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The Relationship Between Bullying and Achievement: A Study of Related School and Family Factors

by

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ABSTRACT

The relationship between bullying and achievement, including family and school factors, was examined. The sample consisted of 10- and 11-year old children (n = 2084) extrapolated from the National Survey of Children and Youth, which is a stratified sample of households across all provinces in Canada. To analyze the data, descriptive statistics and correlations between variables related to achievement and bullying were calculated. Female students did not differ in reading, writing, or mathematics achievement scores in comparison to male students. In addition, male students were no more likely to be victims of bullying than were females.

Latent variables were devised from related indicator variables; a latent variable path analysis was conducted to test the model of achievement and bullying. Results show that there was goodness of fit between the data and the model. After six iterations the model converged $\chi^2(32) = 300.00, p < .001$ with a standardized residual error of .05 and a Comparative Fit Index of .98. These results indicate that children who are likely to be bullied at school obtain low levels of achievement, show little conscientiousness and enjoyment of school, and have parents who provide little support to their teachers.

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DEDICATION

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CHAPTER ONE

Introduction

Bullying among schoolchildren is an old phenomenon (Olweus, 1993). Researchers began examining bullying in the early 1970s, initially in Scandinavia and later in other countries such as Canada, the United States, Australia, the Netherlands, England, and Japan (Olweus, 1993). Indeed, it is considered to be an international issue (Rigby, 1998). It is difficult to determine trends in prevalence rates of bullying over time due to methodological problems such as small sample sizes and nonstandardized definitions of the term bullying (Olweus, 1993), but bullying has gained greater attention in the media and is now considered a significant problem in schools (Beran, in press).

Previous research has examined chronic school violence and various prevention and intervention efforts (Ahmed & Braithwaite, 2004; Batsche & Knoff, 1994; Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004; Seals & Young, 2003; Storch, Brassard, & Masia-Warner, 2003). Indeed, recent school shootings in the United States, Canada, and throughout the world have prompted concerns for students' safety (Seals & Young, 2003) and a renewed interest in related research.

The stability of bullying over time has been thoroughly investigated (Leff, Power, Manz, Costigan, & Nabors, 2001; Macklem, 2004; Olweus, 1978; 1993; Snyder et al., 2003). Students who are bullies at an early age tend to be bullies in later years and, similarly, students who are victims of bullying tend to be victims later in life (Olweus, 1993). There is a paucity of data regarding the enduring effects of victimization, making it difficult to judge the long-term consequences of the problem (Hanish & Guerra, 2002). Considering the stability of bullying, it is important to examine its correlates. For

example, if bullying is related to academic achievement, then it is possible that persistent bullying may impair achievement over the long term.

Children who are bullied are likely to experience significant serious physical, social, and emotional characteristics (Callaghan & Joseph, 1994; Hanish & Guerra, 2002; Nansel et al., 2001; Schwartz, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1998; Snyder et al., 2003). For example, victims may report significant health problems, while experiencing compromised safety and development (Snyder et al., 2003). Researchers have typically focused on the physical, social, or emotional effects experienced by victims, but less is known about the cognitive development and academic adjustment of bullied children, particularly in Canada (Batsche & Knoff, 1994; Ma, 2002; Nansel et al., 2001; Schwartz, Farver, Chang, & Lee-Shin, 2002; Woods & Wolke, 2004). A more complete understanding of children's experiences of bullying includes an examination of their academic achievement (Hanish & Guerra, 2002).

Bullying and achievement may be related in several ways. Bullying may have a deleterious effect on the victim's level of achievement. However, it is also possible that bullying may cause victims to immerse themselves in their studies, thereby increasing their achievement. Bullying may also affect the bully's level of achievement. That is, bullies may use their influential position to forcefully align themselves with high achieving class members. Through this alliance bullies may be able to garner assistance or threaten high achieving class members to complete the work for them, inherently increasing their level of achievement. Conversely, bullies may experience low levels of achievement due to less time spent on academic work and more time focused on bullying others. Thus, the exact relationship between bullying and achievement has yet to be

determined. The study reported here adds to the current research on bullying by determining its relationship with achievement.

The Nature of the Relationship Between Bullying and Achievement

The relationship between bullying and achievement may be related to many factors. For example, the role of parents in regards to their child's education may influence achievement and the incidence of bullying. Student conscientiousness may also influence achievement, which, in turn, may influence the child's propensity to bully or be bullied. In addition, bullying and achievement may be mediated by the student's enjoyment of school.

Parental involvement has been shown in some studies to predict children's achievement in school (Englund, Luckner, Whaley, & Egeland, 2004). However, some studies have shown mixed effects (Deslandes, Royer, Turcotte, & Bertrand, 1997; Fan, 2001; Singh et al., 1995; Sui-Chu & Willms, 1996), while others have shown no significant relationship between parental support and a child's academic achievement (Bobbett, French, Achilles, & Bobbett, 1995; Keith, Reimers, Fehrmann, Pottebaum, & Aubey, 1986; Okpala, Okpala, & Smith, 2001). In addition, some studies have only investigated junior or senior high students (Bobbett et al., 1995; Deslandes et al., 1997; Keith et al., 1986; Singh et al., 1995; Sui-Chu & Willms, 1996), so further studies investigating parental support and involvement at the elementary level are needed. Moreover, the findings are discrepant, which warrants further investigation.

Another factor related to bullying and achievement, namely student conscientiousness, was identified according to students' ability to listen and follow directions. Few studies have examined similar factors and related them to students'

overall level of achievement. Amenkhienan and Kogan (2004) examined academic activities and support services that influenced academic performance of university engineering students and determined that individual effort and involvement in school (including proactive work habits and completing homework on time) directly affected students' academic success and achievement. In other words, achievement was found to be directly proportional to the level of effort and participation the student placed into learning. However, these results may not generalize to elementary students. Hence, further investigation relating the effects of student conscientiousness on elementary students' academic achievement is warranted.

In addition to parental involvement and student conscientiousness, students' enjoyment of school may be related to bullying and achievement. Lightbody and Siann (1996) investigated students' perceived level of school enjoyment. They discovered that female students expressed a greater enjoyment of school than did male students, particularly in their enjoyment of friendships, teacher relationships, field trips, and lessons. On the other hand, male students enjoyed sports and clubs more than female students did. However, these researchers did not examine student achievement, so it is not known if student enjoyment of school is related to academic success. The current study investigated the link between school enjoyment, achievement, and bullying.

Although numerous studies on bullying have been conducted, this research is limited by several factors. The majority of studies have been conducted outside of Canada, which limits generalization due to cultural, social, demographic, and educational differences between nations (Boulton, Bucci, & Hawker, 1999). Additionally, many studies included small sample sizes (Coleman & Byrd, 2003) restricted to limited

geographical areas such as a singular school, community, or city (e.g., Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Coleman & Byrd, 2003; Graham & Juvonen, 1998; Hodges & Perry, 1999; Schwartz et al., 2002; Storch et al., 2003; Storch & Esposito, 2003; Tremblay, Masse, Perron, & LeBlanc, 1992). To address these limitations, it is useful to use a national longitudinal database (Willms, 2002). In Canada, the National Longitudinal Survey of Children and Youth (NLSCY) encompasses a vast geographical area with a large number of participants. These data were used in the present study.

Many studies on bullying employ multivariate designs (e.g., DeRosier, Kupersmidt, & Patterson, 1994; Kochenderfer & Ladd, 1996; Lagerspetz, Bjorkqvist, & Peltonen, 1988; Ma, 2002; Schwartz et al., 2002; Storch et al., 2003; Wilton, Craig, & Pepler, 2000), which allow researchers to examine the interrelationships among several variables, including more than one dependent variable. However, fewer studies employ structural equation modeling (SEM; Goodman, Stormshak, & Dishion, 2001; Juvonen, Nishina, & Graham, 2000; Tremblay et al., 1992), that allow the analysis of interactions, nonlinearities, correlated independent variables, measurement error, and multiple latent indicators each measured by multiple indicators. The advantage of employing SEM, as opposed to multiple regression for instance, is that it allows for the use of latent variables to reduce measurement error by having multiple indicators per construct. In addition, models can be presented as diagrams to communicate results. SEM also allows for model fit to be evaluated as a whole while including multiple dependent variables (Juvonen et al., 2000). Thus, this method will be employed in the present study.

In summary, the relationship between bullying and academic achievement was examined. It was expected that children who obtain high levels of achievement are less

likely to be bullied than children who obtain low levels of achievement. Additional factors that further specify this relationship were also included. Specifically, parent involvement in children's education, student enjoyment of school, and student conscientiousness were investigated in relation to levels of achievement and bullying. It is possible that children, whose parents are highly involved in their child's school, will experience high levels of achievement and low levels of bullying. Students who enjoy school and who are conscientious in their work will obtain a high level of achievement and be bullied infrequently.

Statement of the Problem

Based on the aforementioned rationale, the main objective of the current study was to examine the relationship between bullying and academic achievement. A structural equation model (latent variable path analysis: LVPA) examining achievement links with bullying was developed and tested. Specifically, it was proposed that parent support, student enjoyment, and conscientiousness would be closely related to overall school achievement, which, in turn, would be closely related to bullying. In other words, children most likely to be bullied are likely to have little parent support, experience little enjoyment in school, and not be conscientious in their work.

Chapter two contains a review of the pertinent research on bullying including its relationship with achievement. Chapter three outlines the method employed to perform the statistical analyses. A description of the national database used to form the sample and an explanation of the analytic procedures are provided. Chapter four presents the results of the analyses. Lastly, in chapter five I discuss the results in relation to previous

research and theoretical perspectives as well as in consideration of the limitations of the study.

CHAPTER TWO

Literature Review

This chapter includes a review of research that explains the relationship between bullying and academic achievement. I begin with a review of Olweus' early research on bullying and then I examine students' bullying behaviors according to various bully and victim roles. Research on achievement is then discussed, with an emphasis on Eccles' Expectancy-Value Theory and Achievement Related Choices Model. Factors, and especially bullying, related to academic achievement are reviewed. Following a review of gender and age differences in bullying and achievement, this chapter concludes with specific questions examined in this study.

Defining Bullying and Peer Victimization

Bullying has been investigated in schools by researchers in countries around the world for over 30 years, beginning in Scandinavia through the pioneering work of Olweus. Bullying was first labeled "mobbing," from the root word "mob" (meaning a large and anonymous group of people) by Olweus in 1972. Later, in 1978 Olweus published his landmark book *Aggression in the schools: Bullies and whipping boys* and began refining the definition. Considering that mobbing takes place by an individual as well as by a group, the term became known as "the situation in which a single individual harasses another and that in which a group is responsible for the harassment" (Olweus, 1978, p. 8). Distinctions have been made between types of mobs, "including the aggressive mob (the lynch mob), the panic-stricken mob (the flight mob), and mobs arising with the object of obtaining some definite thing, for example certain items of food when rationing is expected (the acquisitive mob)" (Olweus, 1978, p. 2).

Other definitions are more specific. In 1989, Roland defined bullying as "longstanding violence, physical or mental, conducted by an individual or group and directed against an individual who is not able to defend himself in the actual situation" (p. 143). Four years later, Olweus (1993) adapted his original "mobbing" definition to "[a] person is being bullied when he or she is exposed, repeatedly over time, to negative actions on the part of one or more other students" (p. 9). "Negative actions" are indicative of intentional attempts to injure or humiliate another by physical, verbal, or psychological means (Olweus, 1993). Additionally, Olweus denoted that bullying can occur without provocation and does not have to involve violence to be considered bullying.

Later, Smith and Sharp (1994) stated that bullying occurs when a student "says nasty and unpleasant things to him or her. It is also bullying when a student is hit, kicked, threatened, locked inside a room, sent a nasty note, and when no one ever talks to him" (p. 1). Solberg and Olweus (2003) stated bullying occurs:

> when other students say mean and hurtful things or make fun of him or her or call him or her mean and hurtful names; completely ignore or exclude him or her from their group of friends or leave him or her out of things on purpose; hit, kick, push, shove around, or threaten him or her; tell lies or spread false rumors about him or her or send mean notes and try to make other students dislike him or her and do other hurtful things like that. (p. 246)

Macklem (2004) provided a contextual definition of bullying:

> Bullying can be thought of as the interaction between the student and the contexts or systems of which the student is a part. A student's behavior does not occur in isolation, and seldom is the child the only variable in the occurrence of behavior.

> The school environment itself plays a role in both fostering and perpetuating bullying behaviors. (p. 25)

Macklem (2004) further specifies that bullying may begin with basic teasing, roughhousing, or wrestling and progresses to more harmful verbal and/or physical assaults. Once the bully has established power and knows the victim will not retaliate, bullying behaviors may escalate. In other words, bullying progresses from less serious to more serious incidents over time.

In sum, most of the aforementioned definitions of bullying encompass the following components: 1) an imbalance of power; 2) malicious intent; 3) harm directed at victims; 4) physical pain or humiliation; and 5) a sense of enjoyment (Batsche & Knoff, 1994; Boulton et al., 1999; Macklem, 2004; Nansel et al., 2001; Newman, 2003; Olweus, 1993; Rigby, 1998; Roland, 1989; Salmivalli, Lagerspetz, Bjorkqvist, Österman, & Kaukiainen, 1996; Smith & Brain, 2000; Solberg & Olweus, 2003). Power can be identified as authority, control, and influence over another person, and this power differential between the bully and victim may be physical or psychological in nature (Nansel et al., 2001).

Recent Definitions

More recently, the terms bullying and peer victimization have been used interchangeably in research to refer to repeated exposure to detrimental actions by one or more persons with the intent to inflict physical, social, verbal, or psychological pain (Batsche & Knoff, 1994; Coleman & Byrd, 2003; Ma, 2002; Macklem, 2004; Salmivalli et al., 1996; Storch et al., 2003; Storch & Esposito, 2003; Woods & Wolke, 2004). Although not clearly defined, victimization refers to "a form of peer abuse in which a

child is frequently the target of peer aggression" (Kochenderfer & Ladd, 1996, p. 1305). Goodman et al. (2001) refer to peer victims as those students who are habitually bullied, teased, and harassed at school. Also, Hawker and Boulton (2000) defined peer victimization as "the experience among children of being a target of the aggressive behavior of other children, who are not siblings and not necessarily age-mates" (p. 441). Consistent with the published research in this area, bullying and victimization will be used interchangeably in this paper.

Types of Bullying

Direct Bullying

Physical and verbal forms of bullying can be classified as *direct aggression* (Olweus, 1993; Rivers & Smith, 1994; Salmivalli et al., 1996) or *overt aggression* (Crick, 1995). Direct or overt aggression involves face-to-face contact between the bully and the victim. Physical bullying may include overt forms of aggression including hitting, punching, kicking, biting, holding, hostile gesturing, and scratching (Ma, 2002). Such direct or overt forms of aggression, whether physical or verbal, are instigated to garner power, status, or possessions. Strategies may also involve threatening to withdraw from a friendship (Espelage & Swearer, 2003). Direct or overt bullying most often occurs during classroom transition times and on the playground (Ojala & Nesdale, 2004).

Indirect Bullying

Rather than directing bullying behaviors at a victim, bullies may incite their peers to bully a victim. This indirect bullying is circuitous in nature as verbal assaults against a victim are shared among peers rather than directed at the victim. "[V]erbal bullying includes threatening, humiliating, degrading, teasing, name-calling, put-downs, sarcasm,

taunting, staring, sticking out the tongue, eye-rolling, silent treatment, manipulating friendship, and ostracizing" (Ma, 2002, p. 63). Verbal aggression may also include negative comments or intimidating phone calls to the victim (Macklem, 2004). E-mail messages and slam books are also examples of verbal victimization, although some researchers classify it as written aggression, including graffiti and note passing as well (Macklem, 2004). Indirect bullying occurs most often in school, as opposed to at home or on the way to or from school (Ma, 2002). Bullying most likely occurs more frequently at school than at home because it provides a social venue for bullies.

Social victimization.

Another form of indirect aggression is social victimization, which may include damaging another's reputation, social status, and/or self esteem by means of exclusion, manipulation, or rumors (Coleman & Byrd, 2003). Social victimization can be referred to as *indirect* (Olweus, 1993; Rivers & Smith, 1994; Salmivalli et al., 1996) or *covert* (Crick, 1995) when there is contact with a third-party (e.g., spreading rumors) as opposed to contact with a victim. It can also be referred to as psychological bullying because it involves both verbal and nonverbal behaviors that can make another student feel powerless and fearful (Macklem, 2004).

