly related to victimization. Parental

engagement and focused school development are both risk factors for verbal bullying

victimization. In addition, student focused schools and community engagement are both

risk factors for social bullying. Also, parental engagement in schools is a risk factor for

cyber bullying victimization.

Some factors that have been found to be protective factors in the literature were

not found to be significant in this study (Swearer & Espelage, 2011; Khoury-Kassabri et

al., 2004; Murray-Harvey, 2010). These include student engagement, student efficacy,

self-esteem, bystanders, family responsiveness, adult responsiveness, and adult respect

and recognition. Student extracurricular activities exhibit protective affects for three

types of victimization (physical, social and cyber), two of which were significant.

Three Level-2 predictors were found to uniquely act as protective factors. These

were as follows: engagement in dialogue in terms of physical victimization, community

engagement is a protective factor when examining verbal bullying victimization and

caring culture in terms of cyber victimization.

5.6 Bullying

The Level-1factors that are found to be related to physical bullying are being

male; being in Grade 9 or 12; self-esteem; having been a verbal, social, or cyber bully;

bullying climate; bullying education; climate of fear; and antisocial behaviour. The

strongest risk factor for physical bullying is prior bullying behaviour. Students who are

verbal bullies are almost five times more likely than those who are not to be physical

bullies, cyber bullies are over one and a half times more likely than those who are not to

be physical bullies, and social bullies are 25% more likely than those who are not to be physical bullies. Risk factors related to being a physical bully include being educated about bullying, which is counterintuitive, and exhibiting antisocial behaviour. Protective factors include being female, being in Grade 9 or Grade 12, having high self-esteem and being in a school that is not accepting of bullying. These findings are similar to that reported by others (Cappadocia et al., 2013, Craig et al., 2009; Totten & Quigley, 2005, Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Wang et al., 2010).

Four Level-2 predictors were related to physical bullying: extracurricular activities, parental engagement, an innovative school, and teachers valuing professional development. Three of these are risk factors: parental engagement, an innovative school, and teachers valuing professional development. These findings seem counterintuitive. It is possible that there is a need for parental involvement due to the level of bullying taking place in these schools. Innovative schools may create a competitive environment where bullying is fostered and teachers may be more likely to access professional development relating to bullying behaviours as a need to deal with bullying taking place in their schools. Student extracurricular activities is a protective factor.

The Level-1 predictor variables that are found to be related to verbal bullying are: being a Grade 12 student; adult responsiveness; having been a physical, social, or a cyber bully; bullying climate; bullying education; climate of fear; and antisocial behaviour. The strongest risk factor for verbal bullying is prior bullying behaviour. Students who are social bullies are almost five times more likely than those who are not to be verbal bullies, physical bullies are almost five times more likely than those who are not to be

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verbal bullies, and cyber bullies are almost three times more likely than those who are not to be verbal bullies. Other risk factors include bullying education, climate of fear, antisocial behaviour, and adult responsiveness. There is one protective factor, a school climate where bullying is not accepted. These findings are similar to what has been found in the literature (Cappadocia et al., 2013; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010; Thapa, 2013; Wang et al., 2010).

Five Level-2 predictors were related to verbal bullying: student focused schools, a caring culture, parental engagement, an innovative school, and teachers engaging in dialogue. Three of the aforementioned predictors can be seen as risk factors: parental engagement, an innovative school, and teachers engaging in dialogue. It is possible that innovative schools lead to more competition and thus the possibility of bullying as a way of trying to outdo others. Parental engagement and teachers engaging in dialogue may be an attempt to deal with the bullying taking place in these schools. Two variables are protective factors: student focused schools and schools which have a caring culture.

The Level-1 predictor variables that are related to social bullying are being a female; being in Grade 12; student belonging; having been a physical, verbal, or cyber bully; climate of fear; and antisocial behaviour. The strongest risk factor for being a social bully is prior bullying behaviour. Students who are verbal bullies are almost five times more likely to be social bullies compared to those who do not engage in verbal bullying. Cyber bullies are over three times more likely than those who are not to be social bullies, and those who are physical bullies are 34% more likely to be social bullies. Other risk factors include being female, student belonging, climate of fear, and antisocial

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behaviour. No Level-2 predictors were related to social bullying. These findings are consistent with what has been reported in the literature (Cappadocia et al., 2013; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2007; Sourander et al., 2010; Thapa, 2013; Wang et al., 2010).

