SCHOOL STRUCTURE AND EXPERIENCES OF AGGRESSION: SCHOOL TRANSITIONS AND MIDDLE SCHOOL

by

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ABSTRACT

Social dominance theory, which argues that dominance in social hierarchies is established and maintained through the use of aggression, has been used to explain increases in aggression, bullying, and positive attitudes towards aggression following school transitions. School transitions are marked by a disruption in youths' social networks, and they are thus faced with the task of establishing new social hierarchies. However, school transitions and age/grade level have typically been confounded in previous research, and thus it was unclear if the findings reflected a reaction to school transition, which can be explained by social dominance theory, or whether this pattern reflected naturally occurring developmental changes related to social functioning. The current study considered the relationship between school transition and reciprocated aggression (fighting), peer victimization (physical, verbal, and relational), and perceived attitudes of peers regarding aggression, while controlling for grade level. Other aspects of school structure, such as type of school (e.g., elementary, middle, secondary), school size, and the number of grade levels contained within a school, were also considered. The present study made use of the British Columbia Adolescent Health Survey of 2003. A subsample of 22,596 students, from Grades 7 through 12, attending 351 different schools, were selected for consideration in the present study. Youth in the same grade level – both those who were in a transition year, and those who were not – were found to report similar rates of reciprocated aggression and peer victimization, but youth in a transition year perceived their peers to be more accepting of aggression. Youth in smaller schools were more likely to have experienced peer victimization and to perceive their peers to be accepting of aggression. Although school type was not associated with reciprocated aggression or peer victimization, youth in elementary school perceived their peers to be more accepting of aggression than their same age peers in middle or secondary school. The number of grade levels within a school was not associated with reciprocated aggression, peer victimization, or perceived attitudes of peers regarding aggression. Findings were discussed in relation to social dominance theory and social development.

Keywords: Aggression; peer victimization; bullying; school transitions; middle school; school structure; school size.

DEDICATION

This dissertation and my doctorate degree are dedicated to the women in my family who have been a source of love, encouragement, support, and inspiration. You have modeled for me the values I hold close and always will. I aspire to live up to your examples.

I would like to thank my grandmothers Metje Van Blyderveen (nee Budding) and Wilma Koutstaal (nee Van Kruistum) for their kindness and their soft and quiet fortitude. I am also grateful of their encouragement of myself and of their own daughters to pursue their interests and strive to reach their full potential. You have both modeled selflessness and kindness, and taught me to offer kindness and acceptance to all. You have showed me that strength can be demonstrated in many forms and can be found in stillness and in the corners of the heart and mind. You are both incredibly strong and compassionate women whom I have admired all of my life. The greatest compliment I have and could ever receive is to be told I am similar to you.

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Last, but not least, this dissertation and my doctorate degree are dedicated to my mother Annette Van Blyderveen (nee Koutstaal) for her steady love and support which far exceed the role of motherhood. I admire your strength and am humbled by your self-sacrifice for the betterment of your children's lives. A thank-you does not adequately reflect my appreciation and gratitude.

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TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

Aggression, bullying, and peer victimization among youth have received remarkable attention in recent years, both within mainstream culture and the scientific community. This increased attention may be the result of our growing understanding of the multitude of negative physical, social, and mental health outcomes associated with aggression, bullying, and peer victimization, as well as our increased awareness of their prevalence. In response, programs to reduce and prevent aggression, bullying, and peer victimization have been created and implemented in schools. However, in order to create effective interventions it is important to have an understanding of the factors that contribute to aggression, bullying, and peer victimization. One such factor, which has received little attention in the literature, is school structure. The present study considered two elements of school structure: school transitions and school type. School transitions refer to the transitioning of an entire grade cohort from one school to another as a result of their academically moving into the next grade level - a grade level that is not contained within their school of origin. For the purposes of this paper, school type refers to the range of grade levels contained within a school. The types of schools considered included elementary school, middle school, and secondary school. The present study considered these elements of school structure and their relationships with reciprocated aggression (fighting), peer victimization (physical, verbal, and relational), and beliefs regarding peers' acceptance of aggression. The present study did so while controlling for gender, grade level, the number of transitions youth had experienced, school size, the number of grades contained within the school, and the number of grades contained within the school above the youth's grade level.

Defining Aggression, Bullying, and Peer Victimization

Aggression, bullying, and peer victimization are related yet distinct constructs. The term aggression is often used generally to refer to the inflicting of harm, whether this harm is directed towards another individual, life form, or object. The focus of the present study is interpersonal aggression, the infliction of harm by one person on another. From

this point forward the term aggression shall refer to interpersonal aggression. In such cases the aggressor, the individual inflicting harm, is often considered the bully, while the individual on which the harm is being inflicted is often considered the victim. Thus, the term bullying is often used in the literature to refer to the experience of the aggressor while the term peer victimization is often used to refer to the experience of the target of aggression (Hawker & Boulton, 2000). It has been stipulated that the use of the terms bullying and peer victimization require an imbalance of power or strength (Olweus, 1993a, 1993b, 1994). These experiences are distinct from reciprocated aggression, such as fighting or conflict, where the individuals involved typically have equal levels of involvement in the expression and experience of aggression, in other words, having equal power in the exchange. Although Olweus (1993b, 1994) has argued that use of the term bullying should be limited to repeated aggression, it is commonly also used to refer to single aggressive incidents (Rigby, 2002) and it has been questioned whether victims experience worse outcomes when aggression is repeated (Graham & Juvonen, 1998).

Aggression, bullying, and peer victimization can take various forms, and different systems of classification have been developed and used by researchers. The different forms detailed in the literature include direct, indirect, overt, covert, proactive, reactive, physical, verbal, relational, and social. The distinction between direct and indirect forms is similar to the distinction between overt and covert forms. Direct aggression, including bullying and peer victimization, has been defined as aggression in which the aggressor is known to the victim and the attack is relatively open (Olweus, 1993a, 1993b; Rivers & Smith, 1994). In contrast, indirect aggression, including bullying and peer victimization, has been defined as aggression in which the aggressor acts through a third party and is unknown to the victim (Björkqvist, 1994; Lagerspetz, Björkqvist, & Peltonen, 1988; Rivers & Smith, 1994). Similarly, overt aggression, including bullying and peer victimization, has been defined as open aggression (Crick, 1995), whereas covert aggression, including bullying and peer victimization, has been defined as aggression in which the aggressor is concealed (Crick, Werner, Casas, O'Brien, Nelson, Grotpeter, et al., 1999). However, it has been argued that defining aggression, bullying, and peer victimization in such terms has been of greater use to research considering bullies, and

less useful for research considering victims, as for the youth who is experiencing victimization it is typically of little consequence whether they are victimized by the bully directly or through the larger peer group (Hawker & Boulton, 2001). Distinctions have also been made between proactive and reactive aggression, bullying, and peer victimization, where the aggressor acts either with deliberation and intention to gain resources, or as an expression of their own emotional reaction to a given situation, respectively (see Dodge & Coie, 1987). Again, for the youth who is experiencing victimization it is likely of little consequence whether the bully's actions are proactive or reactive.

Research considering the victims of bullying has focused primarily on physical, verbal, relational, and social forms of aggression, bullying, and peer victimization. Physical aggression, including bullying and peer victimization, has been defined as a form of aggression "in which the victim's physical integrity is attacked" (Hawker & Boulton, 2000, p. 444; see also Rigby & Slee, 1999). Verbal aggression, including bullying and peer victimization, has been defined as any incident in which "the victim's status is attacked or threatened with words or verbalizations" (Hawker & Boulton, 2000, p. 444; see also Crick, Werner, et al., 1999; Rigby & Slee, 1999; Olweus, 1993b). Relational aggression, including bullying and peer victimization, has been defined as aggression in which a victims' peer relationships, friendships, and/or feelings of belonging are damaged (Crick, 1995; Crick & Grotpeter, 1995). Social aggression, including bullying and peer victimization, has been defined as aggression in which a victim's self-esteem or social status is damaged using nonphysical means (Galen & Underwood, 1997). Both relational and social aggression may take indirect forms (e.g., spreading rumors), but may also take direct forms (e.g., using threats to control the victim's social activity). Despite social, relational, and indirect forms of aggression, bullying, and peer victimization having been defined differently, there is considerable overlap between these constructs and the items used to assess them are often similar (Crick, Werner, et al., 1999). It is of note that physical, verbal, and relational forms of peer victimization are associated with one another. Physical and verbal forms have been shown to be highly correlated (Olweus, 1979; Perry, Kusel, & Perry, 1988; Van Blyderveen, 2003), and when items related to both forms are included in the same

measure, items have been found to be unidimiensional (Rigby & Slee, 1993; Little, Jones, & Henrich, 2003). Furthermore, moderate correlations have been found between relational/indirect and covert (physical and verbal) forms of peer victimization (Crick & Grotpeter, 1995, 1996; Crick, Casas, & Ku, 1999; Olweus, 1994). Despite the associations between the forms of peer victimization, the various forms appear to be independently related, and contribute differently to, various forms of social and psychological maladjustment (e.g., Crick, 1995; Crick & Bigbee, 1998; Hawker & Boulton, 2001; Sullivan, Farrell, & Kliewer, 2006).

School Transitions and Social Hierarchies

Within any given school district it is typically the case that there are more elementary schools than middle or secondary schools, and more middle schools than secondary schools (e.g., Simmons & Blyth, 1987; see Appendix A for information regarding British Columbia's school districts). As a result, students from a number of elementary schools will go on to attend the same middle or secondary school. Likewise, students from a number of middle schools will go on to attend the same secondary school. The various elementary schools are said to 'feed' into the given middle or secondary school, as are the various middle schools said to 'feed' into the given secondary school, and they are thus referred to as 'feeder' schools. Any given middle or secondary school will have a number of associated feeder schools. Youth experience social upheavals at the time of school transitions as their new peer group contains both peers who were, and who were not, previously part of their peer networks. They are thus faced with the task of reestablishing their social network following school transitions.

Dominance theory has been used to predict and describe the process by which youth reestablish their social networks at such times of transition. Dominance theory, as detailed by Pellegrini (see 2002a, for a comprehensive summary), is based on the models, theories, and research from a diverse literature in fields such as biology, anthropology, sociology, and psychology (including evolutionary, social, and

developmental psychology) related to the social structures of human and nonhuman primates. Pellegrini's writing regarding dominance theory relates to the dominance, or relative social status, of *individuals relative to other individuals within a larger social group*, and is distinct from Social Dominance Theory (Sidanius & Pratto, 1999), which is a comprehensive theory of group based dominance that is concerned with the social status of *groups relative to other groups*. It is Pellegrini's work, which represents an integration of key concepts and major tenants of previous theories regarding dominance, which is the focus of the present paper. Reference to dominance theory, unless otherwise stated, will refer to Pellegrini's work.

It has been argued that dominance hierarchies are necessary in social groups as they determine access to valued group resources, with more dominant individuals having higher priority relative to their subordinates (Bjorklund & Pellegrini, 2000; Pellegrini & Bartini, 2000a, 2001; Pellegrini, 2001b). It is believed that social dominance hierarchies are established and maintained through the use of both aggressive and affiliative behaviours (Bjorklund & Pellegrini, 2000; Pellegrini, 2001b, 2002a; Pellegrini & Bartini, 2001). Dominance theory proposes that the use of aggressive strategies will be more prominent when dominance hierarchies are in flux, unstable or not clearly defined, particularly during the initial stages of group formation (Pellegrini & Bartini, 2000a, 2001). Instability in dominance hierarchies may result from changes in the nature and/or the availability of resources or changes in regards to the particular individuals included in the group (Pellegrini & Bartini, 2000a, 2001). When dominance hierarchies are not clearly established or are unstable, members of the group will compete for resources using aggressive strategies, and in the process of such competitions a clear hierarchy will emerge (Pellegrini, 2001b; Pellegrini & Bartini, 2000a). However, once a hierarchy is established, the costs of aggressive strategies begin to outweigh the benefits, as the likelihood of defeat for a low status group member becomes more certain, and thus, the use of aggressive strategies will decline (Björkqvist, 1994; Pellegrini, 2001b, 2002a; Pellegrini & Bartini, 2000a, 2001). It is at this time, when individuals rely less on aggressive strategies, that there is a greater reliance on affiliative strategies (Pellegrini, 2002a; 2002b; Pellegrini & Bartini, 2000a; 2001). Strategies of affiliation serve to

maintain group hierarchies while integrating less dominant individuals into the social group and encouraging cooperation (Pellegrini, 2001b, 2002a).

Aggression in the social relationships of youth has been the primary focus of Pellegrini's work regarding dominance theory. He and colleagues have proposed that dominance hierarchies are necessary in the social groups of children and youth, as they determine access to valued group resources such as toys and other play related material in childhood and peer status and heterosexual relationships as children grow older (Pellegrini, 2001b; 2002a; 2002b; Pellegrini & Bartini, 2001). In support of these arguments, Pellegrini (2002a) noted that dating, when dating first emerges, appears to be motivated more by status than commitment. He also found male youths' dominance, in both aggressive and affiliative dimensions, to be associated with their heterosexual relationships (e.g., dating) (Pellegrini, 2002a; Pellegrini & Bartini, 2001).

Pellegrini (2001b, 2002a) has also argued that children and youth make use of both aggressive strategies (such as fighting and bullying) and affiliative behaviours (such as leadership, reconciliation and focusing of attention) in order to establish and maintain social dominance and leadership. He theorized that aggressive strategies would be most prominent when children and youth's dominance hierarchies were unstable or not clearly defined, such as times of school transition (Pellegrini, 2001b, 2002a; Pellegrini & Bartini, 2001; Pellegrini & Long, 2002) and rapid maturation, as size and strength impact dominance (Pellegrini, 2002a; Pellegrini & Bartini, 2001). Pellegrini has also argued that youth rely less on aggressive strategies, and more on affiliative strategies, once hierarchies are established (Pellegrini, 2002a; 2002b; Pellegrini & Bartini, 2000a; 2001). Consistent with this argument, Pellegrini and Bartini (2001) found the dominance status of male youth to be associated with aggression but not affiliation immediately following a school transition. Later in the year, affiliative strategies, not aggressive strategies, were associated with dominance.

Pellegrini and colleagues (Pellegrini, 2002a, 2002b; Pellegrini & Bartini, 2000a, 2001; Pellegrini & Long, 2002) have been particularly interested in the use of aggressive strategies following school transitions, a time when, based on dominance theory, they expected that the use of aggressive strategies would increase as youth negotiated their

new social hierarchies. Consistent with dominance theory, some of their longitudinal studies found rates of aggression (Pellegrini & Bartini, 2001; Pellegrini & Long, 2002) and bullying (Pellegrini & Bartini, 2000a; Pellegrini & Long, 2002) to be higher during the year of a school transition when compared to the year before and/or after the transition year. Although such longitudinal studies inherently test for age/grade level effects, school transitions and age/grade level have typically been confounded in such studies as all youth transitioned at the same age/grade level. These longitudinal studies compared cohorts to themselves prior to and following school transition, and it is thus unclear if the rise in aggression and bullying found indeed reflects a reaction to school transition, which can be explained by dominance theory, or whether this pattern instead reflects naturally occurring social developmental changes associated with this age and/or grade level. Further, contrary to these findings, other research has not found differences, or actually found declines in, bullying (Olweus, 1977) and peer victimization (Olweus, 1993b; Pellegrini & Long, 2002) following school transitions. Again, school transitions were confounded with age and grade level.

Both Rigby (2002) and Simmons and Blyth (1987) have made attempts to address this confound between school transitions and age/grade level. In a reconsideration of data he had collected during a prior longitudinal study (1997), which followed students from Grades 4 through 12, Rigby (2002) found rates of peer victimization to decline with grade, increasing slightly following school transitions, regardless of whether the transition occurred at Grade 7 or 8. However, Rigby did not conduct formal analyses of this pattern, but rather commented on the overall pattern of results. Similarly, Simmons and Blyth (1987) found that early adolescent boys, who were in Grade 7 and had just transitioned to middle school, relative to their Grade 7 peers who were in an elementary school, were more likely to have experienced peer victimization. However, Grade 10 males who had transitioned from middle school to secondary school were not more likely to have been victimized than their peers who did not make a second transition.

Although dominance theory pertains to behaviours, and does not necessarily speak to attitudes, it is possible that attitudes towards aggression become more lenient

when aggression is more prevalent and social hierarchies are unstable. It is of note however, that although generally speaking, attitudes and behaviours are correlated in a number of fields, these correlations are often lower than one might expect, and behaviours and attitudes certainly are not perfectly correlated (see Kraus, 1995, for a review). Research considering the relationship between youths' aggressive attitudes and behaviours has not been an exception. Although research has found aggressive attitudes and behaviours in school age children to be positively associated with one another (Huesmann & Guerra, 1997; Rigby, 1997; Werner & Nixon, 2005), and anti-bullying attitudes have been found to be negatively associated with bullying behaviours (Boulton, Bucci, & Hawker, 1999; Boulton, Trueman, & Flemington, 2002), such associations have typically been small to moderate in size.

Few studies have evaluated the relationship between school transitions and attitudes towards aggression. These studies do however provide some evidence that attitudes towards aggression change in parallel with changes in aggressive behaviours at the time of school transitions. Pellegrini and Bartini (2000a) found that attitudes towards aggression became more lenient following a school transition. However, attitudes did not become more conservative when aggression declined later in the school year. A second study found females to be more tolerant of aggression in their male peers following a school transition (Bukowski, Sipola, & Newcomb, 2000). In each case, school transition was confounded with age and grade level.

The possibility of cumulative effects of school transitions on aggression has not previously been considered. Predictions could be made for both increased and decreased reliance on aggression as the number of school transitions increase. On the one hand, one might argue that with multiple school transitions youth gain greater experience in transitioning schools, which will help them better navigate the forming and changed social structure. On the other hand, if one considers a school transition to be a life stressor, it is reasonable to argue that youth will experience greater difficulties with multiple transitions, which may manifest in increased reliance on aggressive strategies. In fact, female youth who experienced two school transitions have been found to have poorer self-esteem and academic achievement than their same-grade peers who

experienced only one school transition (Simmons & Blyth, 1987). Further, research considering school mobility, changes of school which are not associated with school transitions, has found school mobility to be associated with a variety of negative outcomes. For example, school mobility has been associated with lower academic achievement (see Mehana & Reynolds, 2004, for a review), grade retention (Simpson & Fowler, 1994; U.S. Government Accountability Office, 1994), suspensions (Simpson & Fowler, 1994), and emotional/behavioural problems (Simpson & Fowler, 1994). Some such studies have also shown a cumulative effect of changes of school. For example, Wasserman (2001) found that as the number of school changes a youth had experienced increased, their academic achievement was further reduced. However, school mobility has also been associated with a number of additional potential risk factors which may contribute to such detrimental effects. The proportion of youth who change schools is higher among migrant families (U.S. Government Accountability Office, 1994), families whose first language is not English (U.S. Government Accountability Office, 1994) and families of lower socioeconomic status (U.S. Government Accountability Office, 1994; Wasserman, 2001). However, after controlling for such additional risk factors, school mobility has been shown to be associated with both academic and emotional/behavioural difficulties (e.g., Simpson & Fowler, 1994; Wasserman, 2001).