Other Forms of Bullying

Five other forms of bullying include psychological, sexual, and property bullying (Ma, 2002), *relational aggression* (Crick, 1995), and backhanded bullying (Macklem, 2004). Psychological bullying may involve rejecting, terrorizing, ignoring, isolating, and corrupting others (Fried & Fried, 1996). Sexual bullying involves one or more people who sexually harass the victim. It may include such behaviors as "grabbing, pulling,

brushing up against, leering, making inappropriate comments that are suggestive, spreading sexual rumors, making sexual jokes, referring to sexual orientation, graffiti, and other behaviors" (Macklem, 2004, p. 45). Male students are as likely to be sexually harassed as female students (Macklem, 2004). Sexual bullying may also include same-sex harassment, which involves references to homophobia, spreading rumors, and hazing (Macklem, 2004). Property bullying involves intentional theft and/or damage to the victim's property to cause suffering (Ma, 2002). Relational aggression, as defined by Crick (1995), is bullying elicited with the intent to harm or ruin a relationship. In other instances the relationship can be utilized to cause harm. An example of this type of aggression is threatening to exclude an individual from a social pursuit if he or she does not do as the bully desires (Espelage & Swearer, 2003). Primarily, relational aggression involves verbal bullying; however, threats to relationships made via physical assaults are possible (Espelage & Swearer, 2003). The final type of bullying is entitled *backhanded* bullying, referring to actions where kindness is used to deceive the victim, followed by illogical requests along with an offer of friendship that is designed to embarrass or ridicule the victim (Macklem, 2004).

Summary

In sum, bullying is a social action that occurs habitually over time involving a disparity in power between the bully and victim whether the disparity is existent or supposed. There exists malicious intent, with bullies enacting physical, emotional, psychological pain or humiliation on their victims, while enjoying the effects of the pain they inflict on their victims (Macklem, 2004; Nansel et al., 2001; Newman, 2003; Olweus, 1993; Rigby, 1998; Roland, 1989; Salmivalli et al., 1996; Smith & Brain, 2000;

Solberg & Olweus, 2003). Further, as time advances and the bullying progresses, the hierarchy and alliances formed by the bully become more established leading to continual harassment (Leff et al., 2001; Macklem, 2004; Olweus, 1978; Olweus, 1993; Snyder et al., 2003).

Participants in Bullying

Typically, there are two main participants involved in episodes of bullying: the perpetrator known as the bully and the target known as the victim. However, researchers have identified many other roles involved in bullying. Salmivalli et al. (1996) delineated six distinct bullying and victimization roles: victim, bully, reinforcer of the bully, assistant to the bully, defender of the victim, and the outsider. Additionally, some individuals can be both bullies and victims simultaneously (Macklem, 2004; Woods & Wolke, 2004). An explanation of each role is presented next.

Bullies

Olweus (1978) identified a bully as a "boy who fairly often oppresses or harasses somebody else; the target may be boys or girls, the harassment physical or mental" (p. 35). More recently, bullies (either male or female) have been identified as those individuals who start fights and disrupt others (Ahmed & Braithwaite, 2004) and are generally more aggressive than non-bullies or victims (Olweus, 1978; 1993). In general, bullies demonstrate elevated levels of conduct problems and tend to dislike school (Nansel et al., 2001).

Aggressive bullies.

Aggressive bullies (also known as active bullies) are the most common type of bully (Macklem, 2004). They are described as hostile and domineering, hot-tempered,

impulsive, easily infuriated, wanting their needs and desires met, having low frustration tolerance, and difficulty conforming to rules can cause them to garner an advantage by cheating (Macklem, 2004; Olweus, 1993). In addition, aggressive bullies exhibit a positive attitude towards violence (Macklem, 2004; Olweus, 1978; Olweus, 1993) and take pleasure in knowing they have hurt or upset others (Batsche & Knoff, 1994; Macklem, 2004). Aggressive bullies are oppositionally defiant and are often physically superior to their victims (Macklem, 2004; Olweus, 1993). They may also have more status in their peer groups than their victims do, and often victimize more than one student (Macklem, 2004).

Aggressive bullies initiate aggression towards their victim, alone or in groups, selecting victims they think will not retaliate (Macklem, 2004). The bully expects to gain attention and admiration from the bullying exchange, thereby establishing social dominance over the victim. In this way the bully is positively reinforced by peers for the bullying behavior (Macklem, 2004; Mahady Wilton et al., 2000).

Further, aggressive bullies may want to be in control (Macklem, 2004). When caught, bullies do not take responsibility for their behavior and may say they were provoked into bullying others (Macklem, 2004). They may even blame their bullying actions on the victim (Macklem, 2004) and show no empathy. These behaviors are likely maintained by bullies' difficulty recognizing provocation and other social contexts, creating non-aggressive solutions to problems, and selecting a non-aggressive response (Smith et al., 1999). Moreover, the aggressive nature of bullies is relatively stable over time (Leff et al., 2001; Macklem, 2004; Olweus, 1978; Olweus, 1993; Snyder et al., 2003).

In their relationships with their peers they are rarely the target of aggression from others, and are not harassed or teased by their peers more often than boys in general (Olweus, 1978). As such, their aggressive tendencies cannot be attributed to a defensive reaction to attacks from others. Although perhaps disliked by their victims, aggressive bullies experience average levels of popularity among their peers (Olweus, 1978) and view themselves in a positive light (Olweus, 1993). They usually have at least two or three friends who assist and appear to admire them (Olweus, 1993). Olweus (1978) found that bullies are relatively popular among their peers and are not isolated as a rule. It has been found that bullies are socially skilled and intelligent, avoiding getting caught and are able to manipulate others (Ma, 2002; Woods & Wolke, 2004). A study examining the social skills of bullies discovered that bullies have significantly more social intelligence than their victims possess (Kaukiainen et al., 1999). So, their actions cannot be attributed to peer rejection or low social skills.

Additionally, bullies do not exhibit low levels of self-esteem (Ma, 2002; Woods & Wolke, 2004), are not highly anxious (Olweus, 1978; 1993; Woods & Wolke, 2004), nor are they highly depressed (Woods & Wolke, 2004). In sum, the highly aggressive behavior of the bullies cannot be fully explained as a consequence of poor social skills, low self-esteem, anxiety, or depression (Ma, 2002; Olweus, 1978; 1993; Woods & Wolke, 2004).

Passive bullies.

Macklem (2004) noted that 18% of bullies do not initiate bullying themselves and are thereby considered passive. Rather, they join in when an aggressive bully is attacking

a victim, also encouraging or daring others to become involved. As such, these passive bullies are loyal to their aggressive counterparts (Macklem, 2004).

Passive bullies may be anxious, explosive when angered, exhibit low levels of self-esteem, and may experience relationship problems due to their position as a bully (Macklem, 2004). For instance, passive bullies may be rejected by peers, lack friendships, and feel lonely (Ahmed & Braithwaite, 2004; Macklem, 2004). Unlike their aggressive counterparts, passive bullies are dependent, insecure, and lack social status (Macklem, 2004).

Upbringing of a bully.

Bullies endure many disadvantages in their home life that may predispose them to victimizing others. Batsche and Knoff (1994) identified five aspects common to most bullies' lives at home. Bullies may have parents who use physical and authoritarian forms of discipline. Parents of bullies may also be hostile or rejecting, and provide little supervision. Parenting behaviors may also be inconsistent due to parents' poor problem-solving skills. Lastly, the parents of bullies are likely to teach their children to fight back when provoked.

Outcomes for bullies.

Bullies are likely to experience negative psycho-social outcomes. Indeed, bullying behavior may be an indication of antisocial behavior as there is a strong relation between habitual bullying and negative outcomes (such as poor academic achievement, lack of friendships, poor coping skills) for bullies (Leff et al., 2001; Macklem, 2004). Further, bullying behavior patterns are relatively stable, so early levels of aggression are a strong predictor of later aggression (Macklem, 2004). Bullying is also considered to be a sub-

form of a conduct disorder (Olweus, 1993). For instance, bullies reportedly partake in vandalism, smoking, drinking, and associating with the "wrong crowd" at an early age (Nansel et al., 2001; Olweus, 1993). Also, bullies experience poor academic achievement, high rates of school drop out, underemployment (working at a job below their skill level), and tend to need mental health services (DeRosier et al., 1994; Fried & Fried, 1996; Nansel et al., 2001). In terms of sexual relations, "bullying in childhood may be one of the precursors of violence in dating" (Macklem, 2004, p. 43). Macklem (2004) reported that bullies begin dating at earlier ages and are more aggressive in their dating relationships than are non-bullies. Children who bully in elementary and junior high school are also likely to sexually assault others in high school.

As adults, bullies are likely to be abusive towards their wives and enact more harsh punishment on their children (Fried & Fried, 1996; Leff et al., 2001). As a result, it is reasonable to expect that children who bully become adults who break rules and engage in aggression. Indeed, bullies are likely to have a criminal record later in life (DeRosier et al., 1994; Fried & Fried, 1996; Leff et al., 2001; Olweus, 1993). Although a bully may first exhibit mild aggressive behavior, it may escalate and lead to more serious offences such as gang membership, assaults, robberies and rape (Leff et al., 2001). Olweus (1993) reported that approximately 60% of boys who were identified as bullies in grades six through nine had at least one criminal conviction by age 24. Of that group, 35 to 40% had three or more convictions (Olweus, 1993). Another study found that by the age of thirty, 25% of the adults who had been identified as bullies when they were children, had attained a criminal record (when only 5% of adults who were not childhood bullies had attained a criminal record) (Fried & Fried, 1996). Also, Macklem (2004)

noted that bullies are more likely to break the law by the time they reach adolescence than non-bullies. Olweus (1993) found that former school bullies were four times more likely to engage in serious, recidivist criminal acts later in their adult life. In sum, there is evidence that early schoolyard bullying is predictive of subsequent criminal involvement.

Victims

Olweus (1978) initially described victims as "whipping boys" according to their habitual exposure to aggression by their peers. For instance, other students may tease or make fun of the whipping boy, and may fight or be rough with him. Olweus (1978) identified two different types of whipping boys: passive and provocative. The passive whipping boys constitute the vast majority of victims and are characterized as anxious, unpopular, and insecure (Olweus, 1978). In contrast, some victims are described as provocative, whereby they irritate others, create tension, are restless, hot-tempered, and fight back when attacked (Olweus, 1978). More recently, whipping boys are referred to as victims, and the term applies to both male and female students.

Aggressive victims.

Aggressive victims are synonymous with the provocative victim that Olweus (1978) identified. They "provoke their peers and respond to threats or attacks with reactive aggression" (Kochenderfer-Ladd, 2003, p. 18). These aggressive victims are described as irritable, over active, argumentative, disruptive, and hurtful towards others (Coleman & Byrd, 2003; Olweus, 1978; Schwartz, 2000). Further, aggressive victims are identified as provocative due to an active antagonization of the bully, even resorting to retaliation at times (Mahady Wilton et al., 2000). Moreover, they tend to overreact, tease

with anger, and persist in attempting to join peer groups where they are not welcome (Mahady Wilton et al., 2000).

Rigby (2001) identified several possible reactions aggressive victims may have to bullying including: perceiving a challenge, escaping the situation, fighting back, acting calm and relaxed towards the bully, garnering help or assistance from others to fend off the bully, and distracting the bully in an attempt to thwart off the attack. Although aggressive victims may resist the bully, they are usually unsuccessful (Mahady Wilton et al., 2000; Rigby, 2001). Hanish and Guerra (2004) described these aggressive victims as having the most disturbed functioning as compared to bullies, passive victims, and bystanders and note that these aggressive victims "are more likely to have emotional, behavioral, social, academic, and family problems" (p. 18). Aggressive victims comprise only about 6% of victims within American, European, and Australian studies, which is lower than the prevalence for passive victims (15%) and bullies (9%). Other researchers have reported similar prevalence rates (Coleman & Byrd, 2003; Newman, 2003; Schwartz, 2000). However, Hanish and Guerra (2004) referenced other studies in which aggressive victims were found to outnumber passive victims, bullies, or both. This difference may be due to sample characteristics, measurement techniques, and classification stringency.

A typical profile of both passive and aggressive victims has emerged in the research that consists of particular social, academic, internalizing, externalizing, and physical characteristics of victims. Additional adjustment problems have been identified, as well as characteristics of victims that may provoke or reinforce an attack. The

situations in which victims cannot control and may trigger an attack have also been described. This profile is discussed next.

Passive victims.

In addition to aggressive victims, passive victims have been identified (Coleman & Byrd, 2003; Hanish & Guerra, 2004; Kochenderfer-Ladd, 2003; Mahady Wilton et al., 2000; Rigby, 1998; Rigby, 2001). Hanish and Guerra's (2004) classification of passive victims closely resembles the aforementioned general description of victims in that they are weak and subservient to the demands of the bully. Coleman and Byrd (2003) identified passive victims as those students who are inclined to be inhibited, submissive, nonassertive, and withdrawn. They may also be anxious, sensitive, insecure, and cautious (Macklem, 2004; Mahady Wilton et al., 2000). These victims engage in low levels of conflict (e.g., they are submissive and shy) and rarely exhibit aggression; rather, passive victims do not interact aggressively (e.g., retaliate) and are not able to use conflict resolution skills to remove themselves from an adverse situation.

Social issues.

Overall, victims experience many relational problems (Snyder et al., 2003). They may be disliked and belong to rejected social groups (Ahmed & Braithwaite, 2004; Graham & Juvonen, 1998; Hanish & Guerra, 2002; Hodges & Perry, 1999; Mahady Wilton et al., 2000; Olweus, 1978; Salmivalli et al., 1996). As such, victims may have few (if any) friends leading to feelings of loneliness and low self-esteem, which may trigger repeated victimization due to exposed vulnerabilities (Ahmed & Braithwaite, 2004; Coleman & Byrd, 2003; Egan & Perry, 1998; Graham & Juvonen, 1998; Hanish & Guerra, 2002; Hawker & Boulton, 2000; Hodges & Perry, 1999; Juvonen et al., 2000;

Leff et al., 1999; Ma, 2002; Nansel et al., 2001; Olweus, 1978; Olweus, 1993; Pellegrini, 2002; Salmivalli et al., 1996; Schwartz, 2000; Schwartz et al., 1998; Snyder et al., 2003). Egan and Perry (1998) stated that victims lack basic social skills including friendliness, cooperativeness, prosocial skills, and sense of humor. Additionally, victims fear their peers will view them negatively, leading to social distress and avoidance (Ma, 2002; Schwartz et al., 1998). Finally, victims relate more readily to adults rather than their peers, as they experience difficulty asserting themselves in their peer groups (Olweus, 1993). However, a heavy reliance on adults lowers the victim's level of independence potentially making them more vulnerable to being bullied (Nansel et al., 2001).

Academic issues.

Due to their unpopularity victims may feel abandoned at school, tend not to enjoy school, may begin avoiding school, and perform poorly on academic tasks (Ahmed & Braithwaite, 2004; Graham & Juvonen, 1998; Hodges & Perry, 1999; Leff et al., 1999; Olweus, 1993, Snyder et al., 2003). Schwartz (2002) found aggressive victims to be hyperactive and off-task in school. Further, victims may believe that their teachers will not support them, so victims may not feel safe at school (Ahmed & Braithwaite, 2004). As a result, they often do not report the bullying. Indeed, reporting rates range from 35% to 55% (Olweus, 1993). Whitney and Smith (1993) reported similar findings. Rivers and Smith (1994) speculated that reporting rates are low because victims fear that the teacher or adult may not believe them, particularly when they are indirectly bullied.

Physical characteristics and associated behavior problems.

Additional characteristics of victims may increase their risk of being bullied. Physically, victims are often smaller than their attackers, and so victims may have

difficulty defending themselves (Hodges & Perry, 1999; Salmivalli & Voeten, 2004; Solberg & Olweus, 2003). Victims also exhibit behavioral, social, academic, and/or emotional difficulties (Hanish & Guerra, 2002; Schwartz et al., 2002). For instance, they may act out or exhibit declining academic performance (Hanish & Guerra, 2002). In addition, some victims may experience severe adjustment problems such as conduct disorders (Snyder et al., 2003) or psychosocial maladjustment (Nansel et al., 2001; Salmivalli & Voeten, 2004). Together with their physical characteristics, these personal qualities may contribute to victims' maltreatment. That is, their internalizing and externalizing behaviors may provoke or reinforce victimization (Hodges & Perry, 1999). Moreover, internalizing behaviors may interfere with victims' abilities to defend and assert themselves, thereby reinforcing attacks (Hodges & Perry, 1999). Also, externalizing behaviors may irritate and instigate an attack. Thus, these characteristics may initiate, maintain, and/or exacerbate bullying.