The Level-1 predictor variables that are related to cyber bullying are being female; being in Grade 9; being in Grade 12; student belonging; self-esteem; peer action; having been a physical, verbal, or social bully; bullying climate; and antisocial behaviour. Again, the strongest risk factor for cyber bullying is prior bullying behaviour. Students who are social bullies are over three times more likely to be cyber bullies compared to those who are not. Students who are verbal bullies are almost three times more likely than those who are not to be cyber bullies. Students who are physical bullies are 61% more likely than those who are not to be cyber bullies. Other risk factors include being female, being in Grade 9 or Grade 12, peer action, and antisocial behaviour. One protective factor is a school climate where bullying is not accepted. None of the Level-2 predictors were significantly related to cyber bullying. These findings are similar to what has been found in the literature (Cappadocia et al., 2013; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2007; Sourander et al., 2010; Thapa, 2013; Wang et al., 2010).

5.7 Major Findings - Bullying

The greatest risk factor for being a bully is engaging in other types of bullying. These findings are consistent with other research (Cappadocia et al., 2013; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2007; Olweus, 2012; Sourander et al., 2010). Other risk factors include schools where there are higher levels of climate of fear and

antisocial behaviour. These finding are consistent with other research, as well (Barboza et al., 2009; Bayraktar, 2011; Cappadocia et al., 2013; Gregory et al., 2011; Harel-Fisch et al., 2010; Lee, 2011). Surprisingly, bullying education was a risk factor for both physical and verbal bullying. This finding is counterintuitive and could mean that we need to be cautious when educating students about bullying.

Gender is not a consistent predictor of bullying although females are less likely than males to be physical bullies. Gender is not significantly related to verbal bullying, girls are more likely than boys to engage in social and cyber bullying. Types of bullying vary across grade levels. For instance, physical bullying is less likely to be experienced in Grades 9 or 12 as compared to Grade 6.

At Level-2 few of the factors were significantly related to bullying. Parental engagement and focused school development were both risk factors for verbal bullying victimization. An innovative school and valuing professional development are both risk factors for physical bullying. An innovative school and teachers engaging in dialogue are both significantly related to verbal bullying, and are considered risk factors for bullying.

Surprisingly, some factors that have been found to be protective factors in the literature were not found to be significant in this research when using HLM (Swearer & Espelage, 2011; Khoury-Kassabri et al., 2004; Murray-Harvey, 2010). These include student engagement, student efficacy, self-esteem, bystanders, family responsiveness, adult responsiveness, and adult respect and recognition. Schools with climates that are not supportive of bullying were related to lower levels of physical and verbal bullying (Barboza et al., 2009; Bayraktar, 2011; Gregory et al., 2011; Harel-Fisch et al., 2010; Lee, 2011; Thapa, 2013).

Three Level-2 predictors were found to uniquely act as protective factors: student extracurricular activities and physical bullying and student focused schools, and a caring culture and verbal bullying.

This research has shown that the most prominent predictors of bullying and victimization are climate of fear, antisocial behaviour, and previous experiences with victimization and bullying behaviours. To help curb bullying in schools there will have to be a concerted effort to deal with students who are likely to engage in behaviours such as carrying weapons, stealing, or damaging property. There will also be a need to address students who threaten, harass students, or make students do things that they do not want to do. Since students are likely to engage in more than one type of bullying there needs to be an effort to educate school personnel how to identify and stop bullying before it leads to other forms of bullying particularly cyber bullying.

Only one study was found that directly linked leadership to bullying in schools. Building on this work, this thesis used some of these measures and found that some of the results were counterintuitive, such as teachers perceiving the need for professional development, innovative schools, and teachers engaging in dialogue.

5.8 Strengths and Limitations of this Study

This study has a number of strengths. The data were collected on schools in rural and urban areas, from large and small schools, and schools of differing configurations (e.g., K-12, 7-9, 10-12). The student questionnaire employed has been used in other studies to collect data on over 15,000 students and has a high internal consistency for the scales. The teacher questionnaire showed high reliability that allowed the use of teacher-

level data that facilitated the examination of school-level factors on victimization and bullying that otherwise may not have been part of this study.

The major limitation of this study is that it is cross-sectional and does not address causation. This is a limitation of much of the research on school bullying victimization and bullying. With self report data there is the potential that some students have a tendency to under report perpetration (Cornell & Bandyopadhyay, 2010).

A further limitation relates to the time gap between the collection of the data from the two data sets. Teacher level data was collected late Spring of 2008, just prior to school ending for the summer break while the student data was collected in early Fall of 2008. It is possible that some of the teachers may have left the schools or retired from the school, when the teacher data were collected, leaving the possibility that some school cultures may have changed. Although, turnover is relatively low in most schools and it is unlikely that this would be a large change is such a short period of time.