The present study considers the relationship between school transitions and each of reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and beliefs regarding peers' acceptance of aggression. The present study expands on previous research by considering school transitions that occur at various grade levels, from Grades 7 through 11. The present study further expands on previous literature by considering whether there are cumulative effects of multiple school transitions. For all analyses, in addition to controlling for grade level, school type, school size, number of grade levels contained within the youth's school, the number of grade levels above the youth's grade level, and gender were also controlled.

Type of School

Schools differ in regards to the specific grade levels and range of grade levels they contain. For the purpose of this study, school type shall refer to the terms used to describe the grade levels and range of grade levels contained within a given school. The terms elementary, middle, and secondary have often been used to indicate the grade levels and range of grade levels contained within a given school. Although there is much variation among schools in regards to the specific grade levels and range of grade levels they contain, in general, elementary schools include the primary grades and possibly the middle/intermediate grades, middle schools contain the middle/intermediate grades, and secondary schools contain the senior grades.

Previous research has not considered whether or not a relationship exists between school type and either aggression, bullying, peer victimization, or attitudes towards aggression. Despite this lack of research there is reason to believe that a relationship might exist as the types of schools differ in regards to a number of attributes that have been proposed to be related to aggression. Middle and secondary schools, relative to elementary schools (and in some cases, middle schools relative to secondary schools), have been argued to have large and impersonal classes (Simmons & Blyth, 1987), more students in the entire school and at each grade level (Simmons & Blyth, 1987), greater focus on competition and social comparisons (Eccles, Wigfield, & Schiefele, 1998), more permissive teacher attitudes regarding aggression (Eslea & Smith, 1998), a lack of school community and less positive relationships (less personal) with teachers and peers due to moving classrooms and changes in classmates for each subject (Eccles et al., 1998; Midgley, Feldlaufer, & Eccles, 1988; Simmons & Blyth, 1987) and less adult supervision (Olweus, 1993b; Pellegrini & Bartini, 2000b). Many of these school and classroom attributes have been either shown to, or have been argued to, impact student attributes such as academic achievement, motivation, and self-image (see Eccles et al., 1999; Simmons & Blyth, 1987). Thus, there is reason to believe, and indeed it has been argued, that these attributes may contribute to greater levels of aggression, bullying, peer victimization, and/or positive attitudes regarding aggression (Eslea & Smith, 1998; Olweus, 1993b; Pellegrini & Bartini, 2000b). Therefore, one might

expect aggression, bullying, peer victimization, and positive attitudes regarding aggression to be more prevalent in middle and secondary schools relative to elementary schools, and perhaps in secondary schools relative to middle schools.

Further theorization and research suggests that middle schools may be particularly problematic relative to elementary and secondary schools. Simmons and Blyth (1987) have shown support for a hypothesis of "Developmental Readiness", in which they argue that environmental changes, such as school transitions, have detrimental effects when they occur at a time when youth lack the maturity to cope with such changes. They found that girls who attended middle schools experienced a drop in their self-esteem, which persisted and from which they did not entirely recover, relative to their peers who did not attend middle schools. They argued that the nature and demands of middle schools were not consistent with the developmental abilities or social and emotional maturity of youth relative to elementary schools at this time in development. Eccles and Midgley (1989) expanded on this work by emphasizing that it is not only the timing of changes, but also the type of transition experienced. They detailed a "Stage-Environment Fit" model which emphasized the fit (or discrepancy) between an individual's developmental stage at the time of changes and the nature of the changes they experienced in their school environment. Eccles and Midgley (1989) argued that middle schools were especially problematic because they provided an environment that emphasized competition and social comparison, reduced autonomy, emphasized lower-level cognitive abilities, and disrupted social networks, all at a developmental stage when youth experience greater self-focus, a desire for autonomy, increasing cognitive abilities, and greater concern regarding peer relationships. Further, they argued and found support for this resulting developmental mismatch being associated with an increased risk for a number of negative academic and motivational outcomes (Eccles & Midgley, 1989; Eccles, Midgley, Wigfield, Miller-Buchanan, Reuman, Flanagan, et al., 1993; Eccles, Wigfield et al., 1993).

The present study considered the relationship between school type and reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and beliefs regarding peers' acceptance of aggression. The types of schools considered

in the present study included elementary schools, middle schools, and secondary schools. Middle school was defined as a school that contained neither the lowest possible grade, kindergarten, nor the highest possible grade, Grade 12. Secondary schools were further categorized as to whether or not their feeder schools were elementary or middle schools. Given that both the Developmental Readiness and the Stage-Environment Fit models stress the importance of the timing of transitions, with particular vulnerability emphasized in early adolescence (Simmons & Blyth, 1987), the grade levels contained in middle schools were also considered as a possible predictor of reciprocated aggression, peer victimization and perceived attitudes of peers' regarding aggression. Analyses controlled for school transitions, school size, number of grades contained within the youth's school, the number of grades above the youth's grade, gender, and grade level.

School Size

School size, in and of itself, separate from other factors associated with school size, such as school type and characteristics/attributes typical of middle and secondary schools, has also been proposed to be related to each of aggression, bullying, and peer victimization. Based on theories of reciprocal altruism, school size has been proposed to impact social dynamics and the use of aggressive interpersonal strategies. It has been argued that when youth meet repeatedly over time, as in small schools or those which keep cohorts together, reciprocal altruism is more likely to result. Pellegrini (2002b) argued that in small schools, or schools which keep cohorts together:

> ... an aggressive or a cooperative act will illicit a similar act from a peer, quid pro quo: Aggression elicits aggression and cooperation elicits cooperation. The former strategy is costly to both parties and has fewer benefits relative to the costs. Cooperation has fewer costs and greater benefits. Consequently, cooperative acts are generally used more than aggressive acts in stable groups. (p. 155)

In contrast, with larger school size, greater anonymity is experienced by students, as they have less frequent contact with one another and it becomes more

difficult for them to know all of their peers. Pellegrini (2002b) argued that in larger schools reciprocal altruism would be less likely to occur, and instead reliance on aggressive interpersonal strategies would be more likely to occur, as aggressive strategies would be less costly. However, research findings have been inconsistent. Whereas most researchers have not found a relationship between school size and bullying (Lagerspetz, Björkqvist, Berts, & King, 1982, Olweus, 1978, 1991; Whitney & Smith, 1993; Wolke, Woods, Stanford, & Schulz, 2001) or victimization (Olweus, 1991), others have found smaller schools to have higher rates of bullying than larger schools (Ma, 2002), while still others have found larger schools to have higher rates of peer victimization (O'Moore & Hillery, 1989) than smaller schools. It has been argued that this variability in findings might be the result of the particular methodologies applied in each of these studies, particularly the types of schools considered in study samples (Pellegrini, 2002b). Furthermore, these studies have typically compared a limited number of schools (e.g., O'Moore & Hillery, 1989, considered a total of four schools).

It is also possible that the inconsistency of previous findings reflects a more complicated relationship between school size and aggression, with age/grade level serving to moderate the relationship. Youth who experience victimization in their peer group in smaller schools likely have greater difficulties changing peer groups relative to their peers in larger schools given that they have fewer peers, and thus peer groups, who might include them. This situation could be particularly difficult in early adolescence, when the peer group becomes larger (Dunphy, 1963) and of greater importance to youth (Simmons & Blyth, 1987), leaving youth in smaller schools with little, if any, choice of peer group within their cohort. Bukowski and Sippola (2001) argue that group cohesion is forced in schools, where youth are forced to be part of a cohort (the group), whether or not they want to be. As "they cannot *not* be a group", individual youth are not able to exit the group, and thus struggles for group consensus could heighten (p. 373). As a result, small school size may be a risk factor for aggression, bullying, and peer victimization during early adolescence when the number of peer groups would be particularly limited, but not necessarily before or after early adolescence. The present study tested this hypothesis, with a sample of 351 schools, by considering the relationship between school size and each of reciprocated aggression (fighting), peer

victimization (physical, verbal and relational), and beliefs regarding peers' acceptance of aggression, for Grades 7 through 12.

Grade Levels Contained within a School

It has been proposed that younger children, relative to older children within a given school, are more likely to be victimized because they have more children in their school who are older than they are (Olweus, 1991, 1994; Smith, Madsen, & Moody, 1999; Smith, Shu, & Madsen, 2001). In other words, it has been expected that as children move into higher grade levels within their school the likelihood that they will be victimized declines (Smith et al., 1999; Smith et al., 2001). "Implicit in this hypothesis is that older children are in an advantageous position to bully younger children, presumably because of their larger size and greater strength, or possibly because of their greater social skills in knowing how to bully" (Smith et al., 1999, p. 273). Thus, it has been argued that a youth's age or grade position in the larger peer hierarchy relates to the opportunity and costs of bullying (Smith et al., 1999). Consistent with this hypothesis, youth are rarely bullied by youth younger then themselves (Wolke et al., 2001). Further, Smith, Madsen, and Moody (1999), in their examination of data from Whitney and Smith (1993), found that as youth increased in grade level they were less likely to be victimized by older youth. Of note however, this did not fully account for the decline in levels of peer victimization with increasing grade level. Previous research has not made hypotheses about, nor considered, the relationships between grade level relative to other students and either reciprocated aggression or attitudes towards aggression.

The present study examined whether or not a youths' grade level relative to the grades contained within their school was a risk factor for reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and/or beliefs regarding peers' acceptance of aggression. The present study expanded on Smith, Madsen, and Moody's (1999) work by considering the number of grade levels above a youth contained within their school, while controlling for grade level. The methods of the present study were also unique in that youth were sampled from a number of schools

which differed as to the grade levels they contained, and thus for each grade level youth differed as to the number of grade levels above their own contained within their school. The present study also considered the relationship between the *total* number of grade levels in a given school and each of reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and beliefs regarding peers' acceptance of aggression, while controlling for grade level. Previous research had not considered or hypothesized about such relationships and no particular hypotheses were proposed.

Gender Differences

Although gender differences in aggression, bullying, and attitudes towards aggression are robust, there is less consensus regarding gender differences in peer victimization. Research has found boys to be more aggressive (Maccoby & Jackolin, 1980), more likely to bully others (Bentley & Li, 1995; Bosworth, Espelage, & Simon, 1999; Boulton & Underwood, 1992; Kumpulainen, Räsänen, Henttonen, Almqvist, Kresanov, Linna, et al., 1998; Olweus, 1993b, 1994; Wolke et al., 2001), more accepting of aggression and bullying (Pellegrini & Bartini, 2000a; Rigby, 1997), more likely to believe their peers will consider aggression clever (Rauste-von Wright, 1989), and less empathic of victims (Olweus & Endreson, 1998; Rigby, 1997) than girls. However, whereas much research regarding peer victimization has found boys to be more likely to be victimized than girls (Atlas & Pepler, 1998; Boulton & Underwood, 1992; Genta, Menesini, Fonzi, Constibile, & Smith, 1996; Kumpulainen et al., 1998; Olweus, 1993a, 1993b; Wolke et al., 2001), other research has found them to be less likely to be victimized than girls (Baldry, 1998), and still other research has not found gender differences in the experience of peer victimization (Bentley & Li, 1995; Swearer & Cary, 2003; Whitney & Smith, 1993). These mixed findings regarding gender differences in peer victimization may be the result of the differing ages considered in each of these studies. If one considers findings concerning gender differences in peer victimization by age and grade level, it appears that boys are more likely than girls to be victims of their peers in primary school, but not necessarily so in secondary school (see Wolke et al., 2001). Interestingly, research has found that as children begin to reliably label gender,

girls' level of aggression drops, while boys' level of aggression remains unchanged (Fagot, Leinbach, & Hagan, 1986).

The research described above has primarily considered physical and/or verbal forms of aggression, bullying, and peer victimization. It has been argued that such forms of aggression are more typical for boys than girls (see Crick, Nelson, Morales, Cullerton-Sen, Casas & Hickman, 2001). Consistent with this argument, Crick and Bigbee (1998) found that when they only considered physical forms of victimization, approximately 70% of victimized girls were considered non-victims, whereas only 15 percent of victimized boys were considered non-victims. In other words, the proportion of girls who were only victimized relationally was higher than the proportion of boys who were only victimized relationally (see also Crick, Nelson, Morales, Cullerton-Sen, & Hickman, 2001). Thus, it appears that girls are more likely than boys to rely exclusively on relational forms of aggression. Girls have also been found to perceive relational aggression more positively than boys (Crick & Werner, 1998). However, Underwood (2002) has warned that, "although it is likely true that girls engage in relational aggression more than physical aggression, it does not necessarily follow that girls engage in more relational aggression than boys do." (p. 542). Reviews of the literature (Crick et al., 2001; Merrell, Buchanan, & Tran, 2006) have concluded that findings as to whether or not overall rates of relational victimization are higher for girls than boys are mixed, and that girls and boys may in fact engage in comparable amounts of relational aggression. The possibility of developmental differences, with gender differences prevalent only for specific age groups, has been proposed as one possible explanation for the mixed findings of previous research (Crick et al., 2001; Merrell et al., 2006). The present study considered the relationship between grade level, for Grades 7 through 12, and relational peer victimization. The present study also considered the relationship between gender and each of reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and beliefs regarding peers' acceptance of aggression. Of particular interest was whether or not any gender differences found were consistent across grade levels.

Age and Grade Level

Consideration of age and grade level in studies of aggression is crucial if one considers aggressive behaviors and attitudes to be influenced by developmental phenomena. Previous research, which has considered age and grade level, has typically found age and grade level differences for each of aggression, bullying, peer victimization, and attitudes towards aggression. Although this research is sometimes inconsistent, there is a general trend for the prevalence of each to decline from early childhood through adolescence and into early adulthood. However, some research shows a brief slowing in the decline, a plateau, or a rise in aggressive behaviours and attitudes in pre- and/or early adolescence, before it resumes the downward trend. Interestingly, the different forms of aggression, bullying, and peer victimization have shown different patterns of prevalence across age and grade level.

Aggression

Researchers considering age and grade level differences in aggression have found differences in both the prevalence and expression of aggression across ages and grade levels. Interestingly, the different forms of aggression (physical, verbal, and relational) have been found to have different patterns of prevalence across age and grade level. Physical aggression has been found to be quite common in toddlers and preschool children, declining during preschool and the early school years, with girls showing an earlier decline than boys (see Coie & Dodge, 1998, for a review). Verbal aggression has been found to increase during the early school years in parallel with the development of language skills (Björkqvist, Österman, & Kaukiainen, 1992). Relational aggression has been found to be most common during preadolescence, a time when the peer group becomes increasingly more complex (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Björkqvist, Österman, & Kaukiainen, 1992). To summarize, aggression is primarily physical in nature in early childhood, verbal aggression becomes increasing more common in middle childhood, and relational aggression becomes increasingly more common in adolescence.

Developmental phenomena have been used to explain findings that physical, verbal, and relational forms of aggression increase and decrease during different developmental periods. Several reasons for the decline in physical aggression during preschool and early childhood have been proposed. These include an increasing ability to delay gratification, greater emotional regulation, increased ability to use verbal skills to communicate needs, increased stability in dominance hierarchies regulating social interactions, and peers communicating disapproval of aggression (see Björkqvist, Österman, & Kaukiainen, 1992; Underwood, 2002). The increase in verbal aggression during the early school years has been explained by increases in the sophistication of children's language skills, as well as children's greater attempts to avoid adult punishment (Bjorkvist, 1994; Björkqvist, Österman, & Kaukiainen, 1992). Increases in the use of relationally aggressive strategies during early adolescence have been considered the result of developments in social skill/intelligence and increasingly sophisticated attempts to avoid retaliation (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Björkqvist, Österman, & Kaukiainen, 1992; Crick, Werner, et al., 1999). In addition to these developmental patterns, there appears to be a trend for aggression, in each of the forms, to peak in early adolescence (Björkqvist, Österman, & Kaukiainen, 1992). It has been argued that this increased use of aggressive strategies in the various forms at this time is due to the particular importance attached to peer relationships, and the onset of puberty, associated with this period of development (Björkqvist, Österman, & Kaukiainen, 1992). Others have argued that, in spite of variations in the prevalence of the different forms of aggression across age and grade level, the overall pattern of aggression, disregarding the various forms it may take, remains relatively consistent (Coie & Dodge, 1998; Olweus, 1979), while others have argued that it declines with age (Smith et al., 1999).

Bullying

Researchers considering age and grade level differences in the prevalence of bullying have found somewhat conflicting results. Whereas some research has shown declines over the school years (Bentley & Li, 1995; Rigby & Slee, 1991), other research

has found either no or modest decreases in bullying with age (Olweus, 1993a, 1993b; Rigby, 2002; Rigby & Slee, 1993; Whitney & Smith, 1993). However, there is greater consensus when the specific age and grade levels of the youth considered in each study's sample is taken into consideration. When studies are considered for each of childhood, preadolescence, and early adolescence separately, consistent age and grade level differences are found in regards to bullying. These findings suggest an overall decline in bullying as children grow older, with an increase or plateau during preadolescence (Baldry, 1998; Bentley & Li, 1995; Björkqvist, Lagerspetz, & Kaukiainen, 1992; Boulton & Underwood, 1992) and early adolescence (Olweus, 1991, 1994; Rigby, 1997; Whitney & Smith, 1993). Consistent with findings regarding the relative pattern of each of the forms of aggression across age and grade level, physical bullying has been found to decline with age, verbal bullying to remain stable, and relational aggression to increase during pre- and early adolescence (Genta et al., 1996).

Peer Victimization

As summarized by Smith, Madsen and Moody (1999), survey research has primarily shown a steady decline in peer victimization from the age of 8 through 16 years, for both boys and girls (in their review of Olweus, 1993a; O'Moore, Kirkham, & Smith, 1997; Rigby, 1996, 1997; Whitney & Smith, 1993). Although the magnitude of the decline differs between countries the trend appears to be consistent. Other researchers who have conducted larger (e.g., Olweus, 1991, 1994) and smaller (e.g., Bentley & Li, 1995; Boulton & Underwood, 1992; Genta et al., 1996; Perry et al., 1988; Smith et al., 2001) scale studies have also found declines in peer victimization from childhood through to adolescence. Although this trend for peer victimization to consistently decline with increasing age and grade level contrasts with findings relating to aggression and bullying, there are some studies that have shown greater consistency with findings relating to aggression and bullying. For example, some studies have found a less steep decline (Olweus, 1993b), plateaus (Craig, Pepler, Connolly & Henderson, 2001; Perry et al., 1988, for verbal forms of peer victimization; Rigby, 1997), or increases in peer victimization during early adolescence (Baldry, 1998; Rigby & Slee, 1991; Van

Blyderveen, 2003). When the different forms of peer victimization are considered separately, physical, verbal, and relational forms of peer victimization have been found to decline from elementary to secondary school (Rivers & Smith, 1994).

Attitudes Regarding Aggression

Previous research has found age and grade level differences in attitudes regarding aggression. In particular, research has shown younger children and older adolescents to have more negative views of aggression than early adolescent youth (Cairns & Cairns, 1986; Rigby, 1997; Rigby & Slee, 1991; Swearer & Cary, 2003). In a consideration of previous research, Pellegrini (2002b) concluded that children are also less likely to accept and affiliate with aggressive peers, and more likely to reject them, than early adolescent youth. Further, early adolescent bullies are often leaders (Pellegrini, Bartini, & Brooks, 1999), or central members of their peer groups (Cairns, Cairns, Neckerman, Gest, & Gariepy, 1988). In fact, perceived popularity has been positively associated with aggression during adolescence (Graham & Juvonen, 1998; Rose, Swenson, & Waller, 2004).