Symptoms of victimization.

There are several indications that a child may be a victim of bullying. Olweus (1993) identified two types of signs: primary and secondary signs. Primary signs of victimization are more overt, obvious, and can be seen or noticed by others. However, secondary signs of victimization are more covert, less obvious, and unlikely to be noticed (Olweus, 1993). Some examples of primary signs of victimization include: damaged or lost belongings, and injuries such as cuts, bruises, and scratches (Olweus, 1993; Rigby, 2001). Secondary indications include psychosomatic symptoms such as non-specific aches and pains, fear of traveling to school, unwillingness to attend school, irritability,

anxiousness, suicidal ideation, and having few friends (Ma, 2002; Olweus, 1993; Rigby, 2001).

Moreover, declining school grades have been reported (Ma, 2002; Olweus, 1978; Rigby, 2001). For example, victims may obtain low grades and be at risk for dropping out (DeRosier et al., 1994; Juvonen et al., 2000; Macklem, 2004; Olweus, 1978; Schwartz, 2000; Wentzel & Asher, 1995). Victims who exhibit poor academic performance may continue to be frequent targets of bullying. However, in schools with zero tolerance for bullying, rates of victimization decreased while achievement levels rose (Woods & Wolke, 2004). Thus, achievement may be related to bullying.

In addition, symptoms of victimization may be exhibited at home (Olweus, 1993). Victims may not bring friends home to socialize with or attend outings with peers. They may experience restless sleeps with possible nightmares, and request extra money or other material objects in an attempt to meet the bully's demands (Olweus, 1993).

Outcomes for victims.

The effects of victimization can be devastating on victims. Short-term effects may include increased levels of anxiety, tension, and fear. Lowered levels of risk taking are also a consequence of bullying, in addition to low levels of self-esteem and high levels of depression (Macklem, 2004, Orpinas, Home, & Staniszeski, 2003). Immediately after a student has been labeled a victim, his/her social status drops (Macklem, 2004). Also, since children tend to befriend children who are similar to them, experiencing victimization may lead children to narrow their circle of friends to other children who are also victimized and share their difficulties (Hodges & Perry, 1999). As a result, it may be

difficult for victims to maintain or make friends who are not victims, thereby reducing the bullying.

Victimization can also have long-term effects. A study of 330 American children in grades three and four by Schwartz et al. (1998) determined that victimization in early elementary school was a significant predictor of behavior problems two years later. "Early victimization predicts increased social problems, as rated by both mothers and teachers, and increased externalizing and attention problems, as rated by mothers" (Schwartz et al., 1998, p. 97). As such, research suggests that there are devastating effects of being victimized at a young age.

Victims may be absent more from school, have difficulty asserting themselves, and experience increased general health ailments (Macklem, 2004). Enuresis has also been reported for victims of bullying (Orpinas et al., 2003). Additionally, if victims do not receive assertiveness training, they may not learn to defend themselves when attacked by peers (Smith et al., 1999).

In summary, there are many possible negative effects of bullying, which may be severe and stable over time. For example, Nansel et al. (2001) reported that students who were victimized as children exhibited low levels of self-esteem and elevated levels of depression at the age of 23, although they were long since removed from the bullying situation. "Those who have been bullied may view such treatment as evidence that they are inadequate and worthless and may internalize these perceptions" (Nansel et al., 2001, p. 2099). As such, the effects of bullying are likely to last into adulthood.

Comparisons between Bullies and Victims

Although characteristics of bullies and victims are distinct, there is some overlap between the two groups. Olweus (1978; 1993) reported that bullies have at least two or three friends and exhibit average levels of popularity. However, he also noted that bullies are disliked by their victims. In addition, the two or three friends bullies do have may all be unpopular, so in essence, the bully is popular only among unpopular peers, and still may belong to rejected social groups (as do victims) (Ahmed & Braithwaite, 2004; Ojala & Nesdale, 2004). In fact, "[s]tudies using peer nominations consistently reveal that sociometrically rejected children receive more bully and more victim nominations than any other status group" (Ojala & Nesdale, 2004, p. 22). Since bullies and victims both belong to rejected groups, they have the greatest need and desire to increase their status level. As such, rejected students may bully other rejected groups in an attempt to garner acceptance by their peers (Ojala & Nesdale, 2004). Additionally, both bullies and victims may dislike school and do not feel that bullying is controlled within the school setting (Ahmed & Braithwaite, 2004). Bullies and victims report having fewer close friends leading to feelings of loneliness (Ahmed & Braithwaite, 2004). Further to the social adjustment problems that bullies and victims share, the two groups also reportedly experience problems in the family (Ahmed & Braithwaite, 2004).

Other Roles Involved in Victimization

In addition to the primary roles of bully and victim, children may participate as reinforcers of the bully, assistants to the bully, defenders of the victim, and outsiders. Since children form social groups, they may imitate and reinforce bullying, and, thus,

participate as accomplices (Ojala & Nesdale, 2004). In addition, bullies and victims will play certain roles that influence bullying.

Reinforcer to the bully.

Students who assist or join bullies are known as reinforcers (Ojala & Nesdale, 2004). They may encourage bullying behavior by laughing or cheering, which encourages, or positively reinforces the bully. In childhood and adolescence as many as 20 – 30% of students encourage the bully, by acting as assistants or reinforcers (Salmivalli & Voeten, 2004). Salmivalli et al. (1996) found that the majority of reinforcers were male. Reinforcers may also instigate incidents, support them, or join in, and, in turn, model aggressive interactions for others (Macklem, 2004).

Defender of the victim.

Defenders of the victim may intervene in a bullying situation to assist the victim and stop the bullying (Salmivalli et al., 1996). By helping the victim, defenders receive the highest social status rating of any participant in bullying (Salmivalli et al., 1996). One reason for this status is that defending the victim is appreciated by others. Another reason relates to high-status children not being afraid of being victimized themselves, even if they support the victim. High status enables the defending of the victim (Salmivalli et al., 1996).

Outsiders or bystanders.

The role of the outsider, or bystander, is critical in maintaining bullying (Salmivalli et al., 1996). Outsiders (or bystanders) are those individuals (usually female) who watch the bullying incident but do not join in, or who happened to be with the bully or the victim at the time of the incident (Macklem, 2004). Peer victimization occurs in

school classes or on the playground where many outsiders are present, but most students do nothing to intervene or support the victim (Salmivalli & Voeten, 2004). Most children and adolescents believe bullying is wrong and have intentions of supporting the victim as opposed to the bully (Salmivalli & Voeten, 2004). In fact, the defenselessness of the victim implies an obligation to assist and intervene (Smith & Brain, 2000). However, outsiders may pretend they do not see the bullying, which may be interpreted by the bullies as a sign of approval for their behavior (Graham & Juvonen, 1998; Salmivalli et al., 1996).

For instance, Ortega and Mora-Merchan (as cited in Salmivalli & Voeten, 2004) found that 44% of students do not act out against bullying even though they feel it would be the best course of action to take. Whitney and Smith (1993) reported similar findings where about half of the junior high/middle school students stated they would try to assist the victim, whereas only about a third of secondary school students would assist the victim. Bystanders who watch but do not assist the victim often feel guilty for not helping and not being able to control the situation. Others worry they may lose their position in the peer group and be stigmatized by association if they assist a victim (Buhs & Ladd, 2001; Macklem, 2004). Bystanders also fear that if they assist a victim, they may be targeted with the same form of victimization (Buhs & Ladd, 2001). As a result, bullying continues despite having many outsiders present who could step in to assist the victim. More disconcerting is the fact that outsiders occasionally step in to assist the bully. Whitney and Smith (1993) found that about one-fifth of students would join in if they witnessed a bully victimizing a student. Conversely, there are a few defenders (about

20%) who will support the victim (Salmivalli & Voeten, 2004). Thus, outsiders are indirectly involved in the bullying interaction (Macklem, 2004).

Bully-victims.

Some students may bully other children and be victimized at other times (Woods & Wolke, 2004). As such, *bully/victims* have also been identified (Macklem, 2004; Woods & Wolke, 2004). In contrast to passive victims who are submissive and nonassertive (Coleman & Byrd, 2003), bully-victims are aggressive, provocative, and emotional, often losing their tempers easily and not thinking about the consequences of their actions (Pellegrini, 2002). Socially, bully-victims may not read social signals and cues given by others appropriately and experience difficulty responding correctly. They are impulsive, confrontational, and challenging. As a result, they are often involved in behavior incidents on the playground (Macklem, 2004).

The main difference between a bully and a bully-victim is that the bully-victim's aggression is in reaction to something they experienced, rather than being proactive (Pellegrini, 2002). So, the bully-victim appears to incite aggression as a means of receiving attention (Macklem, 2004). These students have the ability to control when, where, and how they are victimized. They can create problems and exude a persona that they enjoy the recognition they receive when bullied and would rather receive this type of recognition over nothing (Macklem, 2004). In other words, they are "attention seekers."

Bully-victims view their school climate negatively. In fact, in addition to believing that their peers bully them, bully-victims may believe that they are bullied by teachers and other adults within the school (Macklem, 2004). They often have the perception that no one is on their side. Additionally, bully-victims personalize situations

and perceive others' comments as put-downs even though they may not have been intended that way (Macklem, 2004). In sum, bully-victims often talk or move before they think, which can aggravate their peers. They are quick to anger and retaliate, and, hence, are less liked than many of their peers (Macklem, 2004).

Summary

There are many roles implicated in the complex social interactions of bullying. The two primary roles are that of the bully and the victim; however, other roles such as the reinforcer of the bully, assistant of the bully, defender of the victim, and outsider have been identified. Additionally, some individuals can be both bullies and victims simultaneously. In total, all children participate in some capacity, whether directly or indirectly.

Prevalence of Bullying

"Bullying seems to be a universal phenomenon, taking place in most, if not all, school classes" (Salmivalli & Voeten, 2004, p. 246). Researchers in countries such as Norway, England, Italy, Canada, Japan, the United States, Australia, and elsewhere have all recognized and reported on the problem of bullying (Espelage & Swearer, 2003; Olweus, 1993). In addition to occurring in many countries, bullying is experienced by many children (Kochenderfer & Ladd, 1996). It is difficult to precisely determine the prevalence rate because definitions of bullying and measures utilized to determine rates of bullying vary considerably across studies (Espelage & Swearer, 2003).

To accurately measure the prevalence of bullying incidents in school, researchers must examine the proportion or percentage of students who have been exposed to bullying/victimizing behavior by other students with a defined frequency within a

specified time period (Solberg & Olweus, 2003). As such, prevalence rates refer to the frequency with which students are exposed to specified bullying behavior within a specified amount of time.

Prevalence Rates in General

Research suggests that the majority of children have been seriously affected by bullying at some point in their lives. The prevalence rate of children being habitually and persistently bullied is typically reported to be between 8 to 10% of the school population (Coleman & Byrd, 2004; Dill et al., 2004; Graham & Juvonen, 1998; Hanish & Guerra, 2002; Kochenderfer & Ladd, 1996; Ojala & Nesdale, 2004; Schwartz et al., 2002). Nansel et al. (2001) reported that 13% of sixth graders were being bullied at least once a week. Storch and Esposito (2003) reported prevalence rates of bullying in children and adolescents to be around 20%. Juvonen and Graham (2000) reported that rates of students experiencing any form of peer hostility (e.g., taunting, threats, social isolation, and humiliation) are between 40% to 80%. Nansel et al. (2002) reported that the prevalence of bullying is as high as 70% in some countries. Reporting even higher rates, Orpinas et al. (2003) determined that 9 out of 10 elementary children in their study indicated that they had been victimized in some way. Reported rates of bullying may vary due to differences in definitions, reporting methods, age groups examined, cultural acceptance, and country of origin. What is clear is that bullying is a far-reaching phenomenon.

Bullying is occurring at different rates throughout the world (Espelage & Swearer, 2003; Ma, 2002; Olweus, 1993). In Norwegian primary and junior high schools, the prevalence of students involved in bullying is 15%, which equates to approximately 84,000 students (Olweus, 1993). Hoover, Oliver, and Hazler (1992) examined students

aged 12 through 18 from the Midwestern United States and found that 75% were bullied at least one time in their lives while 14% of male and female students had suffered damage from the victimization. Juvonen and Graham (as cited in Newman, 2003) also noted that these prevalence rates are increasing in the United States.

Glover, Gough, Johnson, and Cartwright (2000) examined British students ages 11 through 16 and found 75% had experienced some form of bullying while 7% had been victimized repeatedly. Macklem (2004) reported that a study involving 6,700 students in Sheffield, England revealed that 27% of elementary students were victims of bullying either 'sometimes' or 'frequently'. Also, in the same study 10% of secondary students were victims of bullying either 'sometimes' or 'frequently' (Macklem, 2004).

Pepler and colleagues in Canada have reported varying rates. Charach, Pepler, and Ziegler (1995) indicated that 33% of students aged 4 through 14 were involved in peer victimization. Craig and Pepler (1997) reported a slightly lower prevalence rate of 20% of Canadian students reporting bullying, due to investigating a larger age range of students.

In Australia, Slee (1994) reported that 14% of elementary and secondary students were bullied at least once a week or more. In New Zealand, bullying appears to be a significant problem. Macklem (2004) reported that 58% of all secondary students were victims of bullying and 44% had perpetrated the bullying themselves. As such, bullying is a major social concern in most developed countries (Ma, 2002).

Gender differences.

In addition to varying by country, prevalence rates of bullying vary according to other factors. More male students are bullied and bully others than female students

(Batsche & Knoff, 1994; Bjorkqvist et al., 1992; Goodman et al., 2001; Lagerspetz et al., 1988; Ma, 2002; Macklem, 2004; Nansel et al., 2001; Ojala & Nesdale, 2004; Olweus, 1993; Rivers & Smith, 1994; Verkuyten & Thus, 2002). Also, victims report that male students commit 65% of the bullying, while female students commit 15%, and both male and female students commit 19% (Batsche & Knoff, 1994).

Male students also reportedly exert more physical strength during bullying episodes than do female students (Hoover & Olsen, 2001). Among boys, those who exhibit atypical gender-related behavior (e.g., playing with dolls or engaging in typical female activities) were at heightened risk for being bullied.

A reasonable explanation as to why male students bully more frequently than female students is that male students attempt to establish their dominance in the social group. This aggression is accepted, and in cases expected. So, male students may engage in roughhousing to maintain their status in the peer group, and by doing so test the limits of bullying behavior (Salmivalli et al., 1996). This theory is derived from an ethology framework whereby stronger and more dominant individuals aggress towards weaker ones, thereby ensuring the survival of its species (Hawker & Boulton, 2001). In contrast, female bullies are more likely to engage in verbal and emotional bullying as opposed to physical or sexual harassment (Fried & Fried, 1996; Nansel et al., 2001). Female bullies are more likely to engage in verbal or emotional bullying because girls form intimate bonds with one another by talking and connecting emotionally. Thus, it is particularly hurtful when female bullies engage in verbal and emotional victimization. Female students at the greatest risk for being bullied are either more or less physically attractive than other female students (Hoover & Olsen, 2001). Additionally, Fried and Fried (1996)

discussed a study conducted by the American Association of University Women who reported that 85% of female (and 76% of male) students had been sexually harassed, with the majority of the harassment conducted by people of a similar age.

Bullying rates also vary according to the type and location of bullying behavior. Seals and Young (2003) determined that verbal name-calling was the most prevalent type of bullying (however, their study examined only seventh and eighth graders). Physical bullying was the second most prevalent form of bullying reported. Location and situation are also important factors to consider when estimating prevalence rates. A large majority of bullying occurs at school as opposed to on the way to and from school (Ma, 2002; Macklem, 2004; Olweus, 1993; Rigby, 1998). In fact, twice as many elementary students and three times as many junior high students report being bullied at school compared to on the way to and from school (Olweus, 1993). Also, bullying most often occurs on the playground, followed by the lunchroom, hallways, and bathrooms (Leff et al., 2001; Macklem, 2004; Rivers & Smith, 1994). Rigby (1998), for example, found that more than 90% of students witness bullying at lunchtime. Bullying, thus, occurs most frequently in locations where there is less teacher supervision (Macklem, 2004).