5.9 Implications for the Prevention of Bullying

At the bivariate level, findings from this research suggests that creating school environments where children and adults have healthy relationships can lead to lower levels of victimization and bullying. The study also reveals that schools where there are lower rates of climate of fear and less antisocial behaviour, and where bullying is not accepted, are schools where lower levels of victimization and bullying are evident. In other words, anti-bullying programs should still concentrate on whole-school approaches when trying to create safe and respectful schools

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Through the use of multilevel logistic analysis, this research has shown that the most robust predictors of bullying and victimization are climate of fear, antisocial behaviour, and previous experiences with victimization and bullying behaviours. Perhaps the most significant finding is that traditional types of bullying in schools are directly related to cyber victimization and bullying. In other words, anti-bullying programs should still concentrate on whole-school approaches when trying to create safe and respectful schools. The efforts of anti-bullying programs have been shown to be successful when implemented properly and should have a positive impact on cyber victimization and cyber bullying, which has recently become a major focus in bullying research due to its link to student suicides (Craig et al., 2010; Ttofi & Farrington, 2011). In addition, given that the most robust findings were for antisocial behaviours and chronic bullying where all types of bullying are employed there is also a need to engage in secondary and tertiary prevention where the focus is on bullies who may not be influenced by anti-bullying programs.

5.10 Implications for Future Research

The social-ecological theory employed in this research provided a framework for understanding the risk and protective factors regarding bullying victimization and bullying behaviour. This framework is important since it allows for a broader look at the dynamics that lead to bullying victimization and bullying. Using such a framework also allows the researcher to control for various factors and while at the same time being able

to eliminate those variables that are not related to bullying victimization and bullying in a particular context.

The impact of family, peers, adults, and the community were not found to be significantly related to victimization and bullying behaviours using the multilevel logistic regression. This suggests that using more advanced analysis techniques is important in studying the complex nature, and in particular when there may be complex interactions between the individuals, institutions, and communities. Using simple analysis techniques may end up leading researchers to inaccurate conclusions.

In this research each type of victimization and bullying behaviour was examined separately. This allowed for an analysis of which factors commonly and uniquely predicted each type of victimization and bullying behaviour. Creating one variable called victimization or bullying means that the distinction of each type of victimization or bullying is lost. Given the differences in rates and causes of these different types of bullying victimization and bullying, future research in this field should treat each type of victimization or bullying separately.

Large quantitative studies allow us to determine levels of prevalence and which variables are related to victimization and bullying. However, there is a dearth of qualitative studies on the impact of bullying. There is a need to study why it is that the strongest predictors of bullying are culture of fear, antisocial behaviour in schools, and previous bullying experiences. Also, future research is needed to explore some of the apparent counterintuitive findings in this study (e.g. innovative schools, professional development and parental engagement).

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5.11 Conclusions

This research has shown that school bullying victimization and bullying is indeed taking place in the schools of one school district in Newfoundland and Labrador. Children are victims of physical, verbal, social, and cyber bullying. Conversely, children bully others physically, verbally, socially, and through technology. The victims and perpetrators in this study were both males and females in Grades 6, 9, or 12. In this study geographic location of schools has no impact on either being a victim or being a bully. However, higher levels of climate of fear and antisocial behaviour in a particular location or school, place students at greater risk of becoming victims or bullies. This research reveals that the greatest risk factor of being a victim of differing acts of bullying is being a victim of other types of bullying (i.e. if one is a victim of physical bullying it is more likely the he/she will be a victim of cyber bullying). This research has also shown that the biggest risk factor of becoming a bully is engaging in other types of bullying. Other risk factors include being in schools with climates of fear and where antisocial behaviour is prevalent.

Protective factors include positive school climates, bullying education, positive anti-bullying climates, living in a safe community, schools with extracurricular activities, and caring school cultures. Surprisingly, student engagement, student efficacy, self-esteem, family responsiveness, adult responsiveness, and adult respect and recognition were not significant with most types of victimization or bullying.

This research used the social-ecological theory as a framework to assess school bullying. Interestingly, certain aspects of the theory were not significantly related to

bullying victimization or bullying behaviour. Family and adults, including the teacher-level data, did not have any overall significant impact on rates of victimization and bullying at the multilevel logistic level of analysis. Perhaps the most surprising result was the lack of a strong relationship with peers and either victimization or bullying behaviours. While perceived safety in the community related to lower levels of victimization and bullying, it was not found across all dependent variables. The strongest predictors of victimization or bullying were being a victim or a bully, being in schools with a climate of fear, and in schools where there are higher levels of antisocial behaviour.