Research has also found youths' degree of sympathy for the victims of aggression to vary depending on their age and grade level. Children's feelings towards the victims of peer aggression become less sympathetic with age, from the ages 8 through 15 years (Rigby, 1997; Rigby & Slee, 1991), after which sympathy appears to increase (Rigby, 1997). In a review of the literature, Graham and Juvonen (1998) also concluded that victims are often disliked by their peers.

Limitations of Age and Grade Level Research

There are a number of difficulties in comparing and interpreting the findings of the studies detailed above regarding age and grade level differences in the prevalence of aggression, bullying, peer victimization, and attitudes towards aggression. These studies differ from one another in their definitions of constructs, in the measures used (e.g., single versus multiple item measures), in their categorization of bullies and victims

(e.g., using different frequencies of behaviours for categorization), in regards to the countries in which they were conducted (e.g., Australia, Canada, U.K., U.S.A.), and in regards to the school systems and structure from which their samples were drawn (e.g., type of school, school size). These studies have also either considered different forms of bullying and peer victimization, or have collapsed across these forms, again making comparisons between studies difficult. Similarly, some studies have considered each age and grade level separately, while other studies have collapsed across various ages and grade levels. Further complicating matters, many of the above studies are descriptive in nature and have not made use of formal tests of significance.

Age and Grade Level Summary

The present study considered the relationship between grade level (Grades 7 through 12) and each of reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and perceived attitudes of peer regarding aggression. The present study expanded on past research in that it considered each form of peer victimization separately, included a consideration of older adolescents, and made use of formal tests of significance. Of particular interest was whether or not the prevalence of reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and perceived positive attitudes of peers regarding aggression was highest in early adolescence.

The Present Study

The present study considered the following:

1. Are school transitions, and/or the number of previous school transitions a youth has experienced, associated with greater levels of reciprocated aggression (fighting), peer victimization, and/or beliefs regarding peers' acceptance of aggression? Are any effects found accounted for by the number of school transitions, type of school, type of middle school, school size, the number of grade levels contained within a school, the number of grade levels contained within a school above the youth's grade level, gender, and/or grade level?

2. Is the type of school, or type of middle school, a youth attends associated with different levels of reciprocated aggression (fighting), peer victimization, and/or beliefs regarding peers' acceptance of aggression? Are any effects found accounted for by school size, the number of grade levels contained within a school, the number of grade levels contained within a school above the youth's grade level, gender, and/or grade level?

3. Is school size associated with reciprocated aggression (fighting), peer victimization, and/or beliefs regarding peers' acceptance of aggression? Does this depend on the grade level considered?

4. Is the number of grade levels contained within a school, or the number of grade levels contained within a school above youths' grade level, associated with reciprocated aggression (fighting), peer victimization, and/or beliefs regarding peers' acceptance of aggression? Does this depend on the grade level considered?

5. Are there gender differences for each of reciprocated aggression (fighting), peer victimization (physical, verbal and relational forms), and beliefs regarding peers' acceptance of aggression?

6. Are there grade level differences for each of reciprocated aggression (fighting), peer victimization (physical, verbal and relational forms), and beliefs regarding peers' acceptance of aggression? Is the prevalence of each highest in early adolescence? Do prevalence rates differ across grade levels depending on the form of peer victimization (physical, verbal, relational) or gender considered?

METHODS

Participants

A subsample of youth was drawn from those who completed the British Columbia Adolescent Health Survey (BC AHS) of 2003 conducted by the McCreary Centre Society. A total of 30,884 students, who were in Grades 7 through 12, from both public and independent schools in British Columbia, completed the BC AHS of 2003. Students completed the BC AHS (2003) during one class period while at school in the spring of 2003. Classrooms were sampled to be representative of all students enrolled in that grade level both across the province and within their Health Service Delivery Area within the province. A total of 45 of the 59 school districts allowed the survey to be conducted in their schools, representing 72% of all students in Grades 7 through 12 in British Columbia. Within these school districts a total of 1,557 classrooms, from 441 schools, were included in the sample. The overall participation rate for participating school districts was 76%, while 1% of youth refused to participate, 2% of parents refused to give their consent, 12% of youth were absent, 1% of youth provided incomplete responses, 7% had not obtained parental consent, and 1% did not participate due to other reasons. Participation rates were higher in school districts that required passive consent (84% participation rate) than school districts that required active consent (58% participation rate).

From this larger sample, a subsample of 22,596 students for whom transition sequences were determinable were selected for consideration in the present study (see below for further details). The students in this subsample represented 523 classrooms, within 351 schools, within 43 school districts. The number of males and females included in this subsample of youth considered in the present study, at each grade level, are indicated in Table 1.

Table 1. Number of Participants by Gender and Grade Level

Gender/Grade Level	7	8	9	10	11	12	Total
Males	2,676	1,806	1,804	1,754	1,630	1,611	11,281
Females	2,694	1,899	1,786	1,720	1,625	1,591	11,315
Total	5,370	3,705	3,590	3,474	3,255	3,202	22,596

When the demographic variables of schools which were included in this subsample were compared to the schools excluded from the present subsample due to difficulties determining transition sequences, it was noted that schools included in the present subsample tended to have lower overall enrollment ($\overline{X}$ = 508, range 77 to 2337), fewer students for whom English was a second language ($\overline{X}$ =40, range 0 to 535), and fewer aboriginal students enrolled ($\overline{X}$ =40, range 0 to 238), than schools excluded from the present subsample ($\overline{X}$ =827, range 101 to 2018; $\overline{X}$ =45, range 0 to 366; $\overline{X}$ =52, range 0 to 374, respectively). However, these differences did not appear to be substantial. The proportion of homes within the school catchement area whose incomes were less than $30,000 was similar for schools included (23.72 percent, range 0 to 89) and excluded (21.41 percent, range 4 to 63) from the present subsample. Given that the differences found between schools included in, and excluded from, the present subsample were not substantial, it is reasonable to conclude that the schools included in the present subsample are representative of schools in British Columbia.

The Adolescent Health Survey

The BC AHS of 2003 was conducted by the McCreary Centre Society, a non-profit organization dedicated to improving youth health in British Columbia through research and community based projects. The BC AHS (2003) was a 130-question pencil and paper survey assessing health and risk behaviours. Questions for the BC AHS (2003) were largely taken from existing youth health surveys. Additional questions developed by the McCreary Centre Society were evaluated in focus groups with students and/or pilot tested prior to inclusion in the BC AHS of 2003. The BC AHS (2003) was administered to students by Public Health Nurses from each of the Provincial

Health Regions in the spring of 2003. Students were asked to answer the questions as honestly and accurately as possible. Participation was voluntary and students were informed that their responses would remain anonymous.

The particular questions selected for the purposes of the present study are detailed below (also see Appendix B) and are similar to items contained in other measures of aggression (see Appendix C, also see Appendix D for a review of the measurement of aggression). In some cases, multiple questions existed relating to a single variable. In order to determine whether or not compositing such questions was statistically justifiable, the dimensionality of these questions was tested. Evidence of convergent validity was also demonstrated.

Gender

Students were asked to indicate their gender as either "male" or "female".

Age

Students were asked to indicate their age. Response options included "12 years old or younger", "13 years old", "14 years old", "15 years old", "16 years old", "17 years old", "18 years old", and "19 years old or older".

Grade Level

Students were asked to indicate their grade level. Response options ranged from Grade 7 through 12.

Reciprocated Aggression

Youth were asked to indicate the number of physical fights in which they had become involved during the previous year. Response options included "0 times", "1 time", "2 or 3 times", and "4 or more times". This question was modified from the Youth

Risk Behavior Surveillance Survey (National Center for Chronic Disease Prevention and Health Promotion [CDC], 1990).

Peer Victimization

Three questions asked youth about their experiences of peer victimization within the previous school year. The first question assessed physical peer victimization, asking youth to indicate how often another youth had physically attacked or assaulted them. The second question assessed verbal peer victimization. Youth were asked how often another youth had teased them or said something personal about them that made them feel bad or extremely uncomfortable. The third question assessed relational peer victimization. Youth were asked to indicate how often another youth had kept them out of things on purpose, excluded them from their group of friends, or ignored them. Response options included "never", "once", and "2 or more times". These questions were modified from the National Longitudinal Survey of Children and Youth (Statistics Canada and Human Resources Development Canada [Statistics Canada and HRDC], 1994).

Given that previous research has found gender differences in regards to the different forms of peer victimization (Crick & Bigbee, 1998; Crick et al., 2001), and that previous research indicates that the forms of peer victimization are independently related, and contribute differently, to various forms of social and psychological maladjustment (e.g., Crick, 1995; Crick & Bigbee, 1998; Hawker & Boulton, 2001; Sullivan et al., 2006), it is likely that each form of peer victimization represents a unique construct. It is thus important to consider each form of peer victimization individually. Given these findings, each form of peer victimization was considered separately in the present study. However, each form of peer victimization is also related to each of the other forms, as they are each variations of peer victimization more generally. One could argue that compositing such items yields information regarding a *propensity* to be victimized *across* these forms. Thus, a consideration of a composite score of the three forms of victimization is also relevant, as such a composite likely represents an underlying construct – a propensity to be victimized.

Although one can theoretically argue that compositing items across forms to generate a composite score is valid, one must also establish whether items are unidimensional, measuring a common single attribute. Testing the unidimensionality of items through the use of factor analysis (if applicable) allows one to determine if one's items are each measuring the same thing, and thus allows one to determine whether the items can be meaningfully composited to form a single score. Although previous research has demonstrated moderate to high correlations between physical and verbal peer victimization (Olweus, 1979; Perry et al., 1988; Van Blyderveen, 2003) and between overt and relational peer victimization (Crick, Casas, et al., 1999; Crick & Grotpeter, 1995, 1996; Olweus, 1994), not all research has explicitly tested, using statistical modeling, whether or not such items can justifiably be composited. Of the studies that have tested the unidimensionality of their items, some have found support for compositing these items, while others have not. Crick and Bigbee (1998) found, using factor analysis, that their overt and relational peer victimization items were not unidimensional. However, some measures which have contained physical and verbal peer victimization items (e.g., Little et al., 2003; Rigby & Slee, 1993) have been found to be unidimensional, and a measure which contained physical, verbal, and relational items has demonstrated reasonable reliability, although dimensionality was not tested (Kochenderfer & Ladd, 1997). As there were only three response options for each of the three peer victimization questions included in the present study, Samejima's (1969, 1996a, 1996b) graded response model was used to test whether or not responses to these items were unidimensional. However, results did not fit the unidimensional model (χ^2=217.3, p<.00, df=2). Given that chi-squares are particularly sensitive with larger samples, the Root Mean Square Error of Approximation (RMSEA) was considered. As RMSEA was found to be greater than .05, items were not composited into a single score.

It is of note that the response options to each of these questions was limited, and thus minimal information was provided regarding the frequency of each form of peer victimization. It was also questionable whether or not the distinction between being victimized once and being victimized more than once in the previous year was informative. Further, youth who endorsed the response option "two or more times" likely

represented a heterogeneous group, differing from one another a great deal. For example, a youth who was victimized twice in the past year and a youth who was victimized daily throughout the previous year would have both chosen this response option. Given the limited information regarding the frequency of victimization, and the heterogeneity among youth who endorsed the last response option, each of the peer victimization questions was recoded to reflect either the presence or absence of experiencing victimization (i.e., items were dichotomized), and a two-parameter logistic (2PL) model tested. Results of testing the 2PL model supported the unidimensional model (χ^2=5.7, p>.05, df=2, RMSEA=.01). The slope (a) and difficulty level (b) of each question were estimated (a=2.60 and b=0.45, a=1.80 and b=0.64, and a=1.23 and b=2.22, for each of physical, verbal, and relational peer victimization respectively), and the slope was used to weight each question. The resulting composite score is believed to reflect a propensity to be victimized by one's peers. The marginal reliability for the weighted peer victimization composite score, which will be referred to as peer victimization propensity, was .5097 (n=22,017). Both the individual dichotomized peer victimization questions and the composite score were used for the purposes of data analyses.

Although not of direct relevance to the present study's hypotheses, youth who indicated that they had been victimized were coded as to whether or not they had only experienced victimization once, or more than once, in the previous year. When sample size permitted, these two groups were compared in order to determine if the two groups were distinct from one another. These variables are referred to as physical peer victimization frequency, verbal peer victimization frequency, and relational peer victimization frequency. Results of all analyses conducted involving peer victimization frequency variables are detailed in Appendix E.

Perceived Attitudes of Peers Regarding Aggression

Youth were asked to indicate whether or not they believed that their friends would become upset with them if they were to "beat someone up". This question was

modified from the Urban Indian Youth Health Survey (University of Minnesota School of Nursing, 1996).

Convergent Validity

Evidence of convergent validity for each of the items assessing reciprocated aggression, physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding aggression, as well as the peer victimization propensity composite score, was obtained. Each form of peer victimization was associated with each of the other forms of peer victimization (see Appendix F). This is consistent with past literature that has found physical and verbal forms to be highly correlated (Olweus, 1979; Perry et al., 1988; Van Blyderveen, 2003), and relational and overt forms to be moderately correlated (Crick, Casas, et al., 1999; Crick & Grotpeter, 1995, 1996; Olweus, 1994). Further, the measures of peer victimization propensity and each form of peer victimization were associated with indicators of anxiety, such as experiences of stress and nervousness, and depression, such as experiences of sadness and suicidal ideation (see Appendix F). This is consistent with past literature, which has found peer victimization to be associated with depression (see Hawker & Boutlon, 2000, for a review), anxiety (see Hawker & Boutlon, 2000, for a review), and suicidal ideation (Rigby & Slee, 1999; Van Blyderveen, 2003). Reciprocated aggression and perceived attitudes of peers regarding aggression were also associated with one another (see Appendix F). This is consistent with research that has found aggression to be related to the belief that aggression is valued by peers (Rauste-von Wright, 1989).

School Structure

The BC AHS of 2003 contained little information regarding the school structure variables under consideration in the present study. The information that was available included the school and classroom from which each student was sampled, as well as student self-reported grade level. Based on this information, and information available to the public relevant to the 2002-2003 school year, the remaining school structure

variables were derived. School related information was obtained either by contacting the schools directly or through a review of provincial internet pages. Information obtained included school enrollment numbers, the grade levels physically contained within each school, the names of schools which their students previously attended (feeder schools), and the names of schools their students would attend when they graduated from their school (schools for which they served as a feeder school). Based on this information, a number of the school structure variables were determined.

This school related information was first used to compile a list of possible transition sequences. A transition sequence refers to the grade related sequence of schools youth attended in order to complete their schooling. The transition sequence indicates at which grade levels youth physically changed schools due to completing the grade levels contained within each school. Thirteen possible transition sequences were identifiable among the youth who completed the BC AHS of 2003 (see Table 2). The most common transition sequence reflected attendance at an elementary school for Kindergarten through Grade 7 followed by attendance at a secondary school for Grades 8 through 12. Based on this transition sequence information, each school was coded as to which of the 13 transition sequences it belonged. This code was also applied to the students who were attending each of these schools when they completed the BC AHS of 2003. Due to the great variability in transition sequences within some school districts, resulting in youth in the same school having different transition sequences, it was not always possible to determine a youth's transition sequence. As mentioned previously, youth for whom transition sequences were indeterminable were coded as such and excluded from further analyses. School transition sequence information was further used to determine the remaining school structure variables under consideration in the present study.

Table 2. School Transition Sequences and the GradeLevels Contained within Each School

Transition Sequence	First School	Second School	Third School
1	Kindergarten through Grade 7	Grades 8 through 12	
2	Kindergarten through Grade 7	Grades 8 through 10	Grades 11 and 12
3	Kindergarten through Grade 7	Grades 8 and 9	Grades 10 through 12
4	Kindergarten through Grade 6	Grades 7 through 12	
5	Kindergarten through Grade 6	Grades 7 through 9	Grades 10 through 12
6	Kindergarten through Grade 6	Grades 7 and 8	Grades 9 through 12
7	Kindergarten through Grade 5	Grades 6 through 12	
8	Kindergarten through Grade 5	Grades 6 through 8	Grades 9 through 12
9	Kindergarten through Grade 5	Grades 6 and 7	Grades 8 through 12
10	Kindergarten through Grade 4	Grades 5 through 12	
11	Kindergarten through Grade 8	Unknown	
12	Kindergarten through Grade 10	Unknown	
13	Kindergarten through Grade 3	Grades 4 through 7	Unknown

School structure variables relevant for each youth were derived from this school and transition sequence information, as detailed below.

School Transition Status

Each youth's transition status was derived from their transition sequence information. Each youth was coded as to whether or not they were in a transition year, that is, the year following a school transition. Table 3 indicates the number of youth who were and were not in a grade level directly following a school transition, for each gender and at each grade level. The grade level for which the highest proportion of youth were in a transition year was Grade 8, which is consistent with the predominant transition sequence.

Table 3. ***Number of Participants for Each Transition Status by Gender and Grade Level***

Transition Status	Gender	Grade Level						Total
		7	8	9	10	11	12	
Not in Transition Year	Male	2,279	617	1,586	1,537	1,551	1,611	9,181
	Female	2,286	659	1,557	1,504	1,526	1,591	9,123
	Total	4,565	1,276	3,143	3,041	3,077	3,202	18,304
In Transition Year	Male	397	1,189	218	217	79		2,100
	Female	408	1,240	229	216	99		2,192
	Total	805	2,429	447	433	178		4,292

Number of School Transitions

Based on their transition sequence information, youth were categorized as to the cumulative number of school transitions they had experienced. Table 4 indicates the number of youth, for each gender and at each grade level, who had not experienced a school transition, who had transitioned once, and who had transitioned twice. Almost all youth had experienced at least one school transition by their Grade 8 year, consistent with the predominant school transition sequence. It was not until Grade 9 that any students had experienced more than one school transition.

Table 4. ***Number of Participants for Each Number of Transitions by Gender and Grade Level***

Number of Transitions	Gender	Grade Level						Total
		7	8	9	10	11	12	
Never Transitioned	Male	1,942	5	1				1,948
	Female	1,923	7	5	1			1,936
	Total	3,865	12	6	1			3,784
Transitioned Once	Male	734	1,801	1,585	1,301	1,043	1,029	7,493
	Female	771	1,892	1,552	1,279	1,009	1,028	7,531
	Total	1,505	3,692	3,137	2,580	2,052	2,057	15,024
Transitioned Twice	Male			218	453	587	582	1,840
	Female			229	440	616	563	1,851
	Total			447	893	1,203	1,145	3,691

Type of School

Youth were categorized as to the type of school they were attending based on both the grade levels physically contained within their school and their school transition sequence information. School type categories included elementary school, middle school, secondary school, and post-middle school. Elementary schools were defined as including the primary grades and possibly the middle/intermediate grades. Middle schools were defined as containing the middle/intermediate grades, while containing neither the lowest possible grade level, Kindergarten, nor the highest possible grade level, Grade 12. Secondary schools were defined as containing the senior grades. Youths' school type was coded as post-middle school if they were attending a secondary school at the time they completed the BC AHS of 2003 but had previously attended a middle school. The post-middle school category was thus used to differentiate secondary school students who had attended middle school prior to attending secondary school from those who had not. Table 5 indicates the number of youth, for each gender and at each grade level, who were attending each school type. The majority of youth in the present sample were attending secondary school.