Summary

Bullying is a universal phenomenon with approximate prevalence rates of 10% (Coleman & Byrd, 2004; Dill et al., 2004; Graham & Juvonen, 1998; Hanish & Guerra, 2002; Kochenderfer & Ladd, 1996; Schwartz et al., 2002). The majority of bullying is committed by individuals who are male against victims who are also male (Goodman et al., 2001; Hoover & Olsen, 2001; Ma, 2002; Macklem, 2004; Nansel et al., 2001; Ojala & Nesdale, 2004; Olweus, 1993; Verkuyten & Thus, 2002). Verbal and physical types of

bullying are most often reported by victims (Seals & Young, 2003) and the majority of bullying occurs in less supervised areas of the school (Ma, 2002; Macklem, 2004; Olweus, 1993; Rigby, 1998). To better understand the phenomenon of bullying, it is important to examine factors related to it. One correlate of bullying that has been identified in the research is academic achievement, which is discussed next.

Achievement

There is considerable variability in the definition of achievement in the literature. The following section includes a critical examination of the definition of achievement, followed by Eccles' Expectancy-Value Theory and the related Model of Achievement Related Choices.

Numerous researchers have examined academic achievement, although its definition is not consistent. For example, Ebel and Frisbie (1986) defined achievement as a student's understanding of particular information and their proficiency with specific skills. Also, Seo (2001) described academic achievement in relation to an individual's competence beliefs, task values, task goal orientation, and learning strategies. Conversely, Seo (2001) found achievement is not related to goal orientation or learning strategies.

One approach to defining achievement is to review the content of tests that purportedly measure achievement. Wilson (1989), for example, noted that achievement tests measure the following items: 1) a student's level of learning from instruction; 2) a student's strengths and weaknesses in curricular areas; 3) a student's readiness for instruction; and 4) performance of basic skills. Achievement may, thus, encompass an individual's performance in school subjects, readiness to be taught, and basic skill level.

A variety of achievement tests have been developed. Hoge, Smit, and Hanson (1990) suggest using grades or standardized test scores to measure achievement. Several studies employ standardized achievement scores to measure achievement (e.g., DeRosier et al., 1994; Dunifon & Kowaleski-Jones 2003; Gardner, Ritblatt, & Beatty, 2000; Kochenderfer & Ladd, 1996; Lynch, 2002; McCall, Beach, & Lau, 2000; Muthen & Siek-toon, 1998; Okpala et al., 2001; Pajares, Miller, & Johnson, 1999; Woods & Wolke, 2004; Worobey & Worobey, 1999). Achievement tests are based on the student's performance (e.g., score) on the test (Woods & Wolke, 2004) whereas teacher ratings are based on someone's perceptions (typically the teacher's) of the student's school performance (e.g., Englund et al., 2004; Nansel et al., 2001; Pajares et al., 1999; Schwartz, 2000; Woods & Wolke, 2004). Achievement can also be defined and identified by grade point averages across subject areas as utilized by Wentzel and Caldwell (1997).

Another widely accepted definition of achievement incorporates expectancy and task value (Pintrich & Schunk, 1996). Expectancy answers the question, "Am I able to do this task?" It involves beliefs about personal competence and effectiveness. Task value answers the question, "Why should I complete this task?" It is based on a person's cognitive beliefs, goals, values, and interests. The Expectancy-Value theory (Eccles et al., 1983) explains task value, expectancy and related concepts in terms of achievement. It will be examined in detail below.

The Expectancy-Value Theory

The Expectancy-Value theory (Eccles et al., 1983) and the related Model of Achievement Related Choices (Eccles, 1994) provide comprehensive definitions of achievement. Accordingly, achievement involves the culture, socialization, and the

environmental "fit" of schools for students. In school, students progress into wider social contexts from their homes that influence their cognition, behavior, and socioemotional development (Eccles, Roeser, Wigfield, & Freedman-Doan, 1999). Schools themselves initiate new life experiences by encouraging the development of intellectual and interpersonal competencies as well as social roles where status is dependent on competence and performance. Students appraise their academic and social competence and these feelings of competence (particularly in terms of academic work) will likely protect them against later problem behaviors. Conversely, feelings of incompetence and frustration may result in a negative pattern of adaptation towards school (Eccles et al., 1999). Thus, academic success is dependent on developing a positive view of one's level of competence and a positive orientation to learning.

The Expectancy-Value theory (Eccles et al., 1983) proposes that expectancies and values both influence achievement, persistence, and task choice. Also, expectancies and values influence task-specific beliefs such as perceptions of the difficulty of a task, personal goals, and self-schema. These social cognition factors are influenced by the individual's interpretations of previous achievement results, others' attitudes and expectations for them, and their memories of or affective expectations about similar tasks (Eccles et al., 1983; Eccles, Wigfield, & Schiefele, 1998). Task perceptions and interpretations of past outcomes can be influenced by social behaviors and beliefs, by the individual's own histories of success and failures, and by the broader cultural milieu and historical events. Perceived usefulness of a task will also influence achievement whereby the higher the perceived value of the task, the higher the level of achievement attained (Parjares et al., 1999).

Self-efficacy involves people's beliefs about their capabilities to generate desired levels of performance that influences events that affects their life (Bandura, 1994). People with high levels of self-efficacy approach difficult tasks with an intrinsic desire to learn, while maintaining task commitment. They recover quickly from setbacks, while attributing failure to deficient effort, knowledge, or skills that can be acquired. Conversely, people with low levels of self-efficacy view challenging tasks as threatening or unmanageable. Their aspirations and task commitment are low, and they concentrate on personal inadequacies, barriers to success, and unfavorable outcomes. Therefore, individuals with low self-efficacy give up quickly and often experience lower levels of achievement and higher levels of stress and depression (Bandura, 1994). According to Expectancy-Value theory, self-efficacy judgments help to determine the tasks individuals engage in (Parjares et al., 1999) and their judgment of the value of the activities. In other words, individuals who expect to be successful in a particular task tend to value and select those tasks.

The Expectancy-Value theory purports that there are two types of beliefs: beliefs in things and beliefs about things. Beliefs about abilities are envisioned as broad beliefs about competence in a given domain, in contrast to one's expectancies for success on a specific upcoming task. So, Eccles (1983; 1994) defined *expectancies for success* as "children's beliefs about how well they would do on either immediate or future tasks" and *beliefs about ability* as "children's evaluations of their more general level competence in different areas" (Eccles et al., 1999, p. 289). Research has shown a link among efficacy expectations, beliefs, and achievement. For instance, researchers have

found that student's confidence (e.g., in writing skills) positively influences achievement (Parjares et al., 1999).

Choices are also pertinent in the Expectancy-Value theory:

> Choices are assumed to be influenced by both negative and positive task characteristics, and all choices are assumed to have costs associated with them precisely because one choice often eliminates other options. Consequently, the relative value and probability of success of various options are key influences on choice, particularly for achievement-related choices related to which courses to take, what careers to seek, and what avocational/recreational activities to pursue. (Eccles et al., 1998, p. 1025)

According to the Model of Achievement Related Choices (Eccles, 1994) there are ten inter-related characteristics of achievement summarized here: 1) the cultural milieu, 2) socializer beliefs and behaviors, 3) individual aptitudes, temperaments, and talents, 4) individual's previous achievement-related experiences, 5) individual perceptions of socializer beliefs, expectations and attitudes, gender roles, and activity stereotypes, 6) individual interpretations of experience, 7) individual goals and general self schemata, 8) individual expectations of success, 9) individual affective memories, and 10) subjective task value (Eccles, 1994). The Model of Achievement Related Choices examines these expectancy factors in relation to school, age, and gender factors. In addition, performance and persistence on a task will also influence achievement.

More specifically, in terms of the cultural milieu, gender and social role stereotypes may influence achievement. For instance, schemas regarding the appropriate roles of men and women, ideal images of the self, and the social scripts regarding

"proper" behavior in certain situations will influence one's expectancies for success, and, hence, influence academic achievement. Additionally, short- and long-term goals, self-concepts of one's abilities and competencies, and perceptions of task demands may influence achievement. For example, if a student perceives the task to be too difficult and the task does not fit into a goal the student has, achievement on the task will likely be low. In terms of subjective task value, incentive, attainment value, utility value, and cost will all help to influence achievement. "Eccles' research supports the conclusion that social and attitudinal factors have a greater influence on junior and senior high school students' grades than aptitude" (Wolfe, 2004, p. 17). Thus, factors (such as bullying) may influence (and be influenced by) achievement.

Factors Influencing Achievement

Several factors may influence the level of academic success a student experiences. Three of these factors may include parent support of their child's education, student conscientiousness, and the student's enjoyment of school. These factors are discussed next.

Parental support.

The level of parental support and involvement in a child's education may impact the level of academic success the child experiences. Englund et al. (2004) found that parental involvement in education significantly predicts children's achievement in school. Parental involvement may occur at home or at school, with each moderately but significantly increasing the child's academic success (Christenson, Rounds, & Gorney, 1992; Englund et al., 2004; Fehrmann, Keith, & Reimers, 1987; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Keith, Keith, Quirk, Cohen-Rosenthal, & Franzese, 1996;

Keith et al., 1998; Miedel & Reynolds, 1999; Shaver & Walls, 1998; Stevenson & Baker, 1987). Other studies refute these findings, perhaps because parents are involved indirectly in their child's learning and the students themselves have a more direct, and influential impact on achievement (Bobbett et al., 1995; Keith et al., 1986; Okpala et al., 2001). Further, some studies have only explored parental involvement on junior or senior high student achievement (Bobbett et al., 1995; Deslandes et al., 1997; Keith et al., 1986; Singh et al., 1995; Sui-Chu & Willms, 1996), so further studies investigating parental support and involvement at the elementary level are needed.

Additionally, the effects that parental involvement may have on other factors related to achievement such as student conscientiousness, student enjoyment of school, and levels of bullying have elicited few studies. This study examined the degree to which parental involvement was directly or indirectly related to achievement and bullying to obtain a more complete picture of the influence parents may have on their child's education.

Student conscientiousness.

Student conscientiousness may also be related to academic achievement. Factors such as listening in class and following directions are examples of student conscientiousness (Statistics Canada, 1999). Individual student effort and involvement in their studies has been linked to increases in student performance (Amenkhienan & Kogan, 2004). However, Amenkhienan and Kogan (2004) surveyed university engineering students and so the results may not generalize to elementary students. Hence, further investigation relating student conscientiousness to elementary students' academic

achievement is needed. In the present study, the precise relationship between student conscientiousness, achievement, and bullying was determined.

Enjoyment of school.

There is little research on school enjoyment and achievement. Lightbody and Siann (1996) provided some preliminary results. They determined that the majority of secondary students (61%) enjoy school "very much" or "quite a lot" in comparison to other parts of their life. However, the remaining 39% of students in the study reported that they did not enjoy school "very much" or "not at all". Specifically, girls reported that they enjoyed school more frequently than did boys, and younger students reported enjoying school more than did older students. However, enjoyment of school in relation to academic achievement was not examined in the Lightbody and Siann study. Also, connections among enjoyment of school, student conscientiousness, parental support, and school bullying were not documented. The study reported here examined these inter-relationships.

Summary

There is little consistency in the definitions of achievement found in the research. Eccles' Expectancy-Value Theory and related Model of Achievement Related Choices provide, however, a comprehensive understanding of the meaning of achievement. Moreover, other factors, such as bullying, parental support, conscientiousness, and enjoyment may be related to achievement, which were explored in the present study.

Bullying and Achievement

The nature of the relationship between achievement and bullying is unclear. Some studies suggest that achievement is affected by bullying, whereas others indicate

achievement is not related to bullying. This discrepancy is closely examined in the following section.

It seems plausible that involvement in bullying may interfere with learning (Orpinas et al., 2003). Indeed bullies (Nansel et al., 2001; Olweus, 1978) and victims (DeRosier et al., 1994; Juvonen et al., 2000; Macklem, 2004; Olweus, 1978; Schwartz, 2000; Wentzel & Asher, 1995) gain slightly lower than average levels of school achievement than other children. Moreover, other related academic problems have been reported such as less positive school perceptions and higher levels of school avoidance (Kochenderfer & Ladd, 1996; Woods & Wolke, 2004).

Kochenderfer and Ladd (1996) reported that students in their study began the school year with a positive attitude but after having experienced victimization, changed their opinions of school and began to feel unsafe and vulnerable. These feelings persisted even after the bullying had stopped (Kochenderfer & Ladd, 1996). Also, they found that in the spring victimized students wanted to avoid school more than did non-victimized children. This difference was not found at the beginning of the year. Further, Kochenderfer and Ladd (1996) reported that victimized students had more difficulty adjusting to school than did non-victimized students and liked school less than non-victimized students.

Perhaps the strongest evidence that levels of achievement drop after a student is bullied was reported in DeRosier et al.'s (1994) longitudinal study. For four consecutive years, these researchers surveyed students to determine if later academic and behavior problems resulted from peer rejection and bullying. They found that achievement dropped after victimization occurred. Young students in the study who were frequently

victimized performed the poorest on academic tests than did other students who were not victimized. Additionally, Fried and Fried (1996) noted that students who were victimized dropped out of school at a higher rate than those students who were not victimized. Juvonen et al. (2000) substantiated this finding and reported that victims had a low grade point average and high rate of absenteeism.

The link between academic difficulties and bullying may be due to the stress experienced as a result of persistent maltreatment by peers. This stress may decrease the victim's ability to concentrate on academics, thus lowering their overall achievement level. Indeed, Schwartz et al. (2002) found that children who performed poorly in school were frequently bullied and concluded that rejection and bullying exert a pernicious influence on children's academic adjustment and attitudes toward school. In addition to the stress bullying places on the victim, the social context in which the bullying occurs may play an important role. Specifically, since peers influence children's social competence, it follows that victimized children may become more vulnerable to later social problems (Parker & Asher, 1987). Furthermore, since academic work takes place in a social context, it follows that inferior peer relationships may undermine academic achievement (Parker & Asher, 1987).

The inverse relationship between bullying and academic achievement may be characteristic of bullies as well as victims. Bullies encounter elevated rates of daily hassles at school (Ahmed & Braithwaite, 2004), have difficulty following school rules, often do not obey school norms (Macklem, 2004), and are frequently tardy and absent. These difficulties may create significant academic difficulties (Macklem, 2004; Tremblay

et al., 1992). Indeed, bullies are often dissatisfied with their academic experience and are disengaged from their school community (Ahmed & Braithwaite, 2004).

Olweus (1978) also determined that bullies exhibit a more negative attitude towards schoolwork and teachers than do other students. Macklem (2004) reported that aggressive bullies have lower levels of school achievement than do victims or other types of bullies due to their disinterest in academic performance. In a related study, conduct and bullying problems in early elementary school led to lower levels of school achievement in future grades, which, in turn, contributed to delinquency (Tremblay et al., 1992).

Other studies have not found a strong relationship between peer victimization and achievement. For instance, Kochenderfer and Ladd (1996) attempted to determine whether bullying was a precursor of school maladjustment by examining 200 American kindergarten children. Their results were inconclusive. Bullying did not significantly predict changes in academic achievement, and academic achievement did not significantly predict changes in bullying (Kochenderfer & Ladd, 1996). Additionally, Olweus (1978) found that attaining lower grades in school does not place students at a higher risk of victimization. Woods and Wolke (2004) reported achievement levels to be similar between victims and non-victims. It is also possible that victims actually increase their academic abilities by focusing more on schoolwork as a method of escaping the victimization (Woods & Wolke, 2004).

The nature of the relationship between bullying and achievement may vary according to the type of bullying experienced. Woods and Wolke (2004) did not find an association been direct bullying and achievement. In a Canadian study on delinquency,

Tremblay et al. (1992) found a weak relationship between achievement and problem behaviors. The researchers determined that although poor school achievement in first-grade was strongly associated with later disruptive behavior and fourth-grade school achievement, there was no significant association between first- or fourth-grade school achievement and age 14 delinquent behavior (Tremblay et al., 1992). Therefore, achievement may be initially affected by problem behaviors, however the effects may not be long lasting.