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APPENDICIES

Appendix A
PERSONAL SAFETY AND CARING IN SCHOOL STUDY

This survey was developed to provide important information about student experiences with personal safety. This is your chance to tell us what it is like to be a student in your school.

The information you provide about your experiences is very valuable for the school and the school district and can help in planning to support student success.

DO NOT write your name on this survey or scan sheet. This survey is voluntary and your answers are anonymous and confidential. That means no one will know what your answers are.

This is not a test and there are no right or wrong answers, but it is important that you answer honestly.

Whether or not you answer the questions will not affect your grades or school work. Teachers and principals will not see your answers. Make sure to read every question. Please do not look at other students' answers. If you are not comfortable answering a question or if you don't know what it means, just leave it blank.

Thank you very much for your help.

Adapted from the Safe School and Social Responsibility for Elementary Students Survey (2006). Institute for Safe Schools of BC at the University College of the Fraser Valley with permission.

INSTRUCTION FOR THE COMPLETION OF YOUR SCAN SHEET

DO NOT write your name on this survey

Your answers are anonymous and confidential; this means no one will know that these are your answers.

In the space where you are asked to write your LAST NAME place the name of your CURRENT SCHOOL and fill in appropriate bubbles.

In the space where you are asked to write your FIRST NAME place the name of the SCHOOL THAT YOU ATTENDED LAST YEAR and fill in appropriate bubbles. Please do not leave blank.

In the box on the bottom left hand corner of your answer, ignore BIRTHDATE and IDENTIFICATION NUMBER. Under SEX select MALE or FEMALE

Under GRADE OR EDUCATION shade the bubble that identifies your grade: 6, 9 or 12.

We will now proceed to answer the questions related to personal safety and school related questions.

SECTION A

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

Please fill in the bubble that best describes you.	A	B	C	D	E
Q1. How many older brothers and sisters do you have?	0	1	2	3	4 or more
	A	B	C	D	E
Q2. How well are you liked by other students at your school? Please fill the bubble	Better than most students	About the same as most students	Worse than most students	I'm not sure	
	A	B	C	D	E
Q3. At school, your friends are… Please fill the bubble	all from the same racial/ethnic background as you	mostly from the same racial/ethnic background as you	mostly from a different racial/ethnic background from you	from all different racial/ethnic backgrounds	

SECTION B

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

These questions ask how you feel about things – about yourself and about school, during your school experience over the past 12 months.

Please fill in the bubble that best describes how you feel.	A	B	C	D	E
Q4. I do lots of important things.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q5. In general I like being the way I am.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q6. Overall, I have a lot to be proud of.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q7. I can do things as well as most other people.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q8. Other people think I am a good person.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q9. A lot of things about me are good.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q10. I am as good as most other people.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q11. When I do something, I do it well.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree

SECTION B

For all questions in this Section, please fill in the bubble on your answer sheet that
matches the letter above your response.

The next questions ask about feeling safe at school and in your community this <u>past
12 months</u>. Safe means feeling comfortable, relaxed and not worried that something bad
could happen to you.

Please choose the response that best describes what you feel.	A	B	C	D	E
Q12. I feel safe at school.	Never	Hardly ever	Some of the time	Most of the time	Always
Q13. I feel safe at school activities and events (fieldtrips, outdoor school, sports).	Never	Hardly ever	Some of the time	Most of the time	Always
Q14. I feel safe on my way to and from school.	Never	Hardly ever	Some of the time	Most of the time	Always
Q15. I feel safe in my neighbourhood or community.	Never	Hardly ever	Some of the time	Most of the time	Always

For all questions in this Section, please fill in the bubble on your answer sheet that
matches the letter above your response.

Please indicate how often the following things happen to you.

At school or school events this over the past 12 months, how often are you worried **or afraid that you will…**	A	B	C	D	E
Q16. be physically attacked or hurt by other students?	Never	Hardly ever	Some of the time	Most of the time	Always
Q17. be talked into doing things you are not comfortable with by other students?	Never	Hardly ever	Some of the time	Most of the time	Always
Q18. have rumours or gossip spread about you?	Never	Hardly ever	Some of the time	Most of the time	Always
Q19. be verbally harassed or embarrassed?	Never	Hardly ever	Some of the time	Most of the time	Always
Q20. be made fun of or left out of activities?	Never	Hardly ever	Some of the time	Most of the time	Always

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

These questions ask how you feel about things – about yourself and about school, over the past 12 months.