Table 5. Number of Participants for Each Type of School by Gender and Grade Level

Type of School	Gender	Grade Level						Total
		7	8	9	10	11	12	
Elementary School	Males	1,942	5	1				1,948
	Females	1,923	7	5	1			1,936
	Total	3,865	12	6	1			3,884
Middle School	Males	714	743	378	203			2,038
	Females	742	808	400	147			2,097
	Total	1,456	1,551	778	350			4,135
Secondary School	Males	20	1,058	1,207	1,098	1,043	1,029	5,455
	Females	29	1,084	1,152	1,132	1,009	1,028	5,434
	Total	49	2,142	2,359	2,230	2,052	2,057	10,889
Post Middle School	Males			218	453	587	582	1,840
	Females			229	440	616	563	1,848
	Total			447	893	1,203	1,145	3,688

Middle School Type

Youth who were attending middle school were categorized as to the type of middle school they were attending, defined by the grade levels contained within their middle school. Table 6 indicates the number of youth who were attending each type of middle school, for each gender and at each grade level. The present sample contained a total of seven middle school types. Listed from the most to the least common middle school type, among youth included in the present sample, the middle schools contained Grades 7 through 9, 6 through 8, 8 through 10, 7 through 8, 4 through 7, 8 through 9, and 6 though 7.

Table 6. Number of Participants for Each Type of Middle School by Gender and Grade Level

Middle School Type	Gender	Grade Level						Total
		7	8	9	10	11	12	
Grades 8 through 10	Male		135	165	203			503
	Female		159	170	147			476
	Total		294	335	350			979
Grades 8 through 9	Male		12	14				26
	Female		15	20				35
	Total		17	34				61
Grades 7 through 9	Male	226	209	199				634
	Female	245	268	210				723
	Total	471	477	409				1,357
Grades 7 through 8	Male	151	129					280
	Female	134	116					250
	Total	285	245					530
Grades 6 through 8	Male	282	258					540
	Female	303	250					553
	Total	585	508					1,093
Grades 6 through 7	Male	8						8
	Female	11						11
	Total	19						19
Grades 4 through 7	Male	47						47
	Female	49						49
	Total	96						96

School Size

School enrollment for the 2002-2003 school year was used as an indicator of school size. The number of students enrolled in each school ranged from 79 to 2,334. School size was recoded into five equal groups, each containing approximately 20% of the youth included in the present sample. These groups were labeled 'very small' for schools ranging in size from 79 through 376 students, 'small' for schools ranging in size from 377 through 621 students, 'medium' for schools ranging in size from 622 through 838 students, 'large' for schools ranging in size from 839 through 1,100 students, and 'very large' for schools ranging in size from 1,100 through 2,334 students. Table 7 indicates the number of students at each grade level attending schools belonging to each of the five school size categories, for each gender and at each grade level.

Table 7. Number of Participants for Each School Size by Gender and Grade Level

School Size	Gender	Grade Level						Total
		7	8	9	10	11	12	
Very Small	Male	1,469	136	159	114	86	91	2,055
	Female	1,491	146	185	132	110	113	2,177
	Total	2,960	282	344	246	196	204	4,232
Small	Male	814	477	329	312	153	128	2,213
	Female	768	491	331	271	141	179	2,181
	Total	1,582	968	660	583	294	307	4,394
Medium	Male	179	360	354	283	384	416	1,976
	Female	215	443	430	330	393	412	2,223
	Total	394	803	784	613	777	828	4,199
Large	Male	31	356	473	483	472	486	2,301
	Female	42	369	349	420	462	398	2,040
	Total	73	725	822	903	934	884	4,341
Very Large	Male	1	285	410	491	476	449	2,112
	Female		263	391	494	455	442	2,045
	Total	1	548	801	985	931	891	4,157

Table 8 indicates the number of youth attending schools belonging to each school type, for each school size and at each grade level.

Table 8. Number of Participants for Each School Type by School Size and Grade Level

School Type	School Size	Grade Level						Total
		7	8	9	10	11	12	
Elementary School	Very Small	2,686	12	6	1			2,705
	Small	1,066						1,066
	Medium	24						24
	Large	33						33
	Very Large	1						1
Secondary School	Very Small	49	176	275	245	177	204	1,126
	Small		218	159	197	145	160	879
	Medium		439	490	421	380	474	2,204
	Large		712	664	604	599	576	3,155
	Very Large		548	733	700	628	555	3,164
Middle School	Very Small	225	94	16				335
	Small	516	750	376	234	516	750	3,142
	Medium	370	364	237	35	370	364	1,740
	Large	40	13	28				81
	Very Large							
After Middle School	Very Small			47		19		66
	Small			125	152	149	147	573
	Medium			57	157	397	354	965
	Large			130	299	335	308	1,072
	Very Large			68	285	303	336	992

As can be seen in Tables 7 and 8, school size is confounded with other variables such as grade level and school type. This was a result of using the overall sample to generate the school size categories. Thus, the full range of school size categories are not necessarily represented at each grade level and/or school type. This was problematic for analyses considering school size by grade level, particularly when

considering Grade 7 alone. Given that assumptions of orthogonality and balanced design were not met when considering Grade 7 alone, a second school size variable was generated for Grade 7 students only. Again, school enrollment was used as an indicator of school size. Youth were coded as belonging to one of five equal groups, each containing approximately 20% of Grade 7 youth. These were labeled 'very small' for schools ranging in size from 103 through 236 students, 'small' for schools ranging in size from 237 through 309 students, 'medium' for schools ranging in size from 310 through 376 students, 'large' for schools ranging in size from 378 through 473 students, and 'very large' for schools ranging in size from 475 through 1,677 students. Table 9 indicates the number of Grade 7 students attending schools belonging to each of the five school size categories, for each gender.

Table 9. ***Number of Participants for Each School Size by Gender for Grade Seven Youth Only***

School Size	Gender	Grade 7
Very Small	Male	489
	Female	525
	Total	1,014
Small	Male	527
	Female	484
	Total	1,011
Medium	Male	499
	Female	505
	Total	1,004
Large	Male	503
	Female	493
	Total	996
Very Large	Male	476
	Female	509
	Total	985

Number of Grade Levels within a School

The number of grade levels contained within each youth's school was derived from the youth's school transition sequence information. The number of grade levels contained within the schools ranged from two to 11. Table 10 indicates the number of youth, for each gender and at each grade level, who were attending schools containing

each of the possible numbers of grade levels. The majority of youth at each grade level, excluding Grade 7, were attending schools which contained a total of five grade levels. The majority of Grade 7 youth were attending schools which contained a total of eight grade levels. This is consistent with the predominant school transition sequence.

Table 10. Number of Participants for Each Number of Grade Levels within a School by Gender and Grade Level

Number of Grade Levels in Youth's School	Gender	Grade Level						Total
		7	8	9	10	11	12	
Two	Male	159	141	14		79	124	517
	Female	145	131	20		99	82	477
	Total	304	272	34		178	206	994
Three	Male	508	602	364	420	253	220	2,367
	Female	548	677	380	363	244	222	2,434
	Total	1,056	1,279	744	783	497	442	4,801
Four	Male	47		218	236	243	238	982
	Female	49		229	224	266	259	1,027
	Total	96		447	460	509	497	2,009
Five	Male		1,042	1,188	1,081	1,036	998	5,345
	Female		1,066	1,127	1,107	996	971	5,267
	Total		2,108	2,315	2,188	2,032	1,969	10,612
Six	Male	20	10	10	3	5	17	65
	Female	29	8	11	14	9	32	103
	Total	49	18	21	17	14	49	168
Seven	Male			9	14	14	8	45
	Female			14	11	11	12	48
	Total			23	25	25	20	93
Eight	Male	1,918	6				6	1,930
	Female	1,901	10				13	1,924
	Total	3,819	16				19	3,854
Nine	Male	17						17
	Female	10						10
	Total	27						27
Eleven	Male	7	5	1				13
	Female	12	7	5	1			25
	Total	19	12	6	1			38

Number of Grade Levels above Youths' Grade Level

The number of grade levels *above* each youth's grade level, contained within each youth's school, was also derived from their school transition sequence information. The number of grade levels *above* each youth's grade level, contained within each youth's school, ranged from zero through five. Table 11 indicates the number of youth, for each gender and at each grade level, who were attending schools containing each of the possible numbers of grade levels *above* a youth's grade level. The most prevalent categorization was to have zero grade levels above their grade level. This is consistent with the fact that the current sample included numerous youth who were nearing the completion of either elementary, middle, or secondary school.

Table 11. Number of Participants for Each Number of Grade Levels Above Youths' Grade Level by Gender and Grade Level

Number of Grades above Youth's Grade Level	Gender	Grade Level						Total
		7	8	9	10	11	12	
None	Male	1,973	387	213	203		1,611	4,387
	Female	1,961	366	230	148		1,591	4,296
	Total	3,934	753	443	351		3,202	8,683
1	Male	450	221	166		1,630		2,467
	Female	447	283	175		1,625		2,530
	Total	897	504	341		3,255		4,997
2	Male	226	140		1,551			1,917
	Female	245	166		1,572			1,983
	Total	471	306		3,123			3,900
3	Male	7		1,425				1,432
	Female	12		1,381				1,393
	Total	19		2,806				2,825
4	Male		1,058					1,058
	Female		1,084					1,084
	Total		2,142					2,142
5	Male	20						20
	Female	29						29
	Total	49						49

Data and Statistical Analyses

Of the 30,884 students who completed the BC AHS of 2003, a subsample of 22,596 students for whom transition sequences were determinable were included in the analyses of the present study. As a number of variables were considered in the present study, excluding youth who did not respond to one of the related questions would unnecessarily have resulted in a further reduced sample. Thus, for each given analysis those of the 22,596 youth who completed the necessary questions were included and those who did not were excluded for that given analysis alone. Thus, the sample size differed for analysis conducted.

As detailed previously, in order to determine whether the compositing of items was justifiable, the dimensionality of relevant items was tested. Descriptive statistics were produced for all variables included in the present study. Main effects were tested using Pearson's product moment correlations, Pearson's chi-square tests of independence, one-way analyses of variance (ANOVA), linear regression, and logistic regression, depending on the nature of both the predictor and outcome variables. Trend analyses were used to examine main effects of grade level. Linear and logistic regression were used to test higher order effects.

A significance level of .05 was used for all analyses. However, when the same analysis was conducted for each grade level separately, family wise error was set at .10 (e.g., a significance level of .014 was used when all six grade levels were considered, in addition to considering all grade levels combined). When grade levels were not considered separately, but the same analyses were run both for the genders combined and for each gender separately, family wise error was also set at .10 (e.g., a significance level of .033 was used for the analysis of both genders combined, for the analysis for males alone, and for the analysis of females alone). When analyses were conducted for both gender and grade level separately (e.g., seven analyses for grade level by three analyses for gender, yielding 21 separate analyses), a family was defined as containing the same analysis conducted for all possible grade levels (e.g., the 21 analyses

conducted when each gender by grade level combination were considered separately were divided into three families of seven analyses).

However, given the large sample size of the present study, it was expected that many of the results would likely yield statistical significance. Results of power analyses demonstrated sufficient power to detect small effect sizes (0.10) for the entire sample, each gender alone, each grade level alone, and each gender by grade level combination, at a significance level of .01. Power ranged from .92 to greater than .99. Therefore, in addition to significance levels, measures of the magnitude of effects were considered. Odds ratios were considered for chi-square analyses, effect sizes (Ω) were considered for ANOVAs, and R^2 was considered for correlations. When odds ratios were not available for chi-square analyses Cramer's Phi (Φ) was considered. Odds ratios greater than 1.100 and less than 0.909, Cramer's Phi greater than .010, effect sizes greater than .010, and R^2s greater than .010, were considered to be of practical significance. These cut-offs for practical significance were chosen in order to ensure consistency with past research. Previous peer victimization research which has considered effect sizes has typically considered effect sizes of .01 to indicate practical significance (see Hawker & Boulton, 2000). Although findings with such effect sizes may in actuality be of little practical importance, they are selected for consideration in order to ensure consistency with previous research, and to ensure that such findings were not prematurely disregarded prior to further consideration of their practical importance. Only results which were both statistically and practically significant are reported.

RESULTS

Consideration of the data involved four sequential steps. Descriptive statistics were first produced for all variables included in the present study. The relationships between each outcome variable and both gender and grade level were then considered. Third, main effects of each predictor variable were tested for each outcome variable. Finally, linear and logistic regression were used to test higher order effects, allowing for the consideration of moderating variables. Only results that were both statistically and practically significant are reported.

Descriptive Statistics

Outcome Variables

Mean scores for reciprocated aggression and peer victimization propensity, for each gender and at each grade level, are indicated in Table 12.

Table 12. Means for Outcome Variables by Gender and Grade Level

Variable	Gender	Grade Level						All Grade Levels
		7	8	9	10	11	12	
Reciprocated Aggression[a]	Males	1.76	1.65	1.62	1.56	1.52	1.50	1.62
	Females	1.31	1.34	1.34	1.29	1.22	1.16	1.28
	Both Genders	1.54	1.48	1.49	1.42	1.37	1.34	1.45
Peer Victimization Propensity[b]	Males	1.50	1.45	1.50	1.45	1.30	1.15	1.40
	Females	1.98	1.95	2.01	1.87	1.61	1.50	1.84
	Both Genders	1.75	1.71	1.76	1.66	1.45	1.32	1.62

Notes. [a] total n=22,064, male n=10,946, female n=11,118, scores ranged from 1 to 4;
[b] total n=22,017, male n=11,281, female n=11,315, scores ranged from 1.62 to 5.63.

Percentages of youth reporting having experienced each form of peer victimization, and who perceived their peers to be accepting of fighting, for each gender and at each grade level, are indicated in Table 13.

Table 13. Percentage of Youth Endorsing Each Dichotomous Outcome Variable by Gender and Grade Level

Variable	Gender	Grade Level						All Grade Levels
		7	8	9	10	11	12	
Physical Peer Victimization[a]	Males	15.6%	15.4%	15.3%	13.3%	11.7%	9.3%	13.7%
	Females	7.4%	7.2%	7.6%	6.9%	5.0%	3.9%	6.5%
	Both Genders	11.4%	11.2%	11.5%	10.1%	8.3%	6.6%	10.1%
Verbal Peer Victimization[b]	Males	31.5%	31.8%	33.4%	31.0%	28.8%	24.4%	30.4%
	Females	43.1%	43.0%	45.4%	41.2%	35.8%	30.8%	40.4%
	Both Genders	37.3%	37.6%	39.4%	36.1%	32.3%	27.6%	35.4%
Relational Peer Victimization[c]	Males	27.5%	24.2%	24.7%	26.5%	22.8%	22.3%	24.9%
	Females	43.0%	41.2%	40.7%	39.7%	34.2%	35.8%	39.5%
	Both Genders	35.3%	33.0%	32.7%	33.1%	28.5%	29.0%	32.3%
Perceived Attitudes of Peers[d]	Males	65.9%	73.1%	74.9%	70.6%	68.0%	64.1%	69.3%
	Females	37.6%	40.2%	44.8%	41.2%	41.4%	37.0%	40.2%
	Both Genders	51.6%	56.1%	59.9%	55.9%	54.7%	50.5%	54.6%

Notes. [a] total n=22,078, male n=10,947, female n=11,131;
[b] total n=22,104, male n=10,965, female n=11,139;
[c] total n=22,068, male n=10,944, female n=11,124;
[d] total n=21,878, male n=10,865, female n=11,013.

Gender

The relationship between gender and each outcome variable was considered using one-way ANOVAs and Pearson's chi-square tests of independence, for the whole sample and at each grade level. One-way ANOVAs were conducted for gender and both reciprocated aggression and peer victimization propensity. Pearson's chi-square tests of independence were calculated for gender and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Table 14 indicates effect sizes for ANOVAs and both chi-square values and odds ratios for Pearson's chi-square tests of independence. Percentages and means were presented in Tables 12 and 13, and thus will not be presented again. Results indicated that males were involved in more physical fights in the previous year, and believed their peers would be more accepting of such behaviours, than were females, when all grade levels were combined, and at each grade level. In regards to peer victimization, females had higher peer victimization propensity scores than males when all grade levels were combined, and when Grades 7 through 10 were considered. Females were also more likely than males to experience verbal and

relational peer victimization, when all grade levels were combined, and at each grade level. In contrast, males were more likely to report experiencing physical peer victimization than females, when all grade levels were combined, and at each grade level.

Table 14. ANOVA and Chi-Square Results for Gender by Each Outcome Variable by Grade Level

Outcome Variable	Grade Level						All Grade Levels
	7	8	9	10	11	12	
Reciprocated Aggression[a]	Ω=.066	Ω=.034	Ω=.026	Ω= .030	Ω=.042	Ω=.054	Ω=.042
Peer Victimization Propensity[a]	Ω=.015	Ω=.017	Ω=.017	Ω=.012	-	-	Ω=.013
Physical Peer Victimization[b]	OR=.435, CI=.363 to .521, χ^2=84.748	OR=.426, CI=.343 to .530, χ^2=61.296	OR=.459, CI=.369 to .571, χ^2=50.360	OR=.481, CI=.381 to .608, χ^2=38.873	OR=.395, CI=.301 to .519, χ^2=47.364	OR=.398, CI=.293 to .540, χ^2=37.018	OR=.438, CI=.399 to .481, χ^2=315.473
Verbal Peer Victimization[b]	OR=1.646, CI=1.469 to 1.844, χ^2=74.447	OR=1.619, CI=1.413 to 1.855, χ^2=48.440	OR=1.655, CI=1.444 to 1.898, χ^2=52.558	OR=1.558, CI=1.353 to 1.793, χ^2=38.232	OR=1.379, CI=1.189 to 1.600, χ^2=18.019	OR=1.380, CI=1.180 to 1.615, χ^2=16.333	OR=1.552, CI= 1.468 to 1.641, χ^2=241.325
Relational Peer Victimization[b]	OR=1.991, CI=1.773 to 2.237, χ^2=136.586	OR=2.197, CI= 1.904 to 2.536, χ^2=118.083	OR=2.088, CI=1.807 to 2.412, χ^2=101.513	OR=1.823, CI=1.577 to 2.107, χ^2=66.570	OR=1.764, CI=1.510 to 2.061, χ^2=51.568	OR=1.938, CI=1.657 to 2.267, χ^2=69.366	OR=1.968, CI=1.858 to 2.085, χ^2=537.716
Perceived Attitudes of Peers[b]	OR=.312, CI=.278 to .349, χ^2=409.453	OR=.248, CI=.215 to .286, χ^2=392.120	OR=.271, CI=.235 to .313, χ^2=329.050	OR=.291, CI=.252 to .336, χ^2=297.934	OR=.334, CI=.289 to .386, χ^2=226.002	OR=.329, CI=.284 to .380, χ^2=231.568	OR=.298, CI=.282 to .315, χ^2=1867.083

Notes. OR = Odds Ratio; CI = Confidence Interval;
df = 1 and p<.001 for all analyses;
[a] effect sizes for statistically and practically significant results only;
[b] χ^2 and odds ratios for statistically and practically significant effects only, males treated as referent group;
- neither statistically nor practically significant.