Some studies show that other aspects of school life are affected by victimization. Hanish and Guerra (2002) examined the effects of peer victimization on levels of academic achievement and determined that peer victimization was correlated with hostile behavior, inattention in the classroom, delinquency, rejection, and low popularity among classmates. However, victimization was not found to correlate with academic withdrawal. As such, bullying did affect some aspects of academic life (such as inattention in the classroom and low popularity among classmates); however, peer victimization did not predict inclusion in the internalizing, low achieving subgroup (Hanish & Guerra, 2002).

Summary

The nature of the relation between achievement and bullying is not well understood. Peer victimization may negatively affect both the bullies' (Nansel et al., 2001; Olweus, 1978) and victims' (DeRosier et al., 1994; Juvonen et al., 2000; Olweus, 1978; Schwartz, 2000; Wentzel & Asher, 1995) academic achievement, but this finding is not always supported (Tremblay et al., 1992; Willms, 2002; Woods & Wolke, 2004). Thus, further study is needed to specify this relationship. Specifically, a goal of the

present study was to determine the extent to which achievement levels were lower for victims in comparison to other students.

Gender Differences in Achievement and Bullying

Although few studies have examined gender differences in achievement for bullies and victims, differences in achievement for male and female victims of bullying have been found. In Hanish and Guerra's (2002) study examining the link between gender differences in academic achievement of bullies and victims, the researchers determined that the effects of peer victimization were more enduring for boys, and that persistent victimization resulted in a pattern of maladaptive behavior. Schwartz et al. (2002) found that boys who were bullied received lower academic scores than did girls. Gender differences and achievement have been considered, as have gender differences and bullying; however, the interrelationship of the three factors (gender, achievement, and peer victimization) has been largely ignored. Therefore, the following section will discuss gender differences in relation to achievement and bullying separately.

Gender Differences in Academic Achievement

Gender differences have been found in several subject areas. Female students consistently and significantly outperform male students in reading literacy (Lynch, 2002; Wolfe, 2004). Conversely, male students outperform female students in terms of mathematics performance in many countries (Muthen & Siek-toon, 1998; Wolfe, 2004). Nonetheless, both boys and girls were able to increase their mathematics achievement when they believed in their abilities, appreciated the usefulness of math, and understood the importance of understanding procedures as opposed to simply memorizing the steps (Mason, 2003). Newman (2003) established that female students are more worried than

male students that their teacher may perceive them as "dumb" if they ask questions (particularly in math class), due in part to female students' lower expectations for success and their fear of embarrassment. In the area of science, male and female students' performance is similar (AAUW, 1992). It has also been documented that female students exhibit lower levels of self-confidence in the subject areas of math and science (Wolfe, 2004). Newman (2003) also reported that teachers generally have higher expectations for male students in the subject of math, which may contribute to different levels of math achievement between male and female students.

From analyzing data in the National Longitudinal Survey of Children and Youth (NLSCY), Willms (2002) found that, in general, male students experience more cognitive difficulties than female students. For instance, male students obtained lower scores than female students on the Peabody Picture Vocabulary Test-Revised (PPVT-R) at ages four and five (Willms, 2002). Additionally, among the students tested at the intermediate school age, more male than female students produced low scores on the test of math skills. This finding contradicts other studies showing that male students outperformed female students in mathematics domains (Newman, 2003; Wolfe, 2004). One reason why intermediate aged male students in Willms' (2002) study may have produced lower scores than female students is because the male students in the study were considered "vulnerable," as they were at risk of experiencing problems throughout childhood (including poor physical and mental health).

Gender Differences in Bullying

As previously discussed, male students are victimized more frequently than female students (Bjorkqvist et al., 1992; Goodman et al., 2001; Ma, 2002; Macklem,

2004; Nansel et al., 2001; Ojala & Nesdale, 2004; Olweus, 1993; Rivers & Smith, 1994; Verkuyten & Thus, 2002) and use more direct means of bullying (Batsche & Knoff, 1994; Bjorkqvist et al., 1992; Bjorkqvist, Österman, and Kaukiainen, 2000; Blankenmeyer, Flannery, & Vazsonyi, 2002; Boulton et al., 1999; Goodman et al., 2001; Leff et al., 2001; Seals & Young, 2003; Storch et al., 2003). In fact, male bullies are three to four times more likely to utilize physical assaults than female bullies (Batsche & Knoff, 1994). In terms of the tendency for male students to bully utilizing more direct methods, Storch et al. (2003), Seals and Young (2003), Bjorkqvist et al. (2000), and Goodman et al. (2001) all reported gender differences in overt victimization (e.g., hitting) whereby male students were subjected to more acts of overt victimization compared to girls.

There are many explanations for male bullies' tendency to utilize physical aggression and female bullies' tendency to enact indirect aggression. One reason is the difference in the type of friendships male and female students have with people of their same gender. "While boys socialize in large groups with loose boundaries, girls prefer small, tight friendship groups, typically dyads [e.g., having a close best friend]" (Bjorkqvist et al., 2000, p. 194). Also, since female students discuss their feelings with each other more than male students do, there are more opportunities for indirect, socially manipulative aggressive behaviors to occur (Bjorkqvist et al., 2000). It follows that female victims experience elevated submissive and withdrawal scores because they typically are excluded from the friendship groups (Schwartz et al., 2002).

Another rationale for gender differences is the difference in goals valued by members of their gender group. As previously mentioned, a goal of male students is to

establish social dominance (Boulton et al., 1999). Hence, more direct methods of bullying may be used to exert physical dominance over their victims through the use of physical strength (Bjorkqvist et al., 2000; Rivers & Smith, 1994). However, a goal of female students is to establish close, intimate relationships with other students. So, female bullies may utilize indirect methods of victimization because indirect methods (e.g., spreading rumors) are effective at tarnishing the female victim's intimate relationships with others (Bjorkqvist et al., 1992; Boulton et al., 1999).

No significant gender differences emerge in the use of verbal aggression (Bjorkqvist et al., 2000). Bjorkqvist et al. (2000) cited numerous studies and concluded that "no sex difference could be discerned in 16 of them, while males were more directly aggressive verbally in 9 studies, and females in 1" (p. 195). Thus, there is no clear gender difference in terms of using verbal aggression.

Studies show that teachers do not report gender differences in bullying. Coleman and Byrd (2003) found teachers may more readily regard male aggressive behavior as normal, rather than identifying it as bullying behavior. Second, teachers may not be aware of the bullying that occurs in school, especially since bullying occurs during transition times, on the way to or from school, and on the playground where teachers may not be present or on supervision. Third, Coleman and Byrd (2003) also noted that teachers may not be aware of the covert forms of bullying, and therefore may under-report it in comparison to children's reports. Lastly, teachers may selectively attend to certain children based on other social behaviors or academic abilities and miss other students' actions (Coleman & Byrd, 2003).

In terms of cross-gender bullying, Seals and Young (2003) determined that both male and female students generally target victims of the same gender. Batsche and Knoff (1994) found that more than 80% of male students were victimized by other male students. Ma (2002) found that although girls generally bully girls, boys victimize both boys and girls. Additionally, Olweus (1993) found that boys inflict most of the bullying to which girls were subjected. Over 60% of female students in grades 5 – 7 indicated male students bullied them, while the vast majority of male students (over 80%) reported being bullied by male students (Olweus, 1993). Also, male students are more often the bully, reinforcer, and helper, whereas girls are more often the bystanders and defenders (Ma, 2002). In sum, female students could be victimized by either gender, but tend to victimize only other female students. However, male students are more often the bullies and the victims of direct peer victimization, which concurs with relevant research documenting tougher, more aggressive relationships exist among male students than among female students (Olweus, 1993).

The effects of peer victimization may also differ between girls and boys. Male students exhibit the most severe responses to victimization (Hanish & Guerra, 2002). Hanish and Guerra (2002) explain that bullying may be a more callous process for male students because the nature, meaning, importance of victimization, and social relationships in general, impact male students more profoundly than female students. Additionally, Hanish and Guerra (2002) determined that male students are more likely to be repeatedly victimized throughout time in a variety of ways, resulting in distress.

Summary

In sum, although research on gender differences in achievement for bullies and victims is lacking, preliminary results suggest that male students exhibit a more severe response to victimization (Hanish & Guerra, 2002), which may have a more damaging effect on their level of achievement than for female students. Indeed, Willms (2002) found male students to be more vulnerable than female students, so it was speculated that male students are susceptible to experiencing academic problems if they are bullied. Gender differences in achievement for victims were examined in this study.

Age Differences in Victimization of Bullies and Victims

There are discrete differences in how bullying takes place and is experienced by children according to age (Macklem, 2004). As such, age differences in regards to peer victimization will be examined here.

Several trends have been reported in the research on prevalence rates of bullying related to age. Some researchers report that prevalence rates steadily decline as children age (Batsche & Knoff, 1994; Bentley & Li, 1995; Kochenderfer & Ladd, 1996; Ma, 2002; Olweus, 1993; Rivers & Smith, 1994; Seals & Young, 2003; Smith, Madsen, & Moody, 1999; Whitney & Smith, 1993). In fact, Olweus (1993) found rates of bullying to be twice as high in elementary as they were in secondary school, while Kochenderfer and Ladd (1996) found the victimization rate for students in grades two through six was 12% whereas the victimization rate for students in grade seven through nine dropped to 5% (Kochenderfer & Ladd, 1996). As such, prevalence rates of bullying dropped as students aged, which may be due in part to developmental and methodological factors.

Developmental factors have been proposed to explain the decline of bullying with age including age-specific social and cognitive skills (e.g., younger students have not yet developed empathy for others, and, therefore, may be more apt to bully), and the age-relevant understanding of what bullying means (e.g., younger students may not realize that bullying is socially unacceptable) (Ma, 2002; Smith et al., 1999). There are also methodological explanations for the decline of bullying with increasing age. Smith et al. (1999) determined that younger students, particularly in the early primary years, were more likely to include any negative behaviors (e.g., fighting) as bullying even though they may not constitute bullying per se (e.g., situations with an imbalance of power, etc.). As such, younger students may exhibit a higher prevalence of bullying due to methodological differences.

A smaller number of studies report that prevalence rates for bullying peak in late elementary to junior high and subside in late junior high and into senior high (Bjorkqvist et al., 1992; Espelage & Swearer, 2003; Hanish & Guerra, 2004; Hoover & Olsen, 2001; Orpinas et al., 2003; Seals & Young, 2003). These researchers believe prevalence rates of bullying increase as children age because they may become more sophisticated in their methods due to intellectual and/or physical gains (Hanish & Guerra, 2004). As such, older children are more able to garner power over their victims than are younger children. These researchers also believe that students in early adolescence exhibit less negative opinions of aggression than younger students do (Pellegrini, 2002). As such, older students may be more apt to utilize such aggression since it is more readily accepted. In addition, the increase of bullying through school until junior high may be related to characteristics of the schools. For instance, Pellegrini (2002) suggested that middle and

junior high schools can have large and impersonal classes in which competition is stressed and peers are compared, thus increasing the probability of bullying at older ages. Additionally, a lack of school community is characteristic of secondary schools relative to primary schools. Secondary school students do not have a consistent cohort of individuals in their classes across the day and have a number of different teachers, thus encouraging subtle forms of bullying (e.g., deterring peers' efforts or honesty) (Pellegrini, 2002). Further, the actual transition from elementary to secondary school can increase rates of bullying.

Summary

It has been reported that there are definite age differences in the frequency and methods of bullying. In general, it has been found that younger students are more at risk of being bullied (Batsche & Knoff, 1994; Bentley & Li, 1995; Kochenderfer & Ladd, 1996; Ma, 2002; Olweus, 1993; Rivers & Smith, 1994; Smith et al., 1999; Whitney & Smith, 1993) due to a lack of social and cognitive skills, such as empathy (Smith et al., 1999). However, there is research that reports the prevalence of bullying to increase, due to gains in intelligence and physical strength (Bjorkqvist et al., 1992; Espelage & Swearer, 2003; Hanish & Guerra, 2004; Hoover & Olsen, 2001; Orpinas et al., 2003; Seals & Young, 2003).

Research Questions

The primary aim of this study was to determine whether children who are bullied experience low levels of academic achievement. To specify this relationship, several factors related to achievement and bullying were examined, including parental

involvement and support in school, student conscientiousness, and student enjoyment of school. Family characteristics and the children's gender were also examined.

Specifically, this study explored the following questions:

1. Do male students experience more bullying than female students?
2. Do male students attain higher levels of academic achievement than female students?
3. Do bullied students obtain higher or lower levels of achievement?
4. Are factors such as parental involvement and support, student conscientiousness, and student enjoyment of school related to student achievement?

CHAPTER THREE

Method

Participants

Participants in the present study were selected from the National Longitudinal Survey of Children and Youth (NLSCY). The NLSCY is a national database, funded by Statistics Canada and the Applied Research Branch of Human Resources Development Canada, on the characteristics and experiences of children as they grow from infancy to adulthood (Willms, 2002). The NLSCY is organized by cycles based on the years the data were collected and is intended to inform policy (Willms, 2002). Specifically, the objectives of the NLSCY are as follows: 1) establish the prevalence of various biological, social, and economic characteristics and risk factors of Canadian children and youth; 2) monitor the impact of risk and protective factors on the development of these children; 3) provide information to policy and program officials to develop effective strategies to assist children to live healthy, active lives; 4) focus on all aspects of children's lives including the individual, school, and family levels; 5) collect national and provincial data; and 6) explore subject areas where interventions can be made and will affect a large portion of the population (Statistics Canada, 1997).

The survey instruments utilized in the NLSCY include: 1) self report questionnaire for children aged 10 – 11, 12 – 13, and 14 – 15 years of age; 2) a teacher's questionnaire for Kindergarten, elementary homeroom, secondary Mathematics and Language Arts teachers; 3) a principal's questionnaire; and 4) an interview with the person most knowledgeable (PMK), who in most instances (88% of participants in entire survey) was the child's mother (Statistics Canada, 1997). For the current study, only data

contained within the self-report for children aged 10 – 11, primary questionnaire with person most knowledgeable, and the elementary homeroom teachers' questionnaires were used.

The NLSCY data were accessed via the Prairie Regional Research Data Center at the University of Calgary. For the present study, data from Cycle Three were utilized, which had been collated in 1998 and 1999. A subsample of 2084 children (aged 10- and 11- years old) and their families from the NLSCY was selected. Only this age group of children was asked about bullying in the self-complete questionnaire. Alhough the NLSCY did not specify why only this age group was questioned about bullying, perhaps it was due to research proving that prevalence rates of bullying begin to decline after this age (Batsche & Knoff, 1994; Bentley & Li, 1995; Kochenderfer & Ladd, 1996; Ma, 2002; Olweus, 1993; Rivers & Smith, 1994; Seals & Young, 2003; Smith et al., 1999; Whitney & Smith, 1993). As such, the elementary homeroom teachers' questionnaire was also used to examine their responses in relation to the students' responses. Finally, the primary questionnaire completed by the PMK was used to obtain information about the children's demographic background.

Measures

Person Most Knowledgeable Level of Education

The highest level of education obtained and reported by the PMK was initially split into 11 categories (Statistics Canada, 1997). Categories included: 1) elementary school (8 years of schooling); 2) some secondary school (9 years of school); 3) secondary school graduation; 4) other beyond high school; 5) some trade school, etc.; 6) some community college, etc.; 7) some university; 8) diploma/certificate trade school; 9)

diploma/certificate community college; 10) Bachelor degree (includes LLB); and 11) Masters, degree in medicine, doctorate. To simplify reporting, these classifications were recoded to the following five groups: 1) high school or lower; 2) some post secondary; 3) diploma; 4) Bachelor degree; and 5) Masters or higher.

Household Income

Household income was also reported by the PMK. Initially the income breakdowns were as follows: 1) less than $10 000; 2) $10 000 to $14 999; 3) $15 000 to $19 999; 4) $20 000 to $29 999; 5) $30 000 to $39 999; and 6) $40 000 or more (Statistics Canada, 1997). To report meaningful results, these categories were recoded into the following three groups: 1) $29 999 or less; 2) $30 000 to $39 999; and 3) $40 000 and above.