	A	B	C	D	E
Q21. The adults at my school treat students fairly.	Never	Hardly ever	Some of the time	Most of the time	Always
Q22. I can get extra help from adults at my school if I need it.	Never	Hardly ever	Some of the time	Most of the time	Always
Q23. I can get extra help from my family if I need it.	Never	Hardly ever	Some of the time	Most of the time	Always
Q24. I like school.	Never	Hardly ever	Some of the time	Most of the time	Always
Q25. I feel like I belong at my school.	Never	Hardly ever	Some of the time	Most of the time	Always
Q26. Other students at my school accept me as I am.	Never	Hardly ever	Some of the time	Most of the time	Always
Q27. When I have a problem, there are students who will help me.	Never	Hardly ever	Some of the time	Most of the time	Always
Q28. Students at my school really care about each other.	Never	Hardly ever	Some of the time	Most of the time	Always
Q29. Adults in my school respect me.	Never	Hardly ever	Some of the time	Most of the time	Always
Q30. Adults in my family respect me.	Never	Hardly ever	Some of the time	Most of the time	Always
Q31. Students only care about themselves and not about others.	Never	Hardly ever	Some of the time	Most of the time	Always
Q32. Adults in my school really care about students.	Never	Hardly ever	Some of the time	Most of the time	Always
Q33. Students at my school work together to solve problems.	Never	Hardly ever	Some of the time	Most of the time	Always
Q34. There is an adult in my school that I can go to for support or advice or talk to about problems and worries.	Never	Hardly ever	Some of the time	Most of the time	Always
Q35. There is an adult in my family that I can go to for support or advice or talk to about my problems and worries.	Never	Hardly ever	Some of the time	Most of the time	Always
Q36. In my school, students have a say in deciding what goes on.	Never	Hardly ever	Some of the time	Most of the time	Always
Q37. Students treat teachers and adults at school with respect.	Never	Hardly ever	Some of the time	Most of the time	Always
Q38. I know what my school's code of conduct says.	Never	Hardly ever	Some of the time	Most of the time	Always

SECTION C

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

These questions ask how you feel about things – about yourself and about school, over the past 12 months.

	A	B	C	D	E
Q39. The adults at my school have talked to us about the school code of conduct.	Never	Hardly ever	Some of the time	Most of the time	Always
Q40. Adults at my school do a good job of responding to bullying and harassment.	Never	Hardly ever	Some of the time	Most of the time	Always
Q41. Adults at my school do a good job of responding to physical violence (punching, kicking, weapons).	Never	Hardly ever	Some of the time	Most of the time	Always
Q42. I feel very different from other students here.	Never	Hardly ever	Some of the time	Most of the time	Always
Q43. It is hard for people like me to be accepted in this school.	Never	Hardly ever	Some of the time	Most of the time	Always

SECTION D

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

How often have you engaged in the following activities at school, over the past 12 months?

	A	B	C	D	E
Q44. Pushed or hit someone else.	Never	Once or a few times	About once a month	About once a week	Many times a week
Q45. Threatened someone with physical violence.	Never	Once or a few times	About once a month	About once a week	Many times a week
Q46. Carried a weapon.	Never	Once or a few times	About once a month	About once a week	Many times a week
Q47. Stolen someone else's property.	Never	Once or a few times	About once a month	About once a week	Many times a week
Q48. Damaged school or someone else's property (including graffiti).	Never	Once or a few times	About once a month	About once a week	Many times a week

SECTION E

The next questions ask about BULLYING.
Bullying happens when a person who has more power or some advantage (bigger, more status, etc.) tries to bother, hurt, make fun of or attack another person (it's not an accident), and does so repeatedly. Sometimes several students will bully another student or group of students.

There are four main kinds of bullying. Some examples are:

- Physical bullying -   when someone hits, shoves, kicks, spits, or beats up another person
  when someone damages or steals a student's property

- Verbal bullying -   name-calling, mocking, hurtful teasing
  humiliating or threatening someone
  making people do things they don't want to do

- Social bullying -   excluding others from the group
  spreading gossip or rumours about others
  making others look foolish
  making sure others do not spend time with a certain student

- Cyber bullying –   using computer, e-mail, phone or cellular phone text messages to:
  hurt someone's feelings
  make someone look bad
  threaten someone

SECTION E

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.
These questions ask about how often you have been bullied by other students at school, over the past 12 months.