Grade Level

The relationship between grade level and each outcome variable was considered using one-way ANOVAs and logistic regression, for the whole sample and for each gender separately. In each case a non-linear relationship was predicted. One-way

ANOVAs were conducted for grade level and both reciprocated aggression and peer victimization propensity. Logistic regressions were conducted for grade level and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Most analyses were statistically significant, but few were practically significant. Table 15 indicates effect sizes for ANOVAs and both chi-square values and odds ratios for logistic regressions. Percentages and means are presented in Tables 12 and 13, and thus will not be presented again. Neither reciprocated aggression, nor the propensity to be victimized by peers, differed depending on the grade level considered, for the whole sample and when each gender was considered separately. The likelihood of experiencing physical peer victimization varied depending on the grade level considered, for the whole sample and when each gender was considered separately. In each case, as grade level increased, the likelihood of having experienced physical peer victimization declined. The likelihood of experiencing verbal or relational peer victimization, and the likelihood of perceiving peers to be accepting of fighting, did not differ depending on the grade level considered, for the whole sample and when each gender was considered separately.

Table 15. ANOVA and Logistic Regressions for Grade Level by Each Outcome Variable by Gender

Outcome Variable[a]	Gender		Both Genders
	Male	Female	
Reciprocated Aggression[b]	-	-	-
Peer Victimization Propensity[b]	-	-	-
Physical Peer Victimization[c]	OR=.902, CI=.873 to .931, χ^2=41.672	OR=.894, CI=.856 to .935, χ^2=25.065	OR=.902, CI=.879 to .925, χ^2=63.844
Verbal Peer Victimization[c]	-	-	-
Relational Peer Victimization[c]	-	-	-
Perceived Attitudes of Peers[c]	-	-	-

Notes. OR = Odds Ratio; CI = Confidence Interval;
[a] *df*'s=5 for all analyses;
[b] effect sizes for statistically and practically significant results only;
[c] χ^2 and odds ratios for statistically and practically significant effects only, Grade 7 treated as referent group;
- neither statistically nor practically significant.

In order to further explore the statistically and practically significant differences indicated in Table 15, Pearson's chi-square tests of independence were calculated to

compare each grade level with the grade level above for each dichotomous outcome variable (see Table 16).

Table 16. Comparisons between Adjacent Grade Levels for Each Outcome Variable by Gender

Outcome Variable	Gender	Grades				
		7 to 8	8 to 9	9 to 10	10 to 11	11 to 12
Physical Peer Victimization	Males	-	-	-	-	-
	Females	-	-	-	OR=.704, CI=.525 to .944, χ^2=5.552	-
	Both Genders	-	-	-	OR=.802, CI=.678 to .948, χ^2=6.693	OR=.784, CI=.649 to .946, χ^2=6.456
Verbal Peer Victimization	Males	-	-	-	-	OR=.798, CI=.681 to .934, χ^2=7.899
	Females	-	-	OR=.841, CI=.735 to .962, χ^2=6.340	OR=.797, CI=.693 to .917, χ^2=10.014	OR=.799, CI=.689 to .926, χ^2=8.941
	Both Genders	-	-	OR=.866, CI=.786 to .955, χ^2=8.367	OR=.847, CI=.765 to .938, χ^2=10.246	OR=.798, CI=.717 to .889, χ^2=16.962
Relational Peer Victimization	Males	OR=.841, CI=.731 to .967, χ^2=5.882	-	-	OR=.818, CI=.698 to .959, χ^2=6.169	-
	Females	-	-	-	OR=.792, CI=.687 to .912, χ^2=10.483	-
	Both Genders	-	-	-	OR=.808, CI=.728 to .897, χ^2=15.909	-
Percieved Attitudes of Peers	Males	OR=1.406, CI=1.230 to 1.608, χ^2=24.914	-	OR=.805, CI=.692 to .936, χ^2=7.987	-	-
	Females	-	OR=1.203, CI=1.053 to 1.373, χ^2=7.434	-	-	OR=.830, CI=.719 to .957, χ^2=6.584
	Both Genders	OR=1.199, CI=1.101 to 1.307, χ^2=17.266	OR=1.165, CI=1.060 to 1.281, χ^2=10.057	OR=.851, CI=.773 to .937, χ^2=10.840	-	OR=.847, CI=.767 to .935, χ^2=10.886

Notes. OR = Odds Ratio; CI = Confidence Interval;
χ^2 and odds ratios are presented for statistically and practically significant effects only, lower grade level treated as referent group;
- neither statistically nor practically significant.

As can be seen in Table 16, Grade 10 youth were more likely to be physically victimized than Grade 11 youth, who were in turn more likely to be physically victimized than Grade 12 youth, when genders were combined. In addition, Grade 10 females were more likely to be physically victimized by peers than Grade 11 females.

When verbal peer victimization was considered, Grade 9 youth were more likely to be verbally victimized than Grade 10 youth, Grade 10 youth were more likely to be verbally victimized than Grade 11 youth, and Grade 11 youth were more likely to be verbally victimized than Grade 12 youth, when genders were combined, and for females. For males, Grade 11 youth were more likely to be verbally victimized than Grade 12 youth.

In regards to relational victimization, Grade 10 youth were more likely to be victimized than Grade 11 youth, when genders were combined, for males only, and for females only. In addition, Grade 7 males were more likely to be relationally victimized than Grade 8 males.

When perceived attitudes of peers regarding fighting was considered, Grade 7 youth were less likely to perceive their peers to be accepting of aggression than Grade 8 youth, Grade 8 youth were less likely to perceive their peers to be accepting of aggression than Grade 9 youth, Grade 9 youth were more likely to perceive their peers to be accepting of aggression than Grade 10 youth, and Grade 11 youth were more likely to perceive their peers to be accepting of aggression than Grade 12 youth. When only males were considered, Grade 7 youth were less likely to perceive their peers to be accepting of aggression than Grade 8 youth, and Grade 9 youth were more likely to perceive their peers to be accepting of aggression than Grade 10 youth. When only females were considered, Grade 8 youth were less likely to perceive their peers to be accepting of aggression than Grade 9 youth, and Grade 11 youth were more likely to perceive their peers to be accepting of aggression than Grade 12 youth.

Trend analyses were also conducted for each dichotomous outcome variable. Both linear and quadratic models were tested using logistic regression. Although the linear and/or quadratic models were found to be significant for each of physical peer

victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding aggression, these linear and quadratic trends were subtle, and very few met the criteria for practical significance. In considering only results of statistical and practical significance, the pattern of physical peer victimization across grade levels fit a linear trend, when both genders were considered (OR=.902, CI=.879 to .925, $\chi 2$=63.844, p<.001), when only males were considered (OR=.902, CI=.873 to .931, $\chi 2$=41.672, p<.000), and when only females were considered (OR=.894, CI=.856 to .935, $\chi 2$=25.065, p<.001). Results also indicated that the pattern of verbal peer victimization across grade levels, for females, fit a linear trend (OR=.909, CI=.890 to .929, $\chi 2$=73.796). In each case, peer victimization appeared to decrease in frequency as grade level increased.

Gender by Grade Level

In order to determine whether there were gender differences in the pattern of reciprocated aggression and peer victimization propensity across grade levels, ANOVAs were conducted and the interaction term was considered. In each case the interaction term was not both statistically and practically significant. Logistic regression, with the gender by grade level interaction term entered prior to gender and grade level, was used to consider whether there were gender differences in the pattern of physical, verbal and relational peer victimization, as well as perceived attitudes of peers regarding fighting, across grade levels. In each case the interaction term was not both statistically and practically significant.

Main Effects

Only results that were both statistically and practically significant are reported below.

School Transition Status

The relationship between school transition status and each of reciprocated aggression and peer victimization propensity was examined using one-way ANOVAs. Pearson's chi-square tests of independence were conducted for school transition status and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. Grade 12 youth were excluded from grade level analyses as there were no Grade 12 youth in a transition year.

One-way ANOVAs indicated that school transition status was not associated with either reciprocated aggression or peer victimization propensity, regardless of gender or grade level.

A Pearson's chi-square test of independence indicated a relationship between school transition status and physical peer victimization, when the whole sample was considered (OR=1.17, CI=1.050 to 1.303, χ^2=8.156, p=.004). Youth who were in the year of a school transition were more likely to report experiencing physical peer victimization (11.2%) than youth not in a transition year (9.8%). When considering each gender separately, males in the year of a school transition were more likely to report experiencing physical peer victimization (15.8%) than youth not in a transition year (13.2%, OR=1.237, CI=1.081 to 1.414, χ^2=9.655, p=.002), but no differences were found between females who were and were not in a transition year. When each grade level was considered separately, and when each gender by grade level combination was considered, no differences were found in the experiencing of physical peer victimization.

Pearson's chi-square tests of independence indicated that school transition status was not associated with either verbal or relational peer victimization, regardless of gender or grade level.

Pearson's chi-square tests of independence indicated that school transition status was not associated with perceived attitudes of peers regarding fighting, when the whole sample was considered, and when each gender was considered, combining all grade levels. When each grade level was considered separately, combining genders, youth who were and were not in a transition year differed in their perceptions of their peers' attitudes regarding fighting for Grades 8, 9 and 11. Youth in Grades 8 and 9, who were not in a year of a school transition, were more likely to perceive their peers to be accepting of fighting (59.1% and 60.8%, for Grades 8 and 9, respectively) than youth who were in a transition year (54.6%, OR=.830, CI=.722 to .954, χ^2=6.877, p=.009, for Grade 8, and 53.1%, OR=.729, CI=.596 to .892, χ^2=9.453, p=.002, for Grade 9). Grade 11 youth who were not in a year of a school transition were less likely to perceive their peers to be accepting of fighting (54.1%) than youth who were in a transition year (64.2%, OR=1.520, CI=1.108 to 2.086, χ^2=6.820, p=.009). When each gender by grade level combination was considered separately, differences between transition status were found only for Grade 8 males and Grade 11 females. Grade 8 males who were not in a transition year were more likely to perceive their peers to be accepting of fighting (76.7%) than those who were in a transition year (71.2%, OR=.749, CI=.596 to .942, χ^2=6.108, p=.013). Grade 11 females who were not in a transition year were less likely to perceive their peers to be accepting of fighting (40.5%) than those who were in a transition year (55.1%, OR=1.799, CI=1.193 to 2.715, χ^2=8.029, p=.005).

Number of School Transitions

The relationship between the number of school transitions a youth had experienced and each of reciprocated aggression and peer victimization propensity was examined using one-way ANOVAs. Pearson's chi-square tests of independence were conducted for number of school transitions and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers

regarding fighting. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. Grade 8 youth were excluded from grade level analyses as all Grade 8 youth had experienced the same number of school transitions.

One-way ANOVAs indicated that the number of school transitions youth had experienced was not associated with either reciprocated aggression or peer victimization propensity, regardless of gender or grade level.

A Pearson's chi-square test of independence indicated a relationship between the number of school transitions a youth had experienced and the occurrence of physical peer victimization when the total sample was considered (χ^2=8.249, p=.016, Φ =.019). Youth who had never transitioned were more likely to have experienced physical peer victimization (11.0%), than youth who had transitioned once (10.1%), who were in turn more likely to have experienced physical peer victimization than youth who had transitioned twice (9.0%). For each gender, for each grade level, and for each gender by grade level combination, the number of school transitions was not associated with physical peer victimization.

A Pearson's chi-square test of independence indicated a relationship between the number of school transitions a youth had experienced and the occurrence of verbal peer victimization when the total sample was considered (χ^2=10.854, p=.004, Φ =.022). When the total sample was considered, youth who had never transitioned were more likely to have experienced verbal peer victimization (37.0%) than youth who had transitioned once (35.5%), who in turn were more likely to have experienced verbal peer victimization than youth who had transitioned twice (33.4%). When females of all grade levels were considered, the number of school transitions they experienced was associated with verbal peer victimization (χ^2=13.628, p=.001, Φ =.035). Females who had never transitioned were more likely to have experienced verbal peer victimization (43.7%), than youth who had transitioned once (40.1%), who were in turn more likely to have experienced verbal peer victimization than youth who had transitioned twice (37.9%). No differences were found in regards to verbal peer victimization when males in all grade levels combined were considered. When considering each grade level

separately, for the genders combined, no differences were found. Only one significant difference was found when each gender by grade level combination was considered. Grade 7 males who had never transitioned were less likely to have experienced verbal peer victimization (30.2%) than Grade 7 males who had transitioned once (35.1%, OR=1.253, CI=1.042 to 1.506, χ^2=5.759, p=.016).

A Pearson's chi-square test of independence indicated a relationship between the number of school transitions a youth had experienced and the occurrence of relational peer victimization, when the total sample was considered (χ^2=23.644, p<.001, Φ=.033). When the total sample was considered, youth who had never transitioned were more likely to have experienced relational peer victimization (35.6%), than youth who had transitioned once (31.9%), who in turn were more likely to have experienced victimization than youth who had transitioned twice (30.8%). This pattern was similar for both males (χ^2=12.635, p=.002, Φ=.034) and females (χ^2=12.566, p=.002, Φ=.034) when all grade levels were combined. For males, youth who had never transitioned were more likely to have experienced relational peer victimization (28.1%), than youth who had transitioned once (24.4%), who were in turn more likely to have experienced victimization than youth who had transitioned twice (23.8%). For females, youth who had never transitioned were more likely to have experienced relational peer victimization (43.0%), then youth who had transitioned once (39.2%), who were in turn more likely to have experienced victimization than youth who had transitioned twice (37.6%). When each grade level was considered while combining gender, and when each gender by grade level combination was considered separately, the number of school transitions was not associated with relational peer victimization.

A Pearson's chi-square test of independence indicated a relationship between the number of school transitions a youth had experienced and perceived attitudes of peers regarding aggression when the total sample was considered (χ^2=26.084, p<.001, Φ=.035). Youth who had never transitioned were less likely to believe their peers were accepting of fighting (51.2%) than youth who had transitioned once (55.7%) or twice (53.7%), with those who transitioned once perceiving their peers to be more accepting than those who had transitioned twice. This pattern was similar when considering males

in all grade levels combined (χ^2=27.814, p<.001, Φ =.051). Males who had never transitioned were less likely to believe their peers were accepting of fighting (64.4%) than youth who had transitioned once (70.7%) or twice (68.7%), with those who transitioned once perceiving their peers to be more accepting than those who had transitioned twice. No differences were found when females in all grades were combined. When each grade level was considered separately, combining the genders, only one difference was found. Grade 9 youth who had transitioned once perceived their peers to be more accepting of fighting (60.7%) than youth who had transitioned twice (53.1%, OR=.731, CI=.597 to .894, χ^2=9.339, p=.002). When each gender by grade level combination was considered, Grade 7 males who had never transitioned were less likely to perceive their peers to be accepting of fighting (64.3%) than Grade 7 youth who had transitioned once (69.9%, OR=1.289, CI=1.068 to 1.557, χ^2=7.001, p=.008).

Type of School

The relationship between school type and each of reciprocated aggression and peer victimization propensity was examined using one-way ANOVAs. Pearson's chi-square tests of independence were conducted for school type and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. Grade 7 youth in secondary school were excluded from analyses considering only Grade 7 youth, and youth in Grades 8, 9, and 10 in elementary schools were excluded from analyses considering only their grade level, due to small sample size.

One-way ANOVAs indicated that type of school was not associated with either reciprocated aggression or peer victimization propensity, regardless of gender or grade level.

A Pearson's chi-square test of independence indicated a relationship between type of school and physical peer victimization when the entire sample was considered (χ^2=45.918, p<.001, Φ =.046). Percentages of youth who reported having experienced

physical peer victimization were 11.0%, 12.6%, 9.1%, and 9.0% for youth in elementary school, middle school, secondary school, and post-middle school, respectively. School type was associated with physical peer victimization for males (χ^2=29.364, p<.001, Φ =.052) and for females (χ^2=19.065, p<.001, Φ =.041), when grade levels were combined. The proportion of males who reported experiencing physical peer victimization was 14.7%, 17.1%, 12.5%, and 12.5% for elementary school, middle school, secondary school, and post-middle school, respectively. The proportion of females who reported experiencing physical peer victimization was 7.3%, 8.3%, 5.8%, and 5.6% for females in elementary school, middle school, secondary school, and post-middle school, respectively. When each grade level, for the genders combined, and each gender by grade level combination were considered, school type was not associated with physical peer victimization.

A Pearson's chi-square test of independence indicated a relationship between type of school and verbal peer victimization when the entire sample was considered (χ^2=52.903, p<.001, Φ =.049). The percentage of youth who reported experiencing verbal peer victimization was 37.0% for elementary school, 39.7% for middle school, 33.9% for secondary school, and 33.4% for post-middle school. School type was associated with verbal peer victimization for males (χ^2=15.797, p=.001, Φ =.038) and for females (χ^2=43.018, p<.001, Φ =.062), when all grade levels were combined. The percentage of males who reported experiencing verbal peer victimization was 30.3% for elementary school, 34.0% for middle school, 29.6% for secondary school, and 28.7% for post-middle school. The percentage of females who reported experiencing verbal peer victimization was 43.7% for elementary school, 45.1% for middle school, 38.2% for secondary school, and 37.9% for post-middle school. When each grade level was considered separately, for the genders combined, school type was only associated with verbal peer victimization for Grade 8 youth. The percentage of Grade 8 youth in secondary school who reported verbal peer victimization (35.6%), was less than the percentage of youth in middle school who reported verbal peer victimization (43.0%, OR=1.218, CI=1.063 to 1.395, χ^2=8.040, p=.005, Φ =.048). When each gender by grade level combination was considered, the type of school was not associated with verbal peer victimization.

A Pearson's chi-square test of independence indicated a relationship between type of school and relational peer victimization when the entire sample was considered (χ^2=39.766, p<.001, Φ=.042). The percentages of youth who reported experiencing relational peer victimization were 35.6%, 34.4%, 30.9%, and 30.8% for youth in elementary school, middle school, secondary school, and post-middle school, respectively. School type was also associated with relational peer victimization for males (χ^2=14.930, p=.002, Φ=.037) and for females (χ^2=27.388, p<.001, Φ=.050), when all grade levels were combined. The percentages of males who reported experiencing relational peer victimization were 28.1%, 25.7%, 23.9%, and 23.8% for males in elementary school, middle school, secondary school, and post-middle school, respectively. The percentages of females who reported experiencing relational peer victimization were 43.0%, 42.7%, 37.8%, and 37.6% for elementary school, middle school, secondary school, and post-middle school, respectively. When each grade level was considered separately, for the genders combined, and when each gender by grade level combination was considered, school type was not associated with relational peer victimization.