Bullying

Bullying is most often measured through the use of surveys, questionnaires, interviews, peer nominations, and daily records of direct observation. Surveys, questionnaires, and interviews provide basic demographic information about bullying, such as information about the bullies, victims, frequency, incidents, and the attitudes of children towards bullying. Self reporting is the preferred method of assessment for research purposed of bullying behaviors (Espelage & Swearer, 2003). Common self-report bullying scales ask students to rate how often they are bullied over a specific period of time and are considered a reliable and accurate measure of bullying (Ahmed & Braithwaite, 2004; Boulton et al., 1999; Callaghan & Joseph, 1995; Coleman & Byrd, 2001; Graham & Juvonen, 1998; Hanish & Guerra, 2004; Juvonen et al., 2000; Kochenderfer-Ladd, 2003; Kochenderfer & Ladd, 1996; Mahady Wilton et al., 2000;

Nansel et al., 2001; Rivers & Smith, 1994; Salmivalli et al., 1996; Storch et al., 2003; Verkuyten & Thus, 2002). This method was employed in the current study to identify victimization.

To determine whether subjects were victims at school and on their way to and from school responses to the following statements from the self-complete questionnaire were used: "I am bullied in school" and "I am bullied on my way to and from school" (Statistics Canada, 1999). Reponses are based on the following Likert scale: all the time (coded as one), most of the time, some of the time, rarely, and never (coded as five). The coding was subsequently reversed so that for both of the bullying items a high score would indicate high rates of being bullied.

Achievement

Teacher reports of achievement have been utilized in many studies and are considered accurate (Englund et al., 2004; Keith et al., 1998; Nansel et al., 2001; Pajares et al., 1999; Schwartz, 2000; Stevenson & Baker, 1987; Woods & Wolke, 2004). For example, Englund et al. (2004) reported that when measuring achievement, teacher ratings of performance are a "more accurate and sensitive measure of children's actual classroom achievement" as compared to standardized achievement tests (p. 725). Additionally, Stevenson and Baker (1987) found that teacher ratings accurately predicted school achievement and grades. Further, Pajares et al. (1999) reported that teacher ratings of students' writing achievement, in particular, are reliable. Therefore, teacher ratings can be considered an accurate and reliable method of measuring achievement for the present study.

Level of academic achievement was determined from responses to the following questions from the elementary homeroom teachers' questionnaires: 1)"How would you rate this student's current academic achievement in reading?"; 2) "How would you rate this student's current academic achievement in written work (e.g., spelling and composition)?"; and 3) "How would you rate this student's current academic achievement in mathematics/arithmetic?" (Statistics Canada; 1999). Responses to all three questions were based on the following Likert scale: 1) near the top of the class; 2) above the middle of the class, but not at the top; 3) in the middle of the class; 4) below the middle of the class, but above the bottom; and 5) near the bottom of the class. Again, coding was reversed so that high scores indicated a high level of achievement.

Parental support.

To measure the degree of support parents provide in their children's education, the elementary homeroom teacher was asked the following questions: 1) "In your opinion, how involved is (are) the parent(s)/guardian(s) in this student's education?"; and 2) "In your opinion, how strongly does (do) this student's parent(s)/guardian(s) support your teaching efforts?" (Statistics Canada, 1999). Responses to the first question were based on the following three-point scale: not involved, somewhat involved, and very involved. Responses to the second question were based on the following three-point scale: does (do) not support, somewhat supports, and strongly supports. Some teachers did not know the parent(s)/guardian(s) well enough to respond to the questions. These responses were coded as missing values by the investigator. High scores indicated high levels of support.

Student conscientiousness.

Student conscientiousness was measured by the elementary homeroom teachers' responses to several statements regarding work habits: "How often does this student demonstrate each of these work habits? a) listens attentively; and b) follows directions" (Statistics Canada, 1999). Responses to the questions were based on the following Likert scale: never, rarely, sometimes, often, or always. High scores indicated high rates of listening and following directions.

School enjoyment.

School enjoyment was categorized by the student's elementary homeroom teachers' responses to the questions: "This student seems to enjoy most classes" and "This student seems bored in most classes" (Statistics Canada, 1999). The following Likert scale was used to judge the responses to both of the aforementioned statements: always, often, sometimes, rarely, and never. Originally, high scores indicated low levels of enjoyment and boredom. As such, scores were recoded in reverse so high scores indicated high levels of enjoyment and boredom.

Procedure

Data Preparation and Between-Group Comparisons

Before beginning the analyses, variables were recoded and merged from different data files into one file. All missing cases were specified, so that their values would not be included in the analyses. Frequency counts, means, standard deviations, skewness, kurtosis, range, and minimum and maximum values for each of the variables was calculated. Following this phase of analysis, analyses of variance (ANOVAs) were conducted to evaluate mean differences between variables based on gender. Due to the

large sample size, all analyses yielded significant results ($p < .05$). Effect sizes were, therefore, used to determine if meaningful significance exists. Lastly, based on research from previous studies, questions measuring similar constructs were included in a scale analysis. In this way, scale scores, or factors, related to bullying were created.

To determine factor scores, reliability analyses of variables that seemed to measure the same constructs were conducted. That is, all variables that seemed to measure a common construct were included in inter-item correlation analyses. For instance, the latent construct student conscientiousness initially was comprised of seven indicator variables including: 1) listens to the teacher; 2) follows directions; 3) completes work on time; 4) works independently; 5) takes care of belongings; 6) works neatly; and 7) puts effort into work. However, inter-item analysis indicated that several of the variables were not highly inter-correlated. Only the *listening to the teacher* and *following directions* variables were most highly inter-correlated, and thus were the only two variables retained as measures of student conscientious in the model. Those variables that were not highly inter-correlated with other variables were removed. As seen by the high Comparative Fit Index (CFI) score and the low Standardized Root Mean Residuals (SRMR), the indicator variables remaining are strong indicators of the latent constructs.

Model Testing

Once the items within the factors were determined, structural equation modeling (SEM) was employed using EQS: A Structural Equation Program software package (Version 6.1; Bentler, 2004). . The SEM process involves specifying the indicator variables and from them deriving latent variables (also known as constructs or factors). Latent variables partial out error from each of the indicator variables. As s result, the

model includes more reliable measures of the constructs. Paths between latent variables were specified to derive a statistical model that best fits the data. Variables in the model are conceptualized as latent, each comprised of several indicator variables. Note that indicator variables were selected based on previous scale analyses and research that established that they measure the corresponding latent variables.

This study used a model development approach to SEM for exploratory and confirmatory purposes. First, a model of indicator variables was included in a latent variable path analysis using the EQS (Bentler, 2004) statistical program. The indicator variables formed latent factors, which included bullying, achievement, parental support, student conscientiousness, and student enjoyment of school. Maximum Likelihood (ML) is employed to reflect the difference between the observed covariance matrix and the one predicted by the model (Kline, 1998). ML is also more robust to violations of normal distributions while being consistent and efficient in large samples (Kelloway, 1998). Using the Maximum Likelihood (ML) method, the intercorrelation matrix was converted to a variance-covariance matrix used to fit the model. Model parsimony is the goal, meaning that the simplest version of the model offers the best explanation of relationships among factors.

Kline (1998) suggested four particular indices be utilized to determine the fit of the model: the Pearson chi-square statistic, its degrees of freedom, its significance level, and an index that describes the overall proportion of explained variance. As such, the Comparative Fit Index (CFI) was examined, as were the Standardized Root Mean Residuals (SRMR). Each of these indices of explained variance will be discussed in greater detail below.

The Pearson chi-square (χ^2) statistic represents the likelihood ratio between sample size and the value of the ML fitting function (Kline, 1998). A nonsignificant χ^2 value is desired, as it represents that the model is able to reproduce the covariance matrix. However, a nonsignificant χ^2 value is difficult to obtain with large sample sizes (Kline, 1998). As such, other fit indices are examined. The CFI is less affected by sample size and provides an indication the overall fit of the researcher's model. Originally calculated only on EQS, the CFI is now available on other programs. The CFI indicates goodness of model fit if its value is .90 or higher (Kelloway, 1998; Kline, 1998). SRMR is an overall average of the size of the residuals and is acceptable if it is .05 or less (Kline, 1998).

If the model was found to be deficient at determining a good fit (as indicated by the aforementioned measures), then it is respecified to develop an alternative model that best explains the pattern of intercorrelations (Kline, 1998). The end result is a parsimonious model with good fit and little error.

CHAPTER FOUR

Results

This chapter consists of three sections. The first section contains the demographic characteristics of the children and their families contained within the present study, as well as a description of all the variables. The second section contains gender comparisons, while the third section contains a description of the variables examined in relation to achievement and bullying (e.g., parental support, student conscientiousness, and enjoyment of school). Also, the model of achievement and bullying developed from structural equation modeling is presented.

Demographic Description of the Sample

The demographic characteristics of these 10- and 11-year old victims and their families are summarized in Table 1. Gender of child, gender of person most knowledgeable (PMK), education level of PMK, household income, and province of residence are reported.

Table 1

Demographic Characteristics for the Sample of 10- to 11-Year Old Children (n = 2084)

Variable	Total	Percentage
Gender of child		
Male	1049	50.3
Female	1035	49.7
Gender of PMK		
Male	139	6.7
Female	1945	93.3
Education of PMK		
High School	696	33.4
Some Post	614	29.5
Diploma	508	24.4
Bachelors	221	10.6
Graduate	36	1.7
Household income		
<$29 999	427	20.5
$30 000 – 39 999	300	14.4
>$40 000	1357	65.1
Province		
British Columbia	215	10.3
Alberta	227	10.9
Saskatchewan	159	7.6
Manitoba	138	6.6
Ontario	518	24.9
Quebec	372	19.9
New Brunswick	131	6.3
Nova Scotia	149	7.1
P.E.I.	60	2.9
N.FLD	115	5.5

The number of 10- and 11-year old males in the survey was 1049 whereas the number of 10- and 11- year old females was 1035. With a difference of 14 between males and females, accounting for only 0.67%, it can be stated that the proportion of males to females in the survey is almost equal. Due to their availability and knowledge of their

children's development, the majority (93.3%) of the respondents providing information about the family was the mother.

In the sample, most of the PMK respondents had attained a diploma or higher level degree, while about a third had attained a high school diploma or less. The remainder had completed some postsecondary education, but had not obtained a diploma or degree to signify completion of the program.

The majority of PMKs reported that their household income was greater than $40 000. The second largest income categorization comprising about 20% of the sample attained household incomes of less than $29 999. The remainder attained a household income between $30 000 and $39 999.

The majority of the respondents resided in Ontario, followed by Quebec, which is indicative of actual population densities by province (Statistics Canada, 1997). The current study is representative of 10 provinces, therefore results can be generalized to these provinces. However, none of the Territories were represented in the sample. Therefore, results are not generalizable to these parts of the country. Provinces were similar in their rates of bullying, achievement, parental involvement, student conscientiousness, and student enjoyment.

Description of Variables

For each of the variables, the mean, standard deviation, skewness, kurtosis, range, minimum and maximum values are presented (Table 2). All variables are based upon the elementary teacher's reports, with the exception of the variables "bullied at school" and "bullied to/from school," which are based on the child's self report.

Table 2

Descriptive Statistics of Variables

Variable	*n*	M	SD	Skewness	Kurtosis	Range of scores	Minimum	Maximum
Bullied at school	1579	1.52	.97	2.06	3.75	4	1	5
Bullied to/ from school	1580	1.28	.79	3.23	10.33	4	1	5
Achievement in reading	1142	3.43	1.26	-.30	-.92	4	1	5
Achievement in math	1091	3.50	1.25	-.34	-.91	4	1	5
Achievement in writing	1155	3.33	1.27	-.22	-.94	4	1	5
Enjoys class	1180	4.08	.74	-.53	.27	4	1	5
Bored in class	1179	3.77	.73	-.32	.19	4	1	5
Listens in class	1175	3.85	.86	-.48	-.17	4	1	5
Follows directions	1175	3.99	.81	-.54	-.05	4	1	5
Parents involved	1128	2.54	.59	-.90	-.19	2	1	3
Parents support teacher	1079	2.69	.51	-1.34	.79	2	1	3

Skewness and kurtosis values indicate distributions of data in each variable. Data sets with skewness greater than 3.0 are deemed extremely skewed. Data sets with kurtosis values around 10.0 may suggest a problem while values greater than 20.0 indicate a serious problem (Kline, 1998). The "bullied to/from" school variable showed an abnormal distribution as demonstrated by its high positive skew (3.23) and high kurtosis (10.33). Thus, scores tended to trail off to the left and were extremely peaked, thereby violating assumptions of normalcy. For some variables the standard deviations are low, indicating a limited distribution.

Analyses of Variance

Analyses of variance were conducted to examine gender differences in all the variables used in the bullying and achievement model (e.g., bullying, achievement, parental support of their child's education, student conscientiousness, and student enjoyment of school). Differences between boys and girls for each variable are shown in Table 3. Effect sizes (e.g., the proportion of variance in the dependent variable that is attributable to gender) are reported as partial Eta squared (η_p^2).

Table 3

Means and SDs for the Bullying and Achievement Variables Among Male and Female Students

Measured variable	*Male students*	*Female students*	df	F	η_p^2
Bullied at school			1	33.32**	.02
M	1.66	1.38			
SD	1.04	0.86			
Bullied to/from school			1	23.60**	.02
M	1.44	1.12			
SD	1.27	1.24			
Reading achievement			1	32.41**	.02
M	3.27	3.61			
SD	1.28	1.22			
Writing achievement			1	48.61**	.04
M	3.08	3.59			
SD	1.29	1.20			
Math achievement			1	.25	.00
M	3.52	3.48			
SD	1.27	1.24			
Enjoys class			1	48.68**	.04
M	3.94	4.23			
SD	0.76	0.69			
Bored in class			1	44.82**	.04
M	3.63	3.92			
SD	0.75	0.69			
Listens in class			1	57.81**	.04
M	3.67	4.04			
SD	0.86	0.82			
Follows directions			1	74.97**	.06
M	3.8	4.2			
SD	0.82	0.75			
Parents involved in school			1	6.87*	.01
M	2.50	2.59			
SD	0.61	0.57			
Parents support teacher			1	11.07**	.01
M	2.64	2.74			
SD	0.55	0.46			

*$p < .01$ **$p < .001$

No large gender differences emerged on any of the dependent variables as shown by the low effect size coefficients. Of the 2084 children aged 10 to 11, approximately 7% indicated they were bullied (type of bullying unspecified) on the way to and from school at least some of the time, while approximately 14% indicated they were bullied while at school at least some of the time.

The first research question focused on gender difference in relation to bullying. In this study, the prevalence of male students' victimization was similar to the prevalence of female students' victimization. Thus, although it was expected that boys would report more bullying than girls, reporting rates were similar.

The second research question focused on gender difference in relation to achievement. In this study, the female students' reading, writing, and mathematics achievement scores were similar to male students' achievement in all three areas as indicated by the small effect sizes.

Procedures for Model Development

The latent variable path model (LVPM) was assessed using EQS. Structural equation modeling (SEM) was employed to reduce correlational error and create the most parsimonious model. The correlations among the variables are shown in Table 4.

Correlations

Correlations are moderate to high, with the highest correlation between achievement in reading and achievement in writing ($r = .89$).

Table 4

Achievement and Bullying Measures: Correlations (n = 2084)

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
Bullied at school	-	.60**	-.23**	-.25**	-.23**	-.14**	-.17**	-.22**	-.25**	-.14**	-.12**
Bullied to/from school		-	-.24**	-.25**	-.21**	-.09**	-.12**	-.18**	-.18**	-.12**	-.11**
Reading achievement			-	.89**	.79**	.37**	.30**	.53**	.51**	.28**	.28**
Writing achievement				-	.78**	.40**	.33**	.57**	.57**	.31**	.31**
Math achievement					-	.37**	.30**	.53**	.50**	.28**	.26**
Enjoys class						-	.66**	.55**	.52**	.32**	.37**
Bored in class							-	.54**	.51**	.30**	.33**
Listens in class								-	.85**	.34**	.36**
Follows directions									-	.37**	.36**
Parents involved in school										-	.57**
Parents support teacher											-

**$p < .01$, two-tailed

A visual examination of the pattern of correlations suggests that some variables are more highly inter-correlated than others, indicating that factors may exist. In general, student achievement (reading, writing, and math) is most highly correlated to listening and following directions in class, followed by more moderate correlations with student enjoyment and boredom, and slightly weaker correlations with parent support and involvement in school.