How often have you been bullied by other students in the following ways?	A	B	C	D	E
Q49. Physical bullying (hitting, shoving, kicking).	Never	Once or a few times	About once a month	About once a week	Many times a week
Q50. Verbal bullying (name-calling, teasing, threats, putdowns).	Never	Once or a few times	About once a month	About once a week	Many times a week
Q51. Social bullying (exclusion, rumours, gossip, humiliation).	Never	Once or a few times	About once a month	About once a week	Many times a week
Q52. Cyber bullying (using computer or text messages to exclude, threaten or humiliate).	Never	Once or a few times	About once a month	About once a week	Many times a week

SECTION E

For all questions in this Section, please fill in the bubble on your answer sheet that
matches the letter above your response.

These questions ask about how often you have bullied other students at school, <u>over
the past 12 months</u>.

How often have you <u>taken part in bullying</u> others in the following ways?	A	B	C	D	E
Q53. Physical bullying (hitting, shoving, kicking).	Never	Once or a few times	About once a month	About once a week	Many times a week
Q54. Verbal bullying (name-calling, teasing, threats, putdowns).	Never	Once or a few times	About once a month	About once a week	Many times a week
Q55. Social bullying (exclusion, rumours, gossip, humiliation).	Never	Once or a few times	About once a month	About once a week	Many times a week
Q56. Cyber bullying (using computer or text messages to exclude, threaten or humiliate).	Never	Once or a few times	About once a month	About once a week	Many times a week

For all questions in this Section, please fill in the bubble on your answer sheet that
matches the letter above your response.

Please choose the response that best describes what you feel.	A	B	C	D	E
Q57. Bullying is just a normal part of being a kid.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q58. It is important to report bullying to adults at school.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q59. It is up to me to deal with bullying at school.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q60. In my group of friends, bullying is okay.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q61. Other students try to help you when you are being bullied.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Q62. Many students get bullied because they deserve it.	Strongly agree	Agree	Undecided	Disagree	Strongly disagree

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SECTION E

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

The following questions ask what actions you have taken when you have been bullied, picked on, or discriminated against by others, <u>at school and school events, over the past 12 months</u>.

When you have been bullied, picked on, or discriminated against by others, how often **have you…**	A	B	C	D	E
Q63. told the person(s) to stop?	Never	Hardly ever	Some of the time	Most of the time	Always
Q64. talked to the person(s) about it?	Never	Hardly ever	Some of the time	Most of the time	Always
Q65. walked away?	Never	Hardly ever	Some of the time	Most of the time	Always
Q66. ignored or avoided the person(s)?	Never	Hardly ever	Some of the time	Most of the time	Always
Q67. did something to distract the person(s)?	Never	Hardly ever	Some of the time	Most of the time	Always
Q68. stayed home from school?	Never	Hardly ever	Some of the time	Most of the time	Always
Q69. got your friends to get back at the other person(s)?	Never	Hardly ever	Some of the time	Most of the time	Always
Q70. fought back physically?	Never	Hardly ever	Some of the time	Most of the time	Always
Q71. found a new friend or group of friends?	Never	Hardly ever	Some of the time	Most of the time	Always
Q72. talked to an adult at home?	Never	Hardly ever	Some of the time	Most of the time	Always
Q73. talked to another student about it?	Never	Hardly ever	Some of the time	Most of the time	Always
Q74. reported it to an adult at school?	Never	Hardly ever	Some of the time	Most of the time	Always
Q75. got your friends to solve the problem?	Never	Hardly ever	Some of the time	Most of the time	Always
Q76. talked to the person(s) friends about it?	Never	Hardly ever	Some of the time	Most of the time	Always
Q77. did nothing?	Never	Hardly ever	Some of the time	Most of the time	Always

SECTION E

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

The following questions ask what actions you have taken when <u>you have seen others</u> being bullied, picked on or discriminated against by others, <u>at school and school events, over the past 12 months</u>.