A Pearson's chi-square test of independence indicated a relationship between type of school and perceived attitudes of peers regarding aggression when the entire sample was considered (χ^2=32.700, p<.001, Φ=.039). The percentages of youth who believed that their peers would be accepting of fighting were 48.8%, 42.5%, 44.9%, and 46.3% for each of elementary school, middle school, secondary school, and post-middle school, respectively. School type was also associated with perceived attitudes of peers regarding fighting for males (χ^2=40.632, p<.001, Φ=.061), but not for females, when all grade levels were combined. The percentages of males who believed that their peers would be accepting of fighting were 35.6%, 26.1%, 30.5%, and 31.3% for each of elementary school, middle school, secondary school, and post-middle school, respectively. When each grade level was considered separately, for the genders combined, the type of school was associated with perceived attitudes of peers regarding fighting for Grade 9 youth only (χ^2=11.798, p=.003, Φ=.058). The percentages of Grade 9 youth who believed that their peers would be accepting of fighting were 63.2%, 60.0%, and 53.1% for middle school, secondary school, and post-middle school, respectively.

When each gender by grade level combination was considered, the type of school was associated with perceived attitudes of peers regarding fighting for Grade 7 males only (χ^2=8.703, p=.013, OR=1.313, CI=1.085 to 1.589). The percentages of Grade 7 males who believed that their peers would be accepting of fighting were 70.3% for middle school and 64.3% for secondary school.

Middle School Type

The relationship between middle school type and both reciprocated aggression and peer victimization propensity was examined using one-way ANOVAs. Pearson's chi-square tests of independence were conducted for middle school type and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. However, Grade 10 youth were not included in analyses considering grade level as all Grade 10 students were attending the same type of middle school. For Grade 7 youth, middle schools containing only Grades 6 and 7 were excluded, and for Grade 8 and 9 youth, middle schools containing only Grades 8 and 9 were excluded, due to small sample size. It is of note that youth in Grades 11 and 12 were not considered in any analyses considering middle school type as none were attending middle schools.

Middle school type was not associated with reciprocated aggression, peer victimization propensity, physical peer victimization, or relational peer victimization, regardless of gender or grade level.

Pearson's chi-square tests of independence indicated that middle school type was not associated with verbal peer victimization when the total sample was considered, and when each gender was considered, combining all grade levels. When each grade level was considered, for the genders combined, middle school type was associated with verbal peer victimization for Grade 7 youth only (χ^2=12.815, p=.012, Φ=.087). Middle schools, when ordered from youth having the greatest to the least likelihood of experiencing verbal peer victimization, were: Grades 4 through 7 (47.9%), Grades 7 and

8 (45.3%), Grades 6 through 8 (36.6%), and Grades 7 through 9 (36.3%). When each gender by grade level combination was considered, a relationship between the type of middle school and verbal peer victimization was found for Grade 7 males only (χ^2=13.343, P=.004, Φ =.141). Middle schools, when ordered from youth having the greatest to the least likelihood of experiencing verbal peer victimization, were: Grades 4 through 7 (51.1%), Grades 7 and 8 (44.9%), Grades 6 through 8 (31.7%), and Grades 7 through 9 (31.6%).

Middle school type was not associated with youth's perceptions of their peers' attitudes regarding aggression, when the entire sample was considered, and when each gender was considered separately. When each grade level was considered separately, for the genders combined, middle school type was associated with perceived peer attitudes regarding aggression for Grade 8 youth only (χ^2=11.080, *p*=.011, Φ =.087). The percentage of Grade 8 youth who perceived their peers to be accepting of their fighting were 67.1%, 56.9%, 56.8%, and 53.2% for middle schools containing Grades 7 and 8, 6 through 8, 7 through 9, and 8 through 10, respectively. When each gender by grade level combination was considered separately, middle school type was not associated with perceived attitudes of peers regarding fighting.

School Size

The relationship between school size and both reciprocated aggression and peer victimization propensity was examined using Pearson's product moment correlations. Logistic regression was used to consider school size and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. As previously discussed, the second school size variable was used for Grade 7 students when grade level analyses were conducted in order to meet assumptions of orthogonality and balanced design. Although each gender and grade level were considered separately, these analyses did not allow for the detection of the curvilinear relationship between school size and each outcome variable hypothesized during

adolescence. Thus, trend analyses were also conducted testing the quadratic model using linear and logistic regression.

School size was not associated with either reciprocated aggression or peer victimization propensity, regardless of gender or grade level. When trend analyses were conducted, the quadratic model was not found to be both statistically and practically significant.

The results of logistic regressions indicated there to be no relationship between school size and physical peer victimization when the entire sample or males alone were considered. However, for females, larger school size was associated with a greater likelihood of being physically victimized by one's peers (OR=.878, χ^2=21.030, CI=.830 to .928, p<.000). When each grade level was considered separately, combining the genders, significant effects were found for Grade 9 youth only (OR=.882, χ^2=9.142, CI=. 813 to .957, p=.002). When each gender by grade level combination was considered separately, school size was found to be associated with physical peer victimization for Grade 9 girls only (OR=.796, χ^2=10.327, CI=.692 to .916, p=.001). When trend analyses were conducted, the quadratic model was not found to be both statistically and practically significant.

The results of logistic regressions indicated there to be no relationship between school size and verbal peer victimization when the entire sample or males alone were considered. However, for females, larger school size was associated with a greater likelihood of being verbally victimized by one's peers (OR=.909, χ^2=44.781, CI=.884 to .935, p<.000). When each grade level was considered separately, for both genders combined, school size was not associated with verbal peer victimization. When each gender by grade level combination was considered separately, school size was found to be associated with verbal peer victimization for Grade 8 (OR=.856, χ^2=14.258, CI=.789 to .928, p<.001) and Grade 10 females (OR=.899, χ^2=7.346, CI=.833 to .971, p=.007). When trend analyses were conducted, the quadratic model was not found to be both statistically and practically significant.

The results of logistic regressions indicated there to be no relationship between school size and relational peer victimization, regardless of gender or grade level. When trend analyses were conducted, the quadratic model was not found to be both statistically and practically significant.

The results of logistic regressions indicated there to be no relationship between school size and perceived attitudes of peers regarding fighting when the entire sample, males alone, and females alone, were considered. However, when each grade level was considered, for the genders combined, and when each gender by grade level combination was considered, a number of statistically and practically significant results were found (see Table 17). When school size was significantly related to the perceived attitudes of peers regarding fighting, smaller school size was associated with a greater likelihood of perceiving peers to be accepting of fighting. When trend analyses were conducted, the quadratic model was not found to be both statistically and practically significant.

Table 17. School Size and Perceived Attitudes of Peers Regarding Aggression

Gender	Grade Level						All Grade Levels
	7[a]	8	9	10	11	12	
Males	-	OR=.879*, χ^2=7.818, CI=.803 to .962	-	OR=.854**, χ^2=13.131, CI=.783 to .931	OR=.802**, χ^2=20.166, CI=.727 to .885	OR=.840**, χ^2=13.333, CI=.764 to .923	-
Females	-	OR=.871**, χ^2=10.859, CI=.802 to .946	OR=.858**, χ^2=16.071, CI=.795 to .925	OR=.901*, χ^2=7.186, CI=.833 to .972	OR=.807**, χ^2=25.652, CI=.736 to .874	-	-
Both Genders	-	OR=.896**, χ^2=14.307, CI=.846 to .948	OR=.910**, χ^2=11.777, CI=.862 to .960	OR=.891**, χ^2=17.0471, CI=.844 to .942	OR=.826**, χ^2=31.117, CI=.776 to .879	-	-

Notes. OR = Odds Ratio; CI = Confidence Interval;
χ^2 and odds ratios are presented for statistically and practically significant effects only, the largest school size was treated as the referent group;
df=1 for all analyses;
[a] Analyses based on second school size variable, generated for Grade 7 students only;
** $p<.001$, * $p<.01$;
- neither statistically nor practically significant.

Number of Grade Levels within a School

The relationship between the number of grade levels contained within a school and each of reciprocated aggression and peer victimization propensity were examined using Pearson's product moment correlations. Logistic regression was used to consider the number of grade levels within a school and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. No significant differences were found.

Number of Grade Levels above Youths' Grade Level

The relationship between the number of grade levels above a youth's grade level contained within their school, and each of reciprocated aggression and peer victimization propensity were examined using Pearson's product moment correlations. Logistic regression was used to consider the number of grade levels above a youth's grade level within a school and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. Grade 11 and 12 youth were excluded from analyses as they did not differ from one another on the number of grades above them contained within their school.

The number of grade levels above a youth's grade level contained within their school was not associated with reciprocated aggression, peer victimization propensity, physical peer victimization, verbal peer victimization, or relational peer victimization. The results of logistic regressions indicated there to be no relationship between the number of grade levels above a youth's grade level and perceived attitudes of peers regarding fighting when the entire sample, males alone, or females alone were considered. Similarly, no relationship was found when each grade level was considered separately. However, when each gender by grade level combination was considered, Grade 9

females were more likely to perceive their peers to be accepting of fighting the greater the number of grade levels above them contained within their school (OR=1.108, χ^2=5.497, CI=1.017 to 1.208, p=.019).

Higher Order Analyses

Only results that were both statistically and practically significant are reported below. The Bonferroni correction was applied when post hoc comparisons were made in the exploration of significant results.

School Transition Status

As described, a consideration of main effects did not indicate a relationship between school transition status and reciprocated aggression, peer victimization propensity, verbal peer victimization, or relational peer victimization. School transition status was associated with physical peer victimization for the entire sample and when males were considered alone. In each case youth in a transition year were more likely to report physical peer victimization then youth not in a transition year. However, when each grade level, and when each gender by grade level combination was considered, no association was found between physical peer victimization and school transition status. This suggests that gender and grade level moderate the relationship between school transitions and physical peer victimization. School transition status was not associated with perceived attitudes of peers regarding fighting when the entire sample and each gender separately were considered. When each grade level, for the genders combined, and when each gender by grade level combination were considered separately, differences were found. This suggests that gender and grade level moderate the relationship between school transition status and perceived attitudes of peers regarding aggression. However, when each gender by grade level combination was considered separately, differences between transition status were found only for Grade 8 males and Grade 11 females. Whereas Grade 8 males who were not in a transition year were more likely to perceive their peers to be accepting of fighting than those who were in a

transition year, Grade 11 females who were not in a transition year were less likely to perceive their peers to be accepting of fighting than those who were in a transition year.

Linear regression was used to consider the relationship between school transition status and both reciprocated aggression and peer victimization propensity, while controlling for additional school structure variables, gender, and grade level. Gender, grade level, number of school transitions, school size, number of grade levels in the school, and number of grade levels above youths' grade level were entered in the first step. School transition status was entered in the second step. School transition status was not associated with either reciprocated aggression or peer victimization propensity when additional school structure variables, gender, and grade level were controlled (see Table 18).

Logistic regression was used to consider the relationship between school transition status and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting, while controlling for a number of school structure variables, gender, and grade level. In each case the following variables were entered in a single step: school transition status, gender, grade level, number of school transitions, school size, number of grade levels in the school, and number of grade levels above youths' grade level. School transition status was not associated with either physical or verbal peer victimization when additional school structure variables, gender, and grade level were controlled. School transition status was however associated with verbal peer victimization and perceived attitudes of peers regarding aggression when additional school structure variables, gender, and grade level were controlled (see Table 18). Being in the year following a school transition was associated with reduced odds of being verbally victimized and a greater likelihood of believing peers to be accepting of fighting.

Table 18. School Transitions and Outcomes

Outcome Variable	*p* or change in R^2	exp (B)	CI
Reciprocated Aggression[a]	-		
Peer Victimization Propensity[a]	-		
Physical Peer Victimization[b]	-		
Verbal Peer Victimization[b]	$p<.001$	.819	.737 to .909
Relational Peer Victimization[b]	-		
Perceived Attitudes of Peers[b]	$p<.001$	1.290	1.160 to 1.434

Notes. [a] linear regression, significance determined by change in R^2 with school transition was entered into the second block;
[b] logistic regression controlling for gender, grade level, number of school transitions, school type, school size, number of grade levels in school, and number of grade levels above youths' grade level. Not having experienced a transition was treated as the referent group;
- neither statistically nor practically significant.

Number of School Transitions

The number of school transitions a youth had experienced was not associated with reciprocated aggression or peer victimization propensity. However, the number of school transitions a youth had experienced was associated with physical, verbal, and relational peer victimization when the entire sample was considered. This was also the case when both genders were considered for physical and relational peer victimization, and when females alone were considered for verbal peer victimization. In each case, youth who had never transitioned were more likely to have experienced peer victimization than youth who had transitioned once, who were in turn more likely to have experienced peer victimization than youth who had transitioned twice. When each grade level and each gender by grade level combination were considered, only one significant relationship was present. Grade 7 males who had never transitioned were less likely to have experienced verbal peer victimization than Grade 7 males who had transitioned once. The number of school transitions youth had experienced was related to perceived attitudes of peers' regarding fighting when the total sample and males alone were considered. Youth who had never transitioned were more likely to perceive their peers to be accepting of fighting than youth who had transitioned once, who in turn were more

likely to perceive their peers to be accepting of fighting than youth who had transitioned twice. When each gender by grade level combination was considered, significant effects consistent with this pattern were found only for Grade 9 youth and Grade 7 males.

Linear regression was used to further consider the relationship between the number of school transitions youth had experienced and both reciprocated aggression and peer victimization propensity, while controlling for additional school structure variables, gender, and grade level. Gender, grade level, school transition status, school type, school size, number of grade levels in the school, and number of grade levels above youths' grade level were entered in the first step. The number of school transitions youth had experienced was entered in the second step. The number of school transitions youth had experienced was not associated with either reciprocated aggression or peer victimization propensity when additional school structure variables, gender, and grade level were controlled.

Logistic regression was used to consider the relationship between the number of school transitions youth had experienced and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting, while controlling for a number of school structure variables, gender, and grade level. In each case the following variables were entered in a single step: number of school transitions youth had experienced, school transition status, gender, grade level, school type, school size, number of grade levels in the school, and number of grade levels above youths' grade level. The number of school transitions youth had experienced was not associated with physical peer victimization, verbal peer victimization, relational peer victimization, or perceived attitudes of peers regarding aggression when additional school structure variables, gender, and grade level were controlled.

Type of School

As described, a consideration of main effects did not indicate a relationship between school type and either reciprocated aggression or peer victimization propensity.

School type was however related to physical peer victimization when the total sample and each gender separately were considered. In each case, physical peer victimization was more common in middle school than elementary school, and more common in elementary school than either secondary or post-middle school. However, when each grade level was considered separately, and when each gender by grade level combination was considered, school type was not associated with physical peer victimization. This suggests that grade level moderates the relationship between school type and physical peer victimization. School type was also related to verbal peer victimization when the total sample and each gender separately were considered. In each case, verbal peer victimization was more common in middle school than elementary school, and more common in elementary school than either secondary or post-middle school. However, when each grade level, and when each gender by grade level combination were considered separately, few significant differences were found, suggesting that gender and grade level moderate the relationship between school type and verbal peer victimization. Grade 8 youth in middle school were more likely to report verbal peer victimization than Grade 8 youth in elementary school. School type was also related to relational peer victimization when the total sample and each gender separately were considered. In each case, relational peer victimization was more common in elementary and middle school than in either secondary or post-middle school. However, when each grade level, and each gender by grade level combination, were considered separately, the type of school was not associated with relational peer victimization. This suggests that grade level moderates the relationship between school type and relational peer victimization.

School type was related to perceived attitudes of peers regarding fighting when the total sample and when males alone were considered. In each case, elementary school students were the most likely, and middle school students the least likely, to perceive their peers to be accepting of fighting. However, when each grade level, and when each gender by grade level combination, were considered separately, significant differences were not found for all analyses, suggesting that gender and grade level moderate the relationship between school transitions and perceived attitudes of peers regarding aggression. Grade 9 youth in middle school were more likely than Grade 9

youth in secondary school, who were in turn more likely than youth in post-middle school, to perceive their peers to be accepting of fighting. Grade 7 males in middle school were more likely to perceive their peers to be accepting of fighting than Grade 7 males in secondary school.

Linear regression was used to consider school type and both reciprocated aggression and peer victimization propensity, while controlling for a number of school structure variables, gender, and grade level. Gender, grade level, school size, number of grade levels in the school, and number of grade levels above youths' grade level were entered in the first block and school type in the second. School type was not associated with either reciprocated aggression or peer victimization propensity when additional school structure variables, gender, and grade level were controlled (see Table 19).

Logistic regression was used to consider the relationship between school type and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting, while controlling for a number of school structure variables, gender, and grade level. In each case the following variables were entered, in a single step: school type, gender, grade level, school size, number of grade levels in the school, and number of grade levels above youths' grade level. School type was not associated with physical, verbal, or relational peer victimization when additional school structure variables, gender, and grade level were controlled. School type was however associated with perceived attitudes of peers regarding aggression when additional school structure variables, gender, and grade level were controlled (see Table 19). Youth in secondary school, middle school, and post-middle school were less likely to view their peers as accepting of fighting than youth in elementary school.

Table 19. School Type and Outcomes

Outcome Variable	School Type	*p* or change in R^2	exp (B)	CI
Reciprocated Aggression[a]	Elementary School	-		
	Secondary School	-		
	Middle School	-		
	Post-Middle School	-		
Peer Victimization Propensity[a]	Elementary School	-		
	Secondary School	-		
	Middle School	-		
	Post-Middle School	-		
Physical Peer Victimization[b]	Elementary School	-		
	Secondary School	-		
	Middle School	-		
	Post-Middle School	-		
Verbal Peer Victimization[b]	Elementary School	-		
	Secondary School	-		
	Middle School	-		
	Post-Middle School	-		
Relational Peer Victimization[b]	Elementary School	-		
	Secondary School	-		
	Middle School	-		
	Post-Middle School	-		
Perceived Attitudes of Peers[b]	Elementary School	p=.001		
	Secondary School	p=.005	2.088	1.253 to 3.481
	Middle School	p=.002	1.987	1.278 to 3.089
	Post-Middle School	p=.001	2.732	1.518 to 4.916

Notes. [a] linear regression, significance determined by change in R^2 with school transition was entered into the second block;
[b] logistic regression controlling for gender, grade level, school size, number of grade levels in school, and number of grade levels above youths' grade level. Elementary school was treated as the referent group;
- neither statistically nor practically significant.

Middle School Type

As described, a consideration of main effects did not indicate a relationship between middle school type and either reciprocated aggression, peer victimization propensity, physical peer victimization, or relational peer victimization. Middle school type was not associated with verbal peer victimization when the total sample and each gender separately were considered. However, when each grade level and each gender by grade level combination were considered, differences were found. This suggests that gender and grade level moderate the relationship between middle school type and

verbal peer victimization. Middle school type was associated with verbal peer victimization for Grade 7 youth and Grade 7 males. Middle school type was not associated with perceived attitudes of peers regarding fighting when the entire sample was considered, or when each gender was considered separately. When each grade level was considered separately, for the genders combined, middle school type was associated with perceived attitudes of peers regarding fighting for Grade 8 youth only. When each gender by grade level combination was considered separately, middle school type was not associated with perceived attitudes of peers regarding fighting. No pattern was evident as to why some middle school types differed from others in regards to verbal peer victimization and perceived attitudes of peers regarding fighting (e.g., range of grades contained within the school).

Linear regression was used to consider middle school type and both reciprocated aggression and peer victimization propensity. Gender, grade level, school size, number of grade levels in the school, and number of grade levels above youths' grade level were entered in the first block and middle school type in the second. Middle school type was not associated with either reciprocated aggression or peer victimization propensity when additional school structure variables, gender, and grade level were controlled for (see Table 20).