Latent Variable Path Model

The correlation matrix together with the standard deviations from Table 2 became the raw data inserted into the model. The type of path model utilized in the study was recursive, as disturbances are uncorrelated and all causal effects are unidirectional (Kline, 1998). Paths were specified between variables assumed to correlate the highest. Latent

variables were created from indicator variables. The latent variable path model of bullying and achievement is illustrated in Figure 1.

The model converged in 6 iterations providing a good fit of the data ($\chi^2(32) = 300.00, p < .001$; SRMR = .05; CFI = .98). Thus, the model accounted for 98% of the variance in the data. Additional goodness of fit indices show analogous results (Bentler-Bonett Normed Fit Index (NFI) = .98; Bentler-Bonett Non-Normed Fit Index (NNFI) = .97). The NFI indicated the proportion in the improvement of the overall fit of the model relative to a null model; thus, the model is 98% better than the null model. The NNFI corrects for model complexity by correcting downward the value of NFI as the number of parameters increases (Kline, 1998). Hence the NNFI of the model is slightly lower than the NFI.

The third research question asks whether being bullied is related to levels of achievement. As shown in Figure 1, several factors are related to bullying and achievement. The latent variable Achievement, at the top left side of the model is measured by Achievement in Reading, Writing, and Math, as reported by the homeroom teacher. Achievement is negatively correlated with Bullying (as measured by the variables Bullied at and Bullied To/From School; $r = -.17$); hence, students who are bullied are more likely to have lower levels of achievement.

Continuing down the model, it is shown that Student Enjoyment of School is correlated with Achievement ($r = .45$) while Student Conscientiousness also correlated with Achievement ($r = .61$). In other words, students who are doing well in various subject areas are also conscientious and enjoy school. Student Enjoyment of School and Student Conscientiousness are also highly correlated ($r = .71$). Note that Student

Enjoyment of School is identified by the homeroom teacher's perception of the students' Enjoyment of Class and Level of Boredom. Also, Student Conscientiousness is identified by the homeroom teacher's perception of the students' ability to Listen in Class and Follow Directions. As such, if a student appears to enjoy school, they are likely to be perceived as conscientious. Also correlated with Achievement is Parental Support (r = .40) whereby high levels of student achievement are related to high levels of parental support.

Parent Support is identified by the homeroom teacher's perceptions of Parent Involvement in School and Parent Support of Teacher. The latent variable Parent Support is correlated with Student Enjoyment of School (r =.54) and Student Conscientiousness (r = .51). Thus, children whose parents are supportive of school are likely to enjoy school and work conscientiously in the classroom.

To address the forth research question about factors related to student achievement, it appears that achievement is strongly correlated with student conscientiousness and enjoyment, as well as parental support.

Summary of Model Results

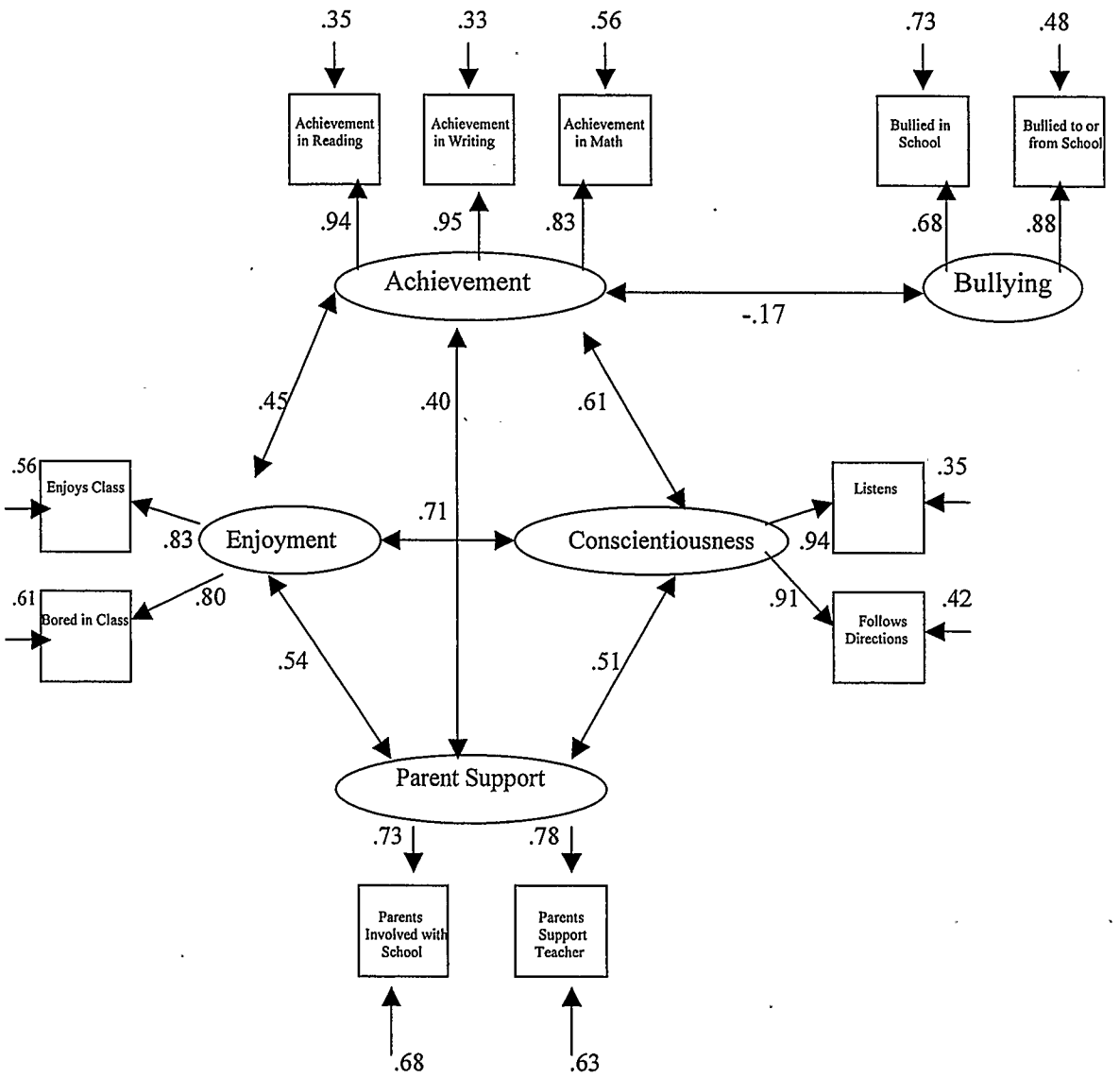
According to the descriptive information about this sample, respondents were fairly distributed between male and female students and across 10 provinces. The vast majority of the PMKs were female. Also, education levels and household income were varied, suggesting that the results are likely to be generalizable to other Canadian children.

Several characteristics were significantly related to achievement and bullying, including parental support of the teacher, student conscientiousness, and student

enjoyment of school. Overall, the model indicates that children who are likely to be bullied at, to, or from school are experiencing low levels of achievement, low levels of conscientiousness and little enjoyment of school. Moreover, they experience little parental support at school. These results do not seem to differ significantly between boys and girls.

Figure 1

Latent Variable Path Model of Bullying and Achievement employing Maximum Likelihood Estimation (n = 2084).



CHAPTER FIVE

Discussion

This study extends our understanding of bullying by demonstrating a link between a student's social and academic functioning. The main results of the present study indicate that 1) male and female students did not differ in levels of bullying; 2) male and female students did not differ in level of achievement; 3) parental support, student conscientiousness, and student enjoyment of school are related to achievement; and 4) children who are bullied obtain lower levels of achievement. In this chapter these results will be compared with previous research. The strengths and limitations of the present study are outlined, followed by a discussion of the implications for current theory and future research. Finally, a brief synopsis of the study will be provided.

Discussion of Findings

The overall prevalence rate for children being bullied at school (some, most, or all of the time) is 14% whereas the prevalence for children being bullied to or from school (some, most, or all of the time) is 7%. These results are consistent with the 8 – 10% prevalence rate of habitual and persistent bullying that is often reported (Coleman & Byrd, 2004; Dill et al., 2004; Graham & Juvonen, 1998; Hanish & Guerra, 2002; Kochenderfer & Ladd, 1996; Ojala & Nesdale, 2004; Schwartz et al., 2002).

The majority of students in the current study were found to enjoy school, while relatively few stated that they never, rarely, or only sometimes enjoyed it. These frequencies were slightly higher than Lightbody and Siann's (1996) report of secondary school students, indicating elementary school children may enjoy school more than secondary school students. Indeed, student enjoyment of school has been found to

deteriorate with age (Lightbody & Siann, 1996). The majority of students in the current study reportedly followed and listened to directions often or all of the time. The majority of parents of students in the sample were also very involved with their child's school and strongly supported their child's teacher. This level of parent support is promising in terms of student achievement, since parent support has been found to increase a child's academic success (Christenson et al., 1992; Englund et al., 2004; Fehrmann et al., 1987; Izzo et al., 1999; Keith et al., 1996; Keith et al., 1998; Miedel & Reynolds, 1999; Shaver & Walls, 1998; Stevenson & Baker, 1987).

Male and female students did not differ in terms of their rate of victimization, achievement, level of parental support, conscientiousness, or enjoyment of school. Despite differences in average ratings across the variables, the effect size of gender was very low. There are several hypotheses why male and female students did not differ in rates of victimization. It is possible that male students, who usually report higher levels of victimization (Batsche & Knoff, 1994; Bjorkqvist et al., 1992; Goodman et al., 2001; Lagerspetz et al., 1988; Ma, 2002; Macklem, 2004; Nansel et al., 2001; Ojala & Nesdale, 2004; Olweus, 1993; Rivers & Smith, 1994; Verkuyten & Thus, 2002), may have underreported for fear of being identified as a victim. Such a label may lower their social status (Macklem, 2004), and, hence, deter reporting. This lower rate of bullying for boys may mask possible male and female differences in the prevalence of bullying. Another explanation is that the definition of bullying was not offered to students when completing the survey. As such, there may have been some confusion as to which behaviors constituted bullying and more general acts of aggression may have been reported.

Both the pattern of correlations shown in the matrix and the results of the LVPA indicate several significant relationships among bullying, parent, and school characteristics. More specifically, children who are bullied at school obtain lower levels of achievement, and lowered levels of achievement are related to less parental support at school, less conscientiousness, and less enjoyment of school. That achievement can be affected by school and family factors, as opposed to just one's aptitude, reflects Eccles et al.'s (1983) Expectancy-Value Theory. Eccles et al.'s theory states that if a student perceives a task to be useful, achievement will be positively affected. Related to the current study, students who were more conscientious likely perceived the task to be useful, hence, attained higher levels of achievement. In addition, Eccles et al.'s theory emphasizes the importance of expectancies for success. Since victims often see themselves as unsuccessful and have lower levels of self-esteem, it follows that victims would have low expectancies for success. These lowered expectancies likely lower their level of achievement.

That children who are bullied experience impaired academic functioning has been suggested in previous research (DeRosier et al., 1994; Juvonen et al., 2000; Macklem, 2004; Olweus, 1978; Schwartz, 2000; Wentzel & Asher, 1995). The present study confirmed that parental support is related to increased achievement levels. It follows then that if parents of victims were supportive of their child's academic efforts, achievement may improve. However, victims infrequently report being bullied (Olweus, 1993; Rivers & Smith, 1994; Whitney & Smith, 1993) because they fear that adults may not believe them. If the parents are not aware of the bullying, they may not advocate or provide extra support to their child at school, inadvertently contributing to lower achievement.

The current study found that heightened levels of school enjoyment are related to higher achievement. However, victims are typically unpopular (Olweus, 1993), can become depressed, and have lower levels of self-esteem (Macklem, 2004; Orpinas et al., 2003). With few friends and a poor self-image, victims tend not to enjoy school, demonstrate reduced commitment, and avoid working with other students (Ahmed & Braithwaite, 2004; Graham & Juvonen, 1998; Hodges & Perry, 1999; Snyder et al., 2003). With decreased enjoyment and task commitment victims begin avoiding school (Graham & Juvonen, 1998; Hodges & Perry, 1999; Leff et al., 1999; Snyder et al., 2003) resulting in poor performance on academic tasks (Ahmed & Braithwaite, 2004; Hodges & Perry, 1999). This decreased task commitment and choice to avoid school relates back to Eccles et al.'s (1983) theory whereby students' academic choices and task commitment can increase or decrease achievement. In this case, victims choose not to commit themselves to the academic work, thereby lowering their rates of achievement.

Since victims may not believe that their teachers will support them when victimized (Ahmed & Braithwaite, 2004), they may continue to avoid reporting it, which negatively impacts their level of achievement. In addition, being victimized leads children to narrow their circle of friends to other children who are also victimized and share their behavioral difficulties (Hodges & Perry, 1999). As a result, it is difficult for victims to maintain or make non-victim friends, perpetuating their status, dislike for school, and lower achievement.

The present study confirms previous research indicating that parent support is moderately related to achievement in 10- and 11-year old children (Christenson et al., 1992; Englund et al., 2004; Fehrmann et al., 1987; Izzo et al., 1999; Keith et al., 1996;

Keith et al., 1998; Miedel & Reynolds, 1999; Shaver & Walls, 1998; Stevenson & Baker, 1987). Parent support of the child's academic pursuits, the teacher, and of the school as a whole likely influence achievement because parents are aware of what their child is working on and can assist in their learning if required. For instance, parents who are supportive of the school, are likely supportive of the school's workload demands (e.g., homework), and will support their child in meeting those demands at home. With parental guidance and supervision of assignments at home, children may be more likely to complete them on time with a higher amount of effort than if they were unsupervised. Increased completion of homework and work completed with a high amount of effort may result in increased grades and achievement levels.

Although some studies have found no relationship between parental support of school and achievement (Bobbett et al., 1995; Keith et al., 1986; Okpala et al., 2001), the non-relationship may be more due to varying definitions of parental involvement as opposed to finding no parental effect on achievement (Englund et al., 2004). For instance, definitions of parent involvement can be vague and include levels of parent – teacher communication, parents' communication with their children regarding school issues, number of parent volunteer hours, parent attendance at school meetings and conferences, parental involvement with homework, and parental expectations regarding their children's educational attainment (Englund et al., 2004; Keith et al., 1986). Due to the inconsistency in the definition of parental involvement, parental effects on their children's education may not be consistently detected (even though effects may exist). For instance, if a study defined parental involvement as attending school conferences (e.g., Bobbett et al., 1995), and the majority of parents did not attend meetings while their

children were able to attain high achievement, there would appear to be no relation. However, those same parents who did not attend the school conference may have helped their children with homework, volunteered in the school, and supported the teacher in other ways. So, involvement may contribute to achievement, without being detected.

Parent support was also moderately related to student conscientiousness and enjoyment. When children see that their parents are putting effort into their education (e.g., by attending meetings with the teacher, attending concerts and other student presentations, asking about and assisting with homework, etc.), they may become conscientious in their work. Related to Eccles et al.'s (1983) Expectancy Value Theory, students may be more apt to select challenging tasks and set high goals for themselves because they see their parents putting forth effort into their education. Students want to give back to their parents, what their parents are putting into it. In other words, when parents see value in education so too might their children, thereby increasing achievement as per Eccles et al.'s theory. This modeling may also impact student enjoyment of school because supportive parents likely enjoy spending time at their child's school and assisting their children with homework. Children may internalize this enjoyment and experience it in their academic work.

The relationship between student conscientiousness and achievement was also examined. Since conscientiousness has been linked to achievement in previous studies involving university students (Amenkhienan & Kogan, 2004), it was important to examine the relationship with an elementary school-aged sample. The current study found that a relationship between student conscientiousness and achievement exists, which is congruent with other studies that have found learning outcomes are influenced

by student effort and participation (Astin, 1993, 1999; Pace, 1984; Pascarella & Terenizini, 1991). Student conscientiousness and achievement are likely related because the more a student listens and follows directions, the more likely they are to attain higher grades. Further, students likely listen and follow directions because they value the task, hence, valuing instructions and directions is likely to increase achievement as per Eccles et al.'s (1983) theory.

A relationship between student conscientiousness and enjoyment of school was also established. It is probable that students are dedicated to their studies (as demonstrated by their conscientiousness) because they enjoy school, value its worth, and are intrinsically motivated by it. For instance, if a student is listening and following directions in class, they are likely doing so because they are enjoying it. If they did not enjoy class, they likely would not listen or follow directions. Therefore, the more conscientious a student is, the more likely they are to enjoy school.