When you have seen <u>others </u>being bullied, picked on, or discriminated against, how often **have you …**	A	B	C	D	E
Q78. told the person(s) doing the bullying to stop?	Never	Hardly ever	Some of the time	Most of the time	Always
Q79. talked to the person(s) doing the bullying?	Never	Hardly ever	Some of the time	Most of the time	Always
Q80. talked to the bullying person(s) friends about it?	Never	Hardly ever	Some of the time	Most of the time	Always
Q81. walked away?	Never	Hardly ever	Some of the time	Most of the time	Always
Q82. ignored or avoided the person(s) who bullied?	Never	Hardly ever	Some of the time	Most of the time	Always
Q83. did something to distract the person(s) who bullied?	Never	Hardly ever	Some of the time	Most of the time	Always
Q84. helped the person being hurt to get away?	Never	Hardly ever	Some of the time	Most of the time	Always
Q85. talked to the person being hurt, afterwards?	Never	Hardly ever	Some of the time	Most of the time	Always
Q86. got your friends to help solve the problem?	Never	Hardly ever	Some of the time	Most of the time	Always
Q87. got your friends to get back at the person(s)?	Never	Hardly ever	Some of the time	Most of the time	Always
Q88. stayed home from school?	Never	Hardly ever	Some of the time	Most of the time	Always
Q89. talked to an adult at school?	Never	Hardly ever	Some of the time	Most of the time	Always
Q90. talked to another teen/youth about it?	Never	Hardly ever	Some of the time	Most of the time	Always
Q91. reported it to an adult at school?	Never	Hardly ever	Some of the time	Most of the time	Always
Q92. talked about it to an adult at school?	Never	Hardly ever	Some of the time	Most of the time	Always
Q93. did nothing?	Never	Hardly ever	Some of the time	Most of the time	Always

SECTION F

For all questions in this Section, please fill in the bubble on your answer sheet that matches the letter above your response.

At my school <u>over the past 12 months</u>. . .	A	B	C	D	E
Q94. adults talk positively about diversity (the ways people are different from each other - race, culture or ability).	Never	Hardly ever	Some of the time	Most of the time	Always
Q95. students talk positively about diversity (the ways people are different from each other race, culture or ability).	Never	Hardly ever	Some of the time	Most of the time	Always
Q96. adults speak out against stereotyping (unfairly judging) others.	Never	Hardly ever	Some of the time	Most of the time	Always
Q97. students speak out against stereotyping (unfairly judging) others.	Never	Hardly ever	Some of the time	Most of the time	Always
Q98. we learn about people of various cultures, races or abilities.	Never	Hardly ever	Some of the time	Most of the time	Always
Q99. adults help us learn about bullying.	Never	Hardly ever	Some of the time	Most of the time	Always
Q100. we have learned about discrimination.	Never	Hardly ever	Some of the time	Most of the time	Always
Q101. adults help us learn how to recognize and deal with bullying.	Never	Hardly ever	Some of the time	Most of the time	Always
Q102. adults help us learn how to recognize and deal with discrimination.	Never	Hardly ever	Some of the time	Most of the time	Always
Q103. I do kind things for other students at school.	Never	Hardly ever	Some of the time	Most of the time	Always
Q104. I see other students do kind things for others at school.	Never	Hardly ever	Some of the time	Most of the time	Always
Q105. students learn to work together and help each other.	Never	Hardly ever	Some of the time	Most of the time	Always
Q106. students learn to solve problems with others in peaceful ways.	Never	Hardly ever	Some of the time	Most of the time	Always
Q107. students take responsibility for one another.	Never	Hardly ever	Some of the time	Most of the time	Always
Q108. students learn to consider other people's points of view.	Never	Hardly ever	Some of the time	Most of the time	Always
Q109. students learn to respect the rights of other people.	Never	Hardly ever	Some of the time	Most of the time	Always
Q110. students take an active role in improving the classroom and school.	Never	Hardly ever	Some of the time	Most of the time	Always
Q111. students are trying to make the world a better place.	Never	Hardly ever	Some of the time	Most of the time	Always

Thank you for taking this survey!

Modified version of Safe Schools & Social Responsibility Survey for Elementary Students (2006)

Appendix B

Parental consent letter for student participation in a project

Purpose

The purpose of this research is to determine if bullying is taking place in schools and to find out what is causing these events. If bullying is taking place in schools it means that many students may not feel safe and learning may not take place. My research is being supported by The Safe and Caring School Committee (NL Department of Education) and the Eastern School District. I am asking permission for your son or daughter to participate in my research titled, The impact of individual and school characteristics on types and levels of bullying in Newfoundland and Labrador schools.

What is involved?

Your child will be asked to complete one questionnaire. The questionnaire asks students questions about their experiences in school as well as if they have any concerns with their safety at school.

About the researcher

I am a PhD graduate student in the Division of Community Health and Humanities at Memorial University of Newfoundland.