Logistic regression was used to consider the relationship between middle school type and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting, while controlling for a number of school structure variables, gender, and grade level. In each case the following variables were entered, in a single step: middle school type, gender, grade level, school size, number of grade levels in the school, and number of grade levels above youths' grade level. Middle school type was not associated with physical peer victimization, relational peer victimization, or perceived attitudes of peers regarding aggression when additional school structure variables, gender, and grade level were controlled. Middle school type was however associated with verbal peer victimization when additional school structure variables, gender, and grade level were controlled (see Table 20). Youth in middle schools containing the Grades 8 and 9, were more likely to

be verbally victimized by peers. Although, the relationship between middle school type and youths' perceptions of their peers' attitudes regarding aggression was not found to be significant, when subsequent analyses were conducted youth in middle schools containing the Grades 8 and 9 were more likely to believe their peers to be accepting of fighting.

Table 20. Middle School Type and Outcomes

Outcome Variable	School Type	*p* or change in R^2	exp (B)	CI
Reciprocated Aggression[a]	Grades 8 through 10	-		
	Grades 8 and 9	-		
	Grades 7 through 9	-		
	Grades 7 and 8	-		
	Grades 6 through 8	-		
Peer Victimization Propensity[a]	Grades 8 through 10	-		
	Grades 8 and 9	-		
	Grades 7 through 9	-		
	Grades 7 and 8	-		
	Grades 6 through 8	-		
Physical Peer Victimization[b]	Grades 8 through 10	-		
	Grades 8 and 9	-		
	Grades 7 through 9	-		
	Grades 7 and 8	-		
	Grades 6 through 8	-		
Verbal Peer Victimization[b]	Grades 8 through 10	p=.023		
	Grades 8 and 9	p=.022	2.512	1.140 to 5.536
	Grades 7 through 9	-		
	Grades 7 and 8	-		
	Grades 6 through 8	-		
Relational Peer Victimization[b]	Grades 8 through 10	-		
	Grades 8 and 9	-		
	Grades 7 through 9	-		
	Grades 7 and 8	-		
	Grades 6 through 8	-		
Perceived Attitudes of Peers[b]	Grades 8 through 10	-		
	Grades 8 and 9	.021	.411	.193 to .874
	Grades 7 through 9	-		
	Grades 7 and 8	-		
	Grades 6 through 8	-		

Notes. [a] linear regression, significance determined by change in R^2 with school transition was entered into the second block;
[b] logistic regression controlling for gender, grade level, school size, number of grade levels in school, and number of grade levels above youths' grade level. Middle schools containing Grades 8 through 10 was treated as the referent group;
- neither statistically nor practically significant.

School Size

As described, a consideration of main effects did not indicate a relationship between school size and each of reciprocated aggression, peer victimization propensity, and relational peer victimization. School size was however associated with physical peer victimization, verbal peer victimization, and perceived attitudes of peers regarding aggression. Although no relationship was found between school size and physical peer victimization when the entire sample or males alone were considered, a relationship was found when females alone, and Grade 9 females, were considered. Although no relationship was found between school size and verbal peer victimization when the entire sample or males alone were considered, a relationship was found when females alone, and when females in Grades 8 and 10, were considered. School size was associated with perceived attitudes of peers regarding aggression when each grade level, and when each gender by grade level combination were considered. When both statistically and practically significant results were found, smaller school size was associated with a greater likelihood of perceiving peers to be accepting of aggression.

Linear regression was used to further consider the relationship between school size and both reciprocated aggression and peer victimization propensity. Gender, grade level, school transition status, school type, number of grade levels in the school, and number of grade levels above youths' grade level where entered in the first block and school size in the second. School size was not associated with either reciprocated aggression or peer victimization propensity when additional school structure variables, gender, and grade level were controlled (see Table 21).

Table 21. School Size and Outcomes

Outcome Variable	Middle School	*p* or change in R^2	exp (B)	CI
Reciprocated Aggression[a]	Very Small	-		
	Small	-		
	Medium	-		
	Large	-		
	Very Large	-		
Peer Victimization Propensity[a]	Very Small	-		
	Small	-		
	Medium	-		
	Large	-		
	Very Large	-		
Physical Peer Victimization[b]	Very Small	.000	1.530	1.267 to 1.847
	Small	-		
	Medium	-		
	Large	.017	1.204	1.033 to 1.404
	Very Large	.000		
Verbal Peer Victimization[b]	Very Small	.000	1.296	1.151 to 1.459
	Small	-		
	Medium	.001	1.171	1.064 to 1.289
	Large	.000	1.207	1.101 to 1.324
	Very Large	.000		
Relational Peer Victimization[b]	Very Small	.000	1.280	1.134 to 1.446
	Small	-	-	-
	Medium	.001	1.175	1.065 to 1.145
	Large	-		
	Very Large	.000		
Perceived Attitudes of Peers[b]	Very Small	.000	2.005	1.778 to 2.261
	Small	.000	1.532	1.377 to 1.704
	Medium	.000	1.367	1.244 to 1.502
	Large	.000	1.383	1.262 to 1.515
	Very Large	.000		

Notes. [a] linear regression, significance determined by change in R^2 with school transition was entered into the second block;
[b] logistic regression controlling for gender, grade level, school size, number of grade levels in school, and number of grade levels above youths' grade level. School size category of very large was treated as the referent group;
- neither statistically nor practically significant.

Logistic regression was used to consider the relationship between school size and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting, while controlling for a number of school structure variables, gender, and grade level. In each case the following variables were entered, in a single step: school size, gender, grade level,

school transition status, school type, number of grade levels in the school, and number of grade levels above youths' grade level. School size was found to be associated with physical, verbal and relational peer victimization when additional school structure variables, gender, and grade level were controlled. School size was also found to be associated with perceived attitudes of peers regarding aggression when additional school structure variables, gender, and grade level were controlled (see Table 21). In each case, smaller school sizes were associated with a greater likelihood of being victimized by peers and perceiving ones' peers to be accepting of aggression.

Number of Grade Levels within a School

As described, a consideration of main effects did not indicate a relationship between the total number of grade levels in a youth's school and either of reciprocated aggression, propensity to be victimized, physical peer victimization, verbal peer victimization, relational peer victimization, or perceived attitudes of peers regarding aggression.

Linear regression was used to further consider the relationship between the total number of grade levels in a youth's school and both reciprocated aggression and peer victimization propensity. Gender, grade level, school transition status, number of school transitions, school type, and school size were entered in the first block and the total number of grade levels in a youth's school in the second. The total number of grade levels in a youth's school was not associated with either reciprocated aggression or peer victimization propensity when additional school structure variables, gender, and grade level were controlled (see Table 22).

Logistic regression was used to consider the relationship between the total number of grade levels in a youth's school and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting, while controlling for a number of school structure variables, gender, and grade level. In each case the following variables were entered, in a single step; gender, grade level, school transition status, number of school transitions, school type,

school size, and the total number of grade levels in a youth's school. The total number of grade levels in a youth's school was not found to be associated with physical, verbal or relational peer victimization when additional school structure variables, gender, and grade level were controlled. However, the total number of grade levels in a youth's school was found to be associated with perceived attitudes of peers regarding aggression when additional school structure variables, gender, and grade level were controlled (see Table 22). As the number of grade levels in the school increased, youth were less likely to perceive their peers to be accepting of aggression.

Table 22. Number of Grade Levels within a School and Outcomes

Outcome Variable	*p* or change in R^2	exp (B)	CI
Reciprocated Aggression[a]	-		
Peer Victimization Propensity[a]	-		
Physical Peer Victimization[b]	-		
Verbal Peer Victimization[b]	-		
Relational Peer Victimization[b]	-		
Perceived Attitudes of Peers[b]	.000	.908	.845 to .975

Notes. [a] linear regression, significance determined by change in R^2 with the number of grade levels in the school entered into the second block;
[b] logistic regression controlling for gender, grade level, school transition status, number of school transitions, school type, and school size. Having two grades in the school was treated as the referent group;
- neither statistically nor practically significant.

Number of Grade Levels above Youths' Grade Level

As described, a consideration of main effects did not indicate a relationship between the number of grade levels above a youth's grade level contained within their school and either of reciprocated aggression, propensity to be victimized, physical peer victimization, verbal peer victimization or relational peer victimization. The number of grade levels above a youth's grade level contained within their school was not associated with perceived attitudes of peers regarding aggression, with one exception. Grade 9 females were more likely to perceive their peers to be accepting of fighting the greater the number of grade levels above them contained within their school

Linear regression was used to further consider the relationship between the number of grade levels above a youth's grade level contained within their school and both reciprocated aggression and peer victimization propensity. Gender, grade level, school transition status, number of school transitions, school type, and school size were entered in the first block and the number of grade levels above a youth's grade level contained within their school in the second. The number of grade levels above a youth's grade level was not associated with either reciprocated aggression or peer victimization propensity when additional school structure variables, gender, and grade level were controlled (see Table 23).

Logistic regression was used to consider the relationship between the number of grade levels above a youth's grade level and each of physical peer victimization, verbal peer victimization, relational peer victimization, and perceived attitudes of peers regarding fighting, while controlling for a number of school structure variables, gender, and grade level. In each case the following variables were entered, in a single step; gender, grade level, school transition status, number of school transitions, school type, school size, and the number of grade levels above a youth's grade level. The number of grade levels above a youth's grade level was not found to be associated with relational peer victimization when additional school structure variables, gender, and grade level were controlled. However, the number of grade levels above a youth's grade level was found to be associated with physical peer victimization, verbal peer victimization, and perceived attitudes of peers regarding aggression when additional school structure variables, gender, and grade level were controlled (see Table 23). As the number of grade levels above a youths' grade level increased, youth were more likely to experience physical and verbal peer victimization, and were less likely to perceive their peers to be accepting of aggression.

Table 23. Number of Grade Levels Above Youths' Grade Level and Outcomes

Outcome Variable	*p* or change in R^2	exp (B)	CI
Reciprocated Aggression[a]	-		
Peer Victimization Propensity[a]	-		
Physical Peer Victimization[b]	.041	1.130	1.005 to 1.270
Verbal Peer Victimization[b]	.001	1.143	1.058 to 1.235
Relational Peer Victimization[b]	-		
Perceived Attitudes of Peers[b]	.000	.866	.800 to .938

Notes. [a] linear regression, significance determined by change in R^2 with the number of grade levels above a youth's grade level entered into the second block;
[b] logistic regression controlling for gender, grade level, school transition status, number of school transitions, school type, and school size. Having zero grade levels above a youth was treated as the referent group;
- neither statistically nor practically significant.

Summary of Higher Order Analyses

When the relationship between each school structure variable and each of reciprocated aggression, peer victimization, and perceived attitudes of peers regarding aggression was considered, holding constant other school structure variables, a limited number of statistically and practically significant effects were found. Being in the year of a school transition was associated with reduced odds of being verbally victimized and a greater likelihood of believing peers to be accepting of fighting. Youth in secondary school, middle school, and post-middle school were less likely to view their peers to be accepting of fighting than youth in elementary school. Middle school type was associated with verbal peer victimization and perceived attitudes of peers regarding aggression. Smaller school sizes were associated with a greater likelihood of being victimized by peers, in physical, verbal, and relational forms, and perceiving ones' peers to be accepting of fighting. Youth were less likely to perceive their peers to be accepting of aggression the more grade levels that were contained within their school. The greater the number of grade levels above a youth's grade level the greater the likelihood that they had experienced physical and verbal peer victimization, and the less likely they were to perceive their peers to be accepting of aggression. In general however, school

structure variables were not often associated with reciprocated aggression, peer victimization, or perceived attitudes of peers regarding aggression.

DISCUSSION

School Structure Results

The present study considered the relationships between reciprocated aggression, peer victimization, and beliefs regarding peers' acceptance of aggression and each of school transition status, number of previous school transitions, school type, school size, and grade levels contained within a school. In each case a number of moderators were also considered.

School Transitions and Social Hierarchies

It was expected that youth who were in the year of a school transition, relative to youth who were not, would be more likely to be involved in physical fights, experience peer victimization, and perceive their peers to be accepting of aggression. These predictions were based on dominance theory and the findings of previous research. In particular, Pellegrini and colleagues (Pellegrini, 2001b, 2002a; Pellegrini & Bartini, 2001; Pellegrini & Long, 2002) have provided a thorough theoretical application of dominance theory to research regarding aggression among youth and, consistent with theory, their research has found rates of aggression (Pellegrini & Bartini, 2001; Pellegrini & Long, 2002) and bullying (Pellegrini & Bartini, 2000a; Pellegrini & Long, 2002) to be higher during the year following a school transition, relative to prior to or some time after the transition. However, school transitions and age/grade level have been confounded in such research. It was thus unclear if findings reflected a reaction to school transition, which can be explained by social dominance theory, or whether this pattern instead reflected naturally occurring developmental changes related to social functioning. Of the studies that have made attempts to control for grade level, results are inconsistent (e.g., Simmons & Blyth, 1987).

Contrary to predictions, and dominance theory, the present study did not find school transition status to be related to reciprocated aggression, peer victimization

propensity, verbal peer victimization, or relational peer victimization, regardless of gender or grade level. Consistent with predictions, school transition status was associated with physical peer victimization when the entire sample and when males alone were considered. In each case, youth in a transition year were more likely to report physical peer victimization then youth not in a transition year. However, when each grade level, and when each gender by grade level combination was considered, no association was found between physical peer victimization and school transition status, suggesting that findings were a result of grade level differences rather than school transitions themselves. After holding constant gender, grade level, number of school transitions, school size, number of grade levels in school, and number of grade levels above youths' grade level, school transitions were not associated with reciprocated aggression, physical peer victimization, or relational peer victimization, but were associated with verbal peer victimization. Contrary to expectations, being in the year following a school transition was associated with reduced odds of being verbally victimized.

Although social dominance theory pertains to behaviours, and does not necessarily speak to attitudes, it was expected that youth would perceive their peers to be more accepting of aggression following school transitions. Not only are aggressive attitudes and behaviours typically associated with one another to some degree (Boulton, Bucci, & Hawker, 1999; Boulton, Trueman, & Flemington, 2002; Huesmann & Guerra, 1997; Rigby, 1997; Werner & Nixon, 2005), but some evidence suggests that youth's attitudes towards aggression become more lenient following school transitions (see Bukowski et al., 2000; Pellegrini & Bartini, 2000a). However, school transition status was not consistently associated with perceived attitudes of peers regarding aggression when each gender and grade level was considered, and even when differences were found, effect sizes were small. Subsequent higher-order analyses revealed that being in the year of a school transition was associated with a greater likelihood of believing peers to be accepting of fighting, when holding constant gender, grade level, number of school transitions, school size, number of grade levels in the school, and number of grade levels above a youths' grade level.

With the exception of perceived attitudes of peers regarding aggression, the present study's findings are inconsistent with the hypotheses and findings of Pellegrini and colleagues (Pellegrini, 2002a, 2002b; Pellegrini & Bartini, 2000a, 2001; Pellegrini & Long, 2002). These findings are, however, consistent with other research, which has not found differences, or actually found declines in, bullying (Olweus, 1977, 1993a) and peer victimization (Pellegrini & Long, 2002) following school transitions. Given that school transitions and age/grade level have been confounded in previous research, it may be the case that the findings of previous research were at least in part due to developmental trends in aggression, bullying, and peer victimization. Observed increases in aggression following school transitions may have reflected developmental trends regarding aggression. As detailed previously, aggression, bullying and peer victimization appear to increase or plateau during early adolescence. Developmental phenomena which may explain this increase or plateau in aggression include changes in peer group structure, the task of identity formation, interest in heterosexual relationships, and puberty, each of which will be discussed in greater detail shortly.

Alternatively, the absence of differences related to school transitions may be the result of a lack of sensitivity, or ability to detect existing differences, in the present study's measures. It may indeed be the case that aggression increased for a period of time following school transitions, but that the measures used in the present study were unable to capture and reflect this increase. It is possible that social hierarchies were established quickly following school transitions, and aggression thus only increased for a brief period of time, perhaps only within the first days or weeks following a school transition. Consistent with this possibility, dominance theory (Pellegrini, 2001b, 2002a; 2002b; Pellegrini & Bartini, 2000a, 2001) argues that aggressive strategies are used to establish hierarchies, but that once hierarchies are established strategies of affiliation are the primary method with which dominance is maintained. In fact, Pellegrini and Bartini (2001) found dominance status to be associated with aggression immediately following a school transition, but not so later in the year, when affiliative strategies were associated with dominance. The items used to measure aggression in the present study may not have been adequate to assess such brief changes, as they asked youth to comment on the entire previous year. Given that the BC AHS of 2003 was conducted in

the spring of the school year, it is possible that any increased reliance on aggressive strategies would have subsided by this point, and youth's responses may have reflected their current situation rather than their experiences during the entire previous year. It is also possible that the process by which youth establish their social hierarchies is both subtle and sophisticated, relying on non-aggressive strategies and perhaps even nonverbal assessments of dominance. It is interesting to note that youth perceive peers they like to be higher in dominance than their peers in general perceive the same youth (Boulton & Smith, 1990). Pellegrini (2002a) himself also wondered whether youth used other strategies besides aggression to attain dominance, proposing that success in sports or academics may serve the same function as aggression within particular niches.

The omission of bullying from consideration in the present study may also explain the findings of the present study. It may be the case that, consistent with previous findings (Pellegrini & Bartini, 2000a; Pellegrini & Long, 2002), school transitions did affect bullying but that this difference was not reflected in experiences of peer victimization. Theory and research regarding bullying suggests that rates of bullying and peer victimization do not necessarily coincide. It has been argued that aggression is targeted towards a minority group of victimized children, and is not distributed evenly to all peer targets (Perry et al., 1988; Perry, Williard, & Perry 1990). Thus, it may be the case that bullying is indeed used to attain status and may increase during times of school transition, but the use of aggression may be directed towards a limited number of lower status youth, in order to gain dominance with less risk or associated costs (Pellegrini, 1995, 1998; Pellegrini & Long, 2002). Consistent with such an interpretation, Pellegrini and Long (2002) found rates of aggression and bullying to increase following a school transition, but they did not find such a parallel increase in peer victimization. Alternatively, it may be the case that youth target others of perceived similar status as it is these youth with whom their status would be most ambiguous, and thus require the most clarification regarding relative status. Youth may not perceive or describe such conflict in terms of victimization given their similar status. However, this interpretation is not consistent with the fact that the present study did not find reciprocated aggression to increase following school transitions.

In summary, the present study did not find reciprocated aggression or peer victimization to be higher among youth who had recently experienced a school transition relative to same grade peers who had not experienced a school transition. This suggests that the findings of previous research may have reflected developmental changes rather than the effects of school transition. Although the findings of the present study do not support the application of social dominance theory to aggression and school transitions, they do not necessarily contradict social dominance theory. It indeed may remain the case that social dominance theory applies to youth, but that the processes of establishing social hierarchies are either: subtle, sophisticated, rapid, impacted by social and physical development, and/or rely less on aggression than anticipated. The fact that peers were perceived to hold more positive attitudes towards aggression following school transitions provides some support for such an interpretation. This area of research would benefit from a consideration of how developmental changes, such as changes in peer group structure, impact the use of aggression.