Previous studies did not examine the relationship between student enjoyment of school and achievement. As such, the current study examined the relationship and found a moderate, but significant connection. If students enjoy learning activities at school, it follows that they would work hard, exhibit persistence, choose challenging tasks, and obtain high marks for their learning. As previously mentioned, the majority of students in the current study enjoy school. This bodes well for their potential future achievement.

Strengths and Limitations

The current study attempted to account for the limitations of previous studies and extend our understanding of bullying. A large Canadian sample was used to compare results with research conducted in other countries. With students drawn from all

provinces across Canada, this sample was not limited to a single school, community or city (e.g., Bjorkqvist et al., 1992; Coleman & Byrd, 2003; Graham & Juvonen, 1998; Hodges & Perry, 1999; Schwartz et al., 2002; Storch et al., 2003; Storch & Esposito, 2003; Tremblay et al., 1992). In addition, the current study is one of a few (e.g., Goodman et al., 2001; Juvonen et al., 2000; Tremblay et al., 1992) to employ structural equation modeling, which reduces measurement error and increases the reliability of these results.

Previously, few studies examined the relationship between achievement and other school related factors such as the level of parental involvement, student conscientiousness, and student enjoyment. However, many studies have investigated parent involvement in school and resulting levels of academic success (Christenson et al., 1992; Englund et al., 2004; Fehrmann et al., 1987; Izzo et al., 1999; Keith et al., 1996; Keith et al., 1998; Miedel & Reynolds, 1999; Shaver & Walls, 1998; Stevenson & Baker, 1987), establishing that increased levels of parent involvement are moderately related to increased levels of achievement. In addition, the current study examined an elementary sample of students, whereas other studies have explored parental involvement on junior or senior high student achievement (Bobbett et al., 1995; Deslandes et al., 1997; Keith et al., 1986; Singh et al., 1995; Sui-Chu & Willms, 1996). Examining an elementary aged population contributes to the existing studies investigating parental support and involvement at the elementary level, thereby increasing generalizability.

Previous studies of student conscientiousness and student achievement (e.g., Amenkhienan & Kogan, 2004) reported increased levels of conscientiousness relate to increased levels of achievement. However, this study only examined postsecondary

students, the results of which cannot be assumed to apply to elementary students. Hence, the current investigation adds to the existing research.

Secondary students' enjoyment of school was examined by Lightbody and Siann (1996) in the context of motivation and attribution. However, these results could not be applied to an elementary population. The current study adds to the knowledge about elementary students' enjoyment of school in the context of achievement in that it found a significant relationship between enjoyment and achievement.

Despite the strengths of the present study, and the contributions it makes to existing research, it is limited by many factors and caution must be taken when interpreting the results. It was not possible to examine age differences due to the limited age range of children who responded to questions about bullying. Age must be examined in this model of bullying and achievement, particularly since bullying changes with age (as previously discussed).

Measurement problems also exist. The current study utilized an existing data file provided by Statistics Canada. Thus, it was not possible to ensure that students understood the term "bullying" used in the questions. Their responses to being bullied were not corroborated from reports of parents or teachers, and should be considered a subjective approximation of actual bullying experienced. Also, specific questions rather than longer instruments were used, which may be less reliable. In addition, the study was limited to 10- and 11-year-olds. Therefore, results can only be generalized to this age range.

Although results from three questionnaires were utilized in the current study, the measurement of the latent variables was limited. For instance, the latent variable

achievement was derived from teacher ratings of achievement, rather than achievement tests results or a combination of teacher ratings and achievement test results. However, the NLSCY did not contain actual achievement test results, only teacher ratings. While research has proven the accuracy of teacher ratings (Englund et al., 2004; Hecht & Greenfield, 2002; Keith et al., 1998; Stevenson & Baker, 1987), other studies have not (Bennett, Gottesman, Rock, & Cerullo, 1993). So, the results of this study must be replicated with additional research that uses alternative measures of achievement.

Other latent variables were also limited by the indicator variables comprising them. For instance, student conscientiousness was identified by two variables regarding listening and following directions. However, many more factors relate to student conscientiousness, including submitting work in on time, coming prepared to class, working neatly, and putting in effort, which warrant investigation (Statistics Canada, 1997). Undoubtedly the latent variables are more complex than what was presented and require further development to fully understand how parental support, student conscientiousness and enjoyment relate to achievement and bullying.

The analyses used in the study were conducted on data collected at a single point in time, and are not longitudinal in nature. Thus, causal inferences cannot be made and all the factors in the study may mutually influence each other. For example, it is possible that achievement continues to deteriorate with repeated bullying, but it is also possible that victims learn coping strategies and immerse themselves in their studies, thereby increasing achievement (after an initial drop). A longitudinal study by Schwartz et al. (1998) indicated that long-term victimization can predict future behavior problems, such as externalizing and attention problems, but did not specifically identify long-term

achievement problems. As such, use of longitudinal data could have strengthened inferences garnered from the results from a developmental perspective. Also, to gain a more complete picture of bullying and achievement, it may be important to examine the various subtypes of victims and bullies (e.g., passive, aggressive, etc.).

Implications for Current Theory and Future Research

The answers to each of the four research questions suggest important avenues for future research. Limitations within the current study also provide guidelines for future research. Each will be discussed in the following section.

Despite the stability of bullying over time, (Leff et al., 2001; Macklem, 2004; Olweus, 1978; Olweus, 1993; Snyder et al., 2003), the dearth of longitudinal studies warrants investigation of potential long-term effects of bullying on achievement. The current study did not examine longitudinal data, but could easily lend itself to such a study. The current model could be applied to future data (e.g., Cycle Four data from the NLSCY, Statistics Canada, 2001) to test for longitudinal effects.

The current study examined the affects of achievement on victims, to the exclusion of bullies. Future research may attempt to examine the relationship between being a bully and achievement, in an attempt to verify previous studies, which have determined a strong relation between bullying and poor academic achievement (Leff et al., 2001; Macklem, 2004). If both bullies and victims were included, comparisons between achievement levels could be made between the two. For instance, researchers could examine whether being a victim or perpetrator of bullying is more detrimental to achievement.

Although self-reporting of bullying behaviors is a common method of data collection (e.g., Ahmed & Braithwaite, 2004; Boulton et al., 1999; Callaghan & Joseph, 1995; Coleman & Byrd, 2001; Graham & Juvonen, 1998; Hanish & Guerra, 2004; Juvonen et al., 2000; Kochenderfer-Ladd, 2003; Kochenderfer & Ladd, 1996; Mahady Wilton et al., 2000; Nansel et al., 2001; Rivers & Smith, 1994; Salmivalli et al., 1996; Storch et al., 2003; Verkuyten & Thus, 2002), self reports can be self-incriminating when used to identify bullies. Even with assurances of anonymity, children that are bullies tend to under report (particularly younger children) (Huesmann et al., 1994). Additionally, complex questions cannot be addressed by surveys, questionnaires, or interviews because children may not understand the intricacies of bullying, thereby biasing the findings (Craig & Pepler, 1997). Therefore, utilization of parent reports (e.g., Schwartz et al., 1998) may provide more accurate indications of bullying. Teacher reports have also been used when identifying bullies and victims (e.g., Hanish & Guerra, 2002; Huesmann et al., 1994; Mahady Wilton et al., 2000; Schwartz, 2000; Schwartz et al., 2002). In addition, child reports or interviews may be used for identifying participants in bullying (e.g., Ahmed & Braithwaite, 2004; Boulton et al., 1999; Callaghan & Joseph, 1995; Graham & Juvonen, 1998; Juvonen et al., 2000; Kochenderfer & Ladd, 1996; Nansel et al., 2001; Rivers & Smith, 1994; Salmivalli et al., 1996; Verkuyten & Thus, 2002; Woods & Wolke, 2004). Another common method of indicating bullies and victims is through peer nominations (e.g., Bjorkqvist et al., 1992; Goodman et al., 2001; Graham & Juvonen, 1998; Hanish & Guerra, 2002; Hanish & Guerra, 2004; Hodges & Perry, 1999; Huesmann et al., 1994; Kochenderfer-Ladd, 2003; Lagerspetz et al., 1988; Mahady Wilton et al., 2000; Salmivalli et al., 1996; Schwartz, 2000; Schwartz et al., 1998;

Schwartz et al., 2002; Wentzel & Asher, 1995). Lastly, playground observations (e.g., Snyder et al., 2003) may also provide accurate indications of bullying.

Future research may consider teacher or peer nominations to corroborate self-report data for the following reasons. Teacher nominations are quick to administer and score, are easy to obtain, and reduce parents' concerns about the potential of their child receiving negative nominations (Leff et al., 1999). In addition, teacher nominations can be more cost effective than self or peer nominations (Leff et al., 1999). However, teacher reports of students' achievement levels are not always accurate. For instance, there exists a substantial range in predictive validity between teacher ratings and actual student achievement suggesting that certain factors do not uniquely influence achievement but may influence teachers' predictions of their students' level of achievement (Hecht & Greenfield, 2002). Therefore, the predictive validity of teacher reports may be enhanced by comparing them with other sources.

Peer nominations may be employed as a method of measuring victimization because they employ multiple observations by multiple raters during a long period of time (Espelage & Swearer, 2003; Leff et al., 1999). In addition, peer nominations allow no specific rater to influence the target child's ratings more than any other rater (Huesmann et al., 1994; Leff et al., 1999). Peer nominations are well-established with high test-retest reliability and stability across time and settings (Leff et al., 1999). Peer nominations also moderately correlate with teacher ratings, creating general agreement between the two sources (Parker & Asher, 1987). For these reasons, future researchers may want to supplement self-reports with other methods of measuring bullying.

Another limiting factor in identification procedures in the current study was the classification of levels of achievement. Only teacher reports of achievement levels were employed, which may lead to variability in reports. Although no achievement tests were administered during the NLSCY, a cross-validation study using a different sample could employ both achievement tests and teacher reports to ensure a high degree of accuracy when identifying levels of achievement.

In terms of identifying latent variables, future research should examine additional factors that may predict bullying and achievement, other than those presented in the current study. Since gender did not explain much of the variance within or between variables, other factors besides gender may substantially contribute to differences in bullying and achievement levels. There are several factors that could be examined further to predict achievement. Such factors may include peer group association, which has previously been linked to higher levels of achievement (Amenkhienan & Kogan, 2004). Classroom behaviors have been causally related to academic skills (Bennett et al., 1993, McKinney, Mason, Perkerson, & Clifford, 1975; McKinney & Speece, 1986; Wentzel, 1991). Also, child-rearing styles could be examined. For example, previous studies have shown that children who bully (Espelage, Bosworth, & Simon, 2000; Shields & Cicchetti, 2001) or are victims (Komiyama, 1986; Rican, Klicperova, & Koucka, 1993; Schwartz, Dodge, Pettit, & Bates, 1997) are more likely to come from families where child-rearing practices are authoritarian. Perhaps by examining other factors such as peer group association, classroom behaviors, and child-rearing styles, more variance would be accounted for when measuring levels of bullying. Through the examination of additional

latent factors or indicator variables within existing latent variables, the factors related to achievement and bullying may become more apparent.

Causality could not be determined within the model developed in the current study. Further research to determine causality could be accomplished using the following methods: 1) replicate the model using different independent samples; 2) corroborate the model with evidence from experimental studies of manipulated variables; and 3) predict effects of interventions (Klein, 1998).

Since it has been determined that increased achievement is related to decreased bullying, one may assume that decreasing bullying may increase achievement. Although not proven in the current study, future studies may benefit from examining the aforementioned link to develop appropriate strategies to ensure children's safety at school and optimal academic success.

Summary and Conclusion

The NLSCY provides a large amount of data based upon multiple informants and methods with a large, nationally representative sample of Canadian children. The current study incorporated several statistical and research considerations identified in the research including using a large, representative sample, examining various family and school factors related to achievement and bullying, and studying gender differences.

The current study adds valuable information to existing research on the relationship between 10- and 11-year old Canadian students' levels of academic achievement and bullying. Parental support, student conscientiousness, and student enjoyment were found to contribute to student achievement, with conscientiousness serving as the stronger predictor of achievement. In addition, achievement was shown to

have a moderate, negative association with bullying. While, further research is needed to determine longitudinal effects of bullying on victimization of both victims and bullies and explore additional latent variables, the current study shows that an important relationship between achievement and bullying exists.

APPENDIX A

Description of the National Longitudinal Survey of Children and Youth

The National Longitudinal Survey of Children and Youth (NLSCY) is a long-term study conducted by Statistics Canada and Human resources Development Canada (HRDC) to monitor the development and well being of Canadian children through their growing years (Statistics Canada, 1999). Survey information is collected every two years from a representative sample of Canadian children, from newborns to young adults. Information is organized into Cycles, with Cycle One data collected from December 1994 through April 1995, Cycle Two data collected from December 1996 through April 1997, and data for Cycle Three, from which the current study was based, collected between October 1998 and June 1999 (Statistics Canada, 1999).

Objectives

There are several objectives of the NLSCY including: 1) to determine the prevalence of risk and protective factors for children and youth; 2) to understand how risk and protective factors in addition to life events influence children's development and growth; 3) to make the data available so policies and programs may be developed to benefit children; 4) to collect information on a wide variety of topics including social, emotional, physical, and economic information; 5) to collect information regarding the environment in which Canadian children are living in and exposed to, including familial, peer, school, and community environments; and 6) to collect information from a variety of sources including the child's parents or guardian, teachers, school administrators, the child, and so forth (Statistics Canada, 1999).

Sample

The NLSCY intended to follow a representative sample of Canadian children from aged newborn through to adulthood living in private homes. Institutionalized children or those living on Native reserves were not included in the NLSCY survey. Data from Cycle One included information on newborn children to those aged 11. Cycle Two contained data on the same children two years later (now ages 2 through 13), and Cycle Three contained data on the same sample, now aged 4 through 15.

In total, 38 035 children were sampled in Cycle Three. However 1 089 (3%) of children were ineligible due to being outside of the age limits of the survey, or due to moving outside of Canada. Therefore, 36 946 children remained eligible participants in Cycle Three data collection. Of all eligible children, 88% of children (or their parents/guardian) responded, with 1% of those only responding partially. Reasons for non-responses include inability to locate the child, refusal, or unusual circumstances (e.g., death in the family, illness, etc.). As such, the final number of participants in Cycle Three was 31 194. The sample was allocated by province as follows:

Table A

Sample Size by Province

Province	Number of respondents
Newfoundland	1612
Prince Edward Island	948
Nova Scotia	2019
New Brunswick	1956
Quebec	6298
Ontario	8658
Manitoba	2254
Saskatchewan	2307
Alberta	3125
British Columbia	2817
TOTAL	31194

The following table depicts the allocation of children by age.

Table B

Sample Size by Age

Age	Responding sample size
0	1736
1	6391
2	1589
3	2029
4	1983
5	6958
6	1536
7	1053
8	1381
9	940
10	1238
11	842
12	1264
13	875
14	1262
15	916

Data Collection

The majority of the NLSCY household data collection was conducted with computer- assisted interviewing (CAI), either in person or via telephone (Statistics Canada, 1999). Employees of Statistics Canada conducted the interviews with Persons Most Knowledgeable (PMK), which in most cases was the mother. Children aged 10 through 15 completed a self-report questionnaire as well. Once the household data collection was complete, school questionnaires were mailed out and returned by teachers and principals of school-aged children within the sample (for whom parental consent had been granted).

Information collected on parents and guardians (as reported by themselves) included socio-demographics, education, labor, income, health, involvement in school, and parent expectations regarding schooling information. Information collected on children (as reported by the parent/guardian and the child depending on age) included socio-demographics, health, perinatal information, motor development, temperament, school achievement, education experiences, literacy, extra-curricular activities, work experience, social relationships, relationships with parents, family and custody history, child care, behavior, self-esteem, smoking, drinking, drug use, vocabulary assessment, math computation test, reading comprehension test, and a locator test. Information collected on families (reported by the PMK) included demographics of family members, relationships within the family, family functioning, and dwelling resided within. Teachers and principals reported on the student population, disciplinary problems, school climate, teaching practices, and demographics (Statistics Canada, 1999).

In summary, the NLSCY data file contains numerous participants including children from birth through young adulthood. Also, the availability of many variables allows the complexity of children's functioning to be carefully examined.

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