Gerald White
737-8100
geraldw@mun.ca

Being involved is voluntary

Completing the questionnaire is completely voluntary. Students do not have to participate in the research if they do not want to, and they will be told that participation is voluntary. They can opt out of completing the questionnaire at any time.

Information is private

Teachers will not know who completed the questionnaires. Students' grades will not be affected by these activities. Any information provided by students will be confidential and will not be seen by teachers, administrators, or anyone except the researcher. That information will be stored in a secured location at Memorial University.

Being involved has no risks

I do not anticipate any risks of harm by completing the questionnaires. While there are no immediate benefits, participation may lead to valuable information concerning safety in our schools.

<u>Consent for participation</u>

Each student who completes a questionnaire will have provided consent to do so. Students will be told beforehand, that their involvement is voluntary.

Parental consent will be assumed unless parents indicate that they do not want their child to complete a questionnaire. I have chosen this process as a result of the following understandings:

students' involvement is directly related to school life,

students will, and can, decide for themselves whether or not to participate,

independent reviews by the ethics committee at Memorial University (ICEHR), the Eastern School District, and the school principal has safeguarded the rights and well-being of the students,

knowing that students' rights and well-being is assured and that their involvement is part of their classroom activities, this will allow as many students as possible to be involved.

<u>For Further Information or Complaints</u>

This study has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you would like further information about this study, please contact me. My phone number is 737-8100 or email is geraldw@mun.ca.   If you would like to talk to an independent third party you can contact my supervisor, Dr. Richard Audas, 777-7395, raudas@mun.ca or the Associate Dean of Research & Graduate Studies, 777-6762/6817.

If you have ethical concerns about my research (such as the way your child has been treated or your child's rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

Decline of Consent for Student Participation

After reading the description of the project titled The impact of individual and school characteristics on types and levels of bullying in Newfoundland and Labrador schools, I have decided that I do not wish my son/daughter to be involved.
Child's name: _____
Parent's Signature   _____

Please return this portion to your child's teacher if you do not wish your child to participate.

Appendix C

For the Media

My name is Gerald White. I am a PhD graduate student in the Division of Community Health and Humanities at Memorial University of Newfoundland. I am conducting research into bullying in the Eastern School District here in Newfoundland and Labrador. This research is being conducted to determine if bullying is taking place in schools, and if so, to find out what is causing these events. If bullying is taking place in schools it might mean that many students may not feel safe, and effective learning may be impeded.

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a parent), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

If you have any questions, please feel free to contact me at 737-8100 or by email at geraldw@mun.ca.

Appendix D

Instructions for Survey Administration

Parent/Student Information

Send home to parents a notice about the survey.
Inform parents there will be a survey in their child's school.

Before Survey Administration

Administrative training for the survey will be provided.
Review the responsibilities for each grade level.
Identify activities for students not participating in the survey.
Identify the resources and supports available for follow-up and referrals for students and parents making disclosures and requesting support.
Inform students of upcoming survey.
Send a note home to parents about the upcoming survey.

Day of the survey

- Critical – Make sure that there is a school id number on each survey.
- Inform students that their survey has an envelope attached so that their answers will be private.
- Students complete their survey in class.
- Refer students not completing the survey to another activity such as reading or homework assignments.
- After the survey is completed have the students tear off the last sheet.
- Ensure that the students put their surveys in their individual envelopes and seal them.
- Collect the completed surveys in the sealed envelopes.
- Provide students with the opportunity to discuss the survey after it is completed using the actual questionnaire, writing students responses on a flip chart for discussion.
- Follow-up and make referrals to student services for students and/or parents requesting help related to the survey.

Adapted from the Canadian Public Health Associations Assessment Toolkit for Bullying, Harassment and Peer Relations at School, 2004.

Appendix E

Permission to use the 2006 Safe School and Social Responsibility Survey

This email grants Gerry White permission to use the following survey instruments developed at the University College of the Fraser Valley:

1. The Safe School Social Responsibility Survey (SSSRS) - Secondary
2. The Safe School Social Responsibility Survey (SSSRS) - Elementary

Permission is granted for use in doctoral research being conducted in the province of New Brunswick (should be Newfoundland and Labrador). Any other purpose beyond that intended for this research project must be approved separately. No fees will be charged for the use of these instruments. Acknowledgment of the "Institute for Safe Schools of BC at the University College of the Fraser Valley" is appreciated.

Thanks,
Terry

Terry Waterhouse
School of Criminology and Criminal Justice
University College of the Fraser Valley

July 10, 2007