Number of School Transitions

The present study also considered whether or not the number of school transitions a youth had experienced was associated with reciprocated aggression, peer victimization, and/or beliefs regarding peers' acceptance of aggression. Previous research had not considered the possibility of cumulative effects of school transitions in regards to aggression, bullying, peer victimization, or attitudes regarding aggression, and arguments were presented for two opposing predictions. On the one hand, one might argue that with multiple school transitions a youth gains greater experience in transitioning schools, which would help them better navigate the forming and changed social structure. In contrast, if one considers a school transition to be a life stressor it is reasonable to argue that youth will experience greater difficulties with multiple transitions, which may manifest in an increased reliance on aggressive strategies. This second prediction is supported by research which has considered the effects of school mobility and found school changes (not associated with school transitions) to be associated with, and have a cumulative effect on both academic and

emotional/behavioural difficulties, even after controlling for additional risk factors often associated with school mobility (e.g., Simpson & Fowler, 1994; Wasserman, 2001). The results of the present study did not support either prediction. The number of school transitions a youth had experienced was not associated with reciprocated aggression, peer victimization propensity, physical peer victimization, verbal peer victimization, relational peer victimization, or perceived attitudes of peers regarding aggression.

Type of School

Previous research had not considered school type as a predictor of aggression, bullying, peer victimization, or attitudes towards aggression. However, given that the environment of elementary schools differs from the environment of middle and secondary schools, and that the environment of middle schools differs somewhat from that of secondary schools, there is reason to believe that the different types of schools differ in regards to aggression, bullying, and peer victimization. Common differences in the environments of the different types of schools, such as those pertaining to class size (Simmons & Blyth, 1987), the number of students in the school and at each grade level (Simmons & Blyth, 1987), the degree of focus on competition and social comparisons (Eccles et al., 1999), teacher attitudes regarding aggression (Eslea & Smith, 1998), degree of school community and nature of relationships with teachers and peers (Eccles et al., 1998; Midgley et al., 1988; Simmons & Blyth, 1987), and degree of adult supervision (Olweus, 1993b; Pellegrini & Bartini, 2000b), have been argued to contribute to greater levels of aggression, bullying, peer victimization, and positive attitudes regarding aggression in middle and/or secondary schools (Eslea & Smith, 1998; Olweus, 1993b; Pellegrini & Bartini, 2000b). Middle schools were expected to be particularly problematic due to a poor fit between the developmental stage of youth at this time and the typical nature of the middle school environment (Eccles & Midgley, 1989). Given that both the Developmental Readiness (Simmons & Blyth, 1987) and the Stage-Environment Fit (Eccles & Midgley, 1989) models stress the importance of the timing of transitions, with particular vulnerability emphasized in early adolescence (Simmons & Blyth, 1987), the grade levels contained in middle schools were also considered as a

possible predictor of reciprocated aggression, peer victimization and perceived attitudes of peers' regarding aggression, with greater risk expected for middle schools containing the youngest grades.

However, when holding constant a number of school structure variables, gender, and grade level, school type was not associated with reciprocated aggression, the propensity to be victimized by peers, physical peer victimization, verbal peer victimization, or relational peer victimization. These findings suggest that school type is of little importance in predicting rates of aggression or peer victimization. School type was however related to perceived attitudes of peers regarding aggression after holding constant a number of school structure variables, gender, and grade level. Youth in middle school, secondary school, and post middle school were less likely to perceive their peers as accepting of aggression than youth in elementary school. These findings indicate that, in general, peers are perceived to be more accepting of aggression in elementary school than in middle, secondary, or post middle schools. However, given that differences were not found between school type and either reciprocated aggression or peer victimization, after controlling for additional variables, it appears that perceiving one's peers to be more accepting of aggression does not necessarily result in increases in aggression.

As middle schools were of particular interest in the present study, the grade levels contained in middle schools were also considered as a possible predictor of reciprocated aggression, peer victimization and perceived attitudes of peers' regarding aggression. Middle school type was not associated with reciprocated aggression, peer victimization propensity, physical peer victimization, or relational peer victimization, after controlling for a number of school structure variables, gender, and grade level. Middle school type was however associated with verbal peer victimization and perceived attitudes of peers' regarding aggression. Being in a middle school containing the Grades 8 and 9 was associated with increased odds of being verbally victimized by peers and a greater likelihood of believing peers to be accepting of aggression. Overall, it appeared that the type of middle school had little impact on reciprocated aggression, peer victimization, or perceived attitudes of peers' regarding fighting. The significant

findings that did arise are questionable as they occurred only for a limited number of middle school types and outcome variables. It may be the case that these middle school types represent very few schools and/or classrooms and thus may not be representative of the larger sample. Thus, the few differences that were found may represent a sampling issue rather than a true difference due to middle school type.

The present study found that school type was generally unrelated to reciprocated aggression, peer victimization, and perceived attitudes of peers regarding aggression. This may reflect either educational reforms or it may indicate that aggression is not a variable that is impacted by the common differences found between the different school types. It may be the case that schools are successfully making efforts to improve their environments to better fit the developmental needs of their students. Alternatively, it may be the case that aggression is a domain that is not impacted by typical middle and secondary school environments. Simmons and Blyth (1987) themselves note that the nature of middle and secondary schools are not necessarily problematic for all possible outcome areas. It may simply be the case that aggression is not an outcome variable that is impacted by the middle or secondary school environment. Such an interpretation is somewhat surprising given that attending middle schools has been associated with declines in self-esteem and other variables relevant to interpersonal relationships (Simmons & Blyth, 1987).

School Size

Based on theories of reciprocal altruism, previous research has predicted rates of aggression to be highest in larger schools (see Pellegrini, 2002). However, given that research findings have been mixed, it was hypothesized that the forced cohesion of particularly small schools might become particularly problematic during early adolescence when peer groups become larger and of more importance to youth. In such circumstances, victimized youth would have little opportunity to change peer groups, due to the combined effect of having few peers, as a result of a smaller school size, and few peer groups, as a result of changes in peer group structure during early adolescence. To summarize, it was expected that in general, smaller schools would be

more likely to have lower rates of aggression, consistent with theories of reciprocal altruism, except during early adolescence when particularly small schools, in addition to larger schools, would be associated with higher rates of reciprocated aggression, peer victimization, and positive beliefs regarding peers' acceptance of aggression.

The findings of the present study did not entirely support predictions. Contrary to expectations, results indicated that school size was not associated with reciprocated aggression or peer victimization propensity. These findings are consistent with a growing number of studies that have not found a relationship between school size and bullying (Lagerspetz et al., 1982; Olweus, 1978; 1991; Whitney & Smith, 1993; Wolke et al., 2001) or victimization (Olweus, 1991). When each form of peer victimization was considered separately, controlling for school structure variables, gender, and grade level, school size was found to be associated with physical, verbal and relational peer victimization. In each case, smaller schools were associated with a greater proportion of victimized youth. In addition, perceived attitudes of peers regarding aggression were also associated with school size, with perceived positive attitudes regarding aggression being more prevalent in smaller schools. This is consistent with the notion of forced cohesion in small schools, suggesting that the limited size of the peer group in smaller schools places youth at increased risk of victimization. Findings were thus inconsistent with theories of reciprocal altruism.

It was hypothesized that both larger and smaller school sizes would be related to greater levels of aggression during early adolescence. When each gender and grade level was considered separately, no differences were found for reciprocated aggression, peer victimization propensity, and each of the three forms of peer victimization, with three exceptions. Larger school sizes were associated with greater risk of physical peer victimization for Grade 9 females and verbal peer victimization for Grade 8 and 10 females. When each gender and grade level was considered separately, a smaller school size was generally associated with a greater likelihood of perceiving peers to be accepting of fighting, with a few exceptions where no relationship was found. Although each grade level and gender were considered separately, initial analyses did do not allow for the detection of the curvilinear relationship proposed in early adolescence.

Trend analyses were thus conduced, but evidence of a curvilinear relationship between school size and each outcome variable was not found. Thus, the hypothesis that both larger and smaller school size would be particularly problematic during early adolescence was not supported.

The present study expands on previous research in that it considered both a large number of schools (351 schools in total) and a wide variety of school sizes (enrollment numbers ranging from 79 to 2,334). Unlike previous research, the present study did not aggregated across primary and secondary school, and considered a variety of school types (elementary, middle, secondary). Further, the present study expands on past research in that it controls for a number of school structure variables, and grade level, in the consideration of school size. This is an important consideration given that school structure variables are often associated with one another, and thus often confounded when school size alone is considered as a factor. Although the present study indicates that school size is associated with physical peer victimization, verbal peer victimization, relational peer victimization, and perceived positive attitudes of peers regarding aggression, the magnitude of these effects were quite small, and thus caution should be taken to not over-interpret these findings.

Grade Levels Contained within a School

It has been argued that a youth's age or grade position in the larger peer hierarchy relates to the opportunity and costs of bullying (Smith et al., 1999). Specifically, it has been proposed that younger children, relative to older children within a given school, are more likely to be victimized because they have more children in their school who are older than they are (Smith et al., 1999; Smith et al., 2001; Olweus, 1994). Consistent with this hypothesis, previous research has found that as youth increased in grade level they were less likely to be victimized by older youth (Smith et al., 1999). Consistent with this literature, the number of grade levels above a youth's grade level was found to be associated with physical peer victimization and verbal peer victimization. However, the number of grade levels above a youth's grade level contained within their school was not associated with reciprocated aggression, peer

victimization propensity or relational peer victimization. Further, results of the present study indicated that the total number of grade levels contained within a school had no bearing on each of these factors. A possible explanation for these findings is that a majority of youth are bullied by same age peers (Whitney & Smith, 1993; Wolke et al., 2001). If youth are typically bullied by same age peers neither the number of grades above them, nor the total number of grades in their school, would be expected to have much impact on aggression, bullying or peer victimization.

Previous research has not made hypotheses about, nor considered, the relationship between attitudes regarding aggression and either grade level relative to other students, or the total number of grades contained within a school. The number of grade levels above a youth's grade level contained within their school, and the total number of grade levels in a given school were both associated with perceived attitudes of peers regarding aggression. As the number of grade levels above a youths' grade level and the total number of grade levels in the school increased, youth were more likely to perceive their peers to be accepting of aggression.

The present study expanded on Smith, Madsen, and Moody's (1999) work by directly considering the number of grade levels above a youth's grade level, contained within their school, while controlling for grade level. The methods of the present study were also unique in that youth were sampled from a number of schools which differed as to the grade levels they contained, and thus for each grade level youth differed as to the number of grades above their own contained within their school. The present study also considered the relationship between the total number of grades in a given school and each of reciprocated aggression (fighting), peer victimization (physical, verbal and relational), and beliefs regarding peers' acceptance of aggression, while controlling for grade level. To the knowledge of the present author, previous research had not considered or hypothesized about such relationships.

Summary of School Structure Results

Very few of the school structure variables considered in the present study were associated with the various measures of aggression considered. Being in the year of a school transition was not associated with an increased likelihood of expressing or experiencing aggression, but was associated with perceiving peers to hold more positive views regarding aggression. The number of transitions a youth had experienced was not associated with any of the measures of aggression considered in the present study. School type was not associated with the expression or experience of aggression, but youth in elementary schools were more likely to perceive their peers to be accepting of aggression than youth in middle or secondary school. Interestingly, smaller school sizes were associated with a greater likelihood of experiencing each form of peer victimization, and perceiving peers to be accepting of aggression. Youth were less likely to perceive their peers to be accepting of aggression the more grade levels that were contained within their school. The greater the number of grade levels above a youth's grade level the greater the likelihood that they had experienced physical and verbal peer victimization, and the less likely they were to perceive their peers to be accepting of aggression. However, it is important to consider that when relationships were found between variables, the associated effect sizes were small.

Alternative Developmentally Based Explanations

Given that the present study did not find school structure variables to be associated with reciprocated aggression, peer victimization, and, in a number of cases, perceived attitudes of peers regarding aggression, other explanations for the age and grade level differences for aggression found in previous research must be considered. In general, when age and grade level differences have been found in previous research for aggression, bullying and peer victimization, they suggest a decline across ages, with a possible increase during early adolescence. There are a number of possible developmentally based explanations for this pattern. In particular, a number of developmental changes associated with adolescence, including social contextual

changes, psychological changes, the experience of puberty, and the relative timing of these changes, may account for the increases or plateaus in aggression often found during early adolescence. These developmental changes may effect aggression and the use of aggressive strategies directly, or indirectly through influence on the social hierarchies of the peer group.

Social-Contextual Changes

Throughout adolescence the peer group undergoes a number of structural changes. The nature of, and changes in, peer group structure during adolescence was first detailed in the literature by Dunphy (1963), and has been supported by subsequent research (e.g., Csikszentmihalyi & Larson, 1984). Dunphy (1963) described five stages of peer group formation beginning in early adolescence. He described the early adolescent period to be the "pre-crowd stage," a stage when individuals formed isolated single sex cliques. Dunphy (1963) defined a clique to be smaller than a crowd and composed of individuals with strong cohesion and greater intimacy relative to their relationships with members of the larger crowd. Dunphy (1963) described the second stage of peer group development during adolescence to be characterized by the beginning of crowds, where single sex cliques begin to interact and build closer relationships with one another. During stage three, upper status members of the single sex cliques form heterosexual cliques. In the fourth stage, the crowd is fully developed, and is comprised of heterosexual cliques that associate with one another closely, which allows for social activities involving a larger number of youth. Dating typically occurs within this mixed-sex group context (Connolly, Craig, Goldberg, & Pepler, 1999). In middle to late adolescence these crowds disintegrate, leaving "loosely associated groups of couples" (Dunphy, 1963, p. 236).

These changes in peer group structure during adolescence likely result in disruptions to, and instability in, the social hierarchies of the peer group. Applying social dominance theory, one would expect the use of aggressive strategies to rise in association with this instability, and remain at higher levels, perhaps throughout adolescence, as youth attempt to establish social hierarchies, or alternatively, rise and

fall if stability is attained between transitions to subsequent stages of group formation. As most school transitions occur during adolescence, it may be the case that social hierarchies *both before and after* school transitions are unstable, particularly during specific developmental periods such as early adolescence.

Psychological Changes

A number of psychological changes, related to issues of autonomy, identity, and cognitive development, occur during adolescence.

Coinciding with changes in peer group structure during adolescence, the peer group becomes of greater importance for youngsters (Simmons & Blyth, 1987), conformity to the peer group increases (Berndt, 1979; Steinberg & Silverberg, 1986), youth spend greater amounts of time with peers (Csikszentmihalyi & Larson, 1984), they direct more of their attention towards peer relationships (Brown, 1990; Steinberg & Silverberg, 1986), and emotional dependence on peers increases (Steinberg & Silverberg, 1986). It has been argued that the increasing importance of the peer group is a result of youths' attempts to establish their independence and autonomy from their families and develop their personal identities (Bukowski & Sippola, 2001). It is during adolescence that youth experience an increased desire for autonomy and independence (Aldous, 1978), particularly from adults (Steinberg, 1990), youth increasingly spend less time with their parents (Csikszentmihalyi & Larson, 1984), and conformity to parents declines (Berndt, 1979). Youths' movement away from parental influence, in pursuit of independence and autonomy, may lead typically non-aggressive youth to be more accepting of, and more likely to affiliate with, their aggressive peers as they challenge adult norms and explore social roles (Pellegrini & Long, 2002; Smith et al., 1999). Thus, the greater importance attached to peer relationships and establishing autonomy from adults present in early adolescence provides further reason to expect that aggression will increase during early adolescence.

In establishing one's autonomy one must consider one's identity. Erikson (1959, 1968) described adolescence as a time when youth struggled to establish a stable sense

of self through an integration of all aspects of self in an attempt to avoid identity diffusion. He also described adolescence as a time of exploration and experimentation with possible roles or identities. Interestingly, however, levels of conformity with peers increase during early adolescence (Berndt, 1979; Steinberg & Silverberg, 1986), and a pressure for group homogeneity may be implied. With this increased pressure for group homogeneity, violations of this homogeneity may easily occur, and result in victimization (Bukowski & Sippola, 2001; Pellegrini, 2002). In other words, the likelihood of violating group norms increases as the expectations of homogeneity are more stringent, and violations are thus more likely to be punished. Such social sanctions or punishment are likely to take the form of bullying, and thus rates of bullying are expected to increase at this time. Bukowski and Sippola (2001) argue that peer victimization is the result of the conflict between group goals (such as cohesion, homogeneity, change), and individual goals (such as individuality, diversity, independence), with those who impede the group goals being more likely to be victimized. It is during the period of adolescence associated with increased importance of the peer group that repercussions can be expected to be most dramatic. Indeed, it has been argued that youths' increased concerns with peer status during early adolescence, and related competition, results in increased reliance on aggressive strategies (Björkqvist, Österman, & Kaukiainen, 1992; Smith et al., 1999). The importance of belonging to a crowd declines as youth move from early to late adolescence, as youth become less accepting of the conformity demands of crowds with age (Brown, Eicher, & Petrie, 1986). Reliance on aggressive strategies can thus be expected to decline.

Adolescence is also marked by many cognitive developments, including increases in critical thinking (e.g., formal operational thinking), communication skills (e.g., encoding of social/conversational cues), and perspective taking (see Hartup, 1983, for summary; also see Smith et al., 1999). Of particular relevance, it is during adolescence that youth become more cognizant that others view and hold opinions of them (see Elkind, 1967). As a result of their tendency to imagine an audience for their behaviours, they tend to experience an adolescent egocentrism, and tend to believe that their faults are evident and important to others (see Elkind, 1967). For example, adolescents have been found to be particularly concerned as to how others view them,

which as they struggle to determine their sense of self may leave them feeling self-conscious (Simmons & Blyth, 1987). Indeed, adolescence is marked by an increased self-consciousness and self-focus (Simmons & Blyth, 1987; Harter, 1990). These cognitive developments likely impact the social relationships of youth, and thus may impact their social hierarchies. This may in turn impact the use of aggressive strategies, although it is unclear as to what outcome might be expected. Although improved cognitive abilities may contribute to improved conflict resolution skills, self-consciousness may result in greater emotional reactivity to interpersonal situations and an altering of ones use of aggression in an attempt to gain the approval of others.

Puberty

The possible rise or plateau in aggression during early adolescence may in part be due to youths' experience of puberty (Björkqvist, Österman, & Kaukiainen, 1992). Puberty is marked by hormonal and physical changes, each of which likely impacts peer relationships. During early adolescence youth experience rises in sex hormones (Hyde & DeLamater, 1997), and evidence suggests that sex hormones are related to aggression from puberty onwards (see Maccoby & Jacklin, 1980, for a discussion). Interestingly however, testosterone in early adolescent males has been linked to high social dominance but low physical aggression (Schaal, Tremblay, Soussignan, & Susman, 1996). This may be explained by the fact that physical changes associated with increases in sex hormones begin around the ages of 9 or 10 (Hyde & DeLamater, 1997). Such physical changes may alter peer social hierarchies due to changes in physical attributes related to dominance, such as relative size, particularly for boys. Boys who enter puberty before their peers may increase in physical size relative to peers, and any associated increased standing in the peer group hierarchy may go unchallenged by their peers of smaller stature due to the perceived likelihood of defeat being greater for the youth of smaller stature.

Puberty is also marked by increased interest in sexual relationships and the initiation of sexual behaviours. During childhood children prefer to spend their free time with same-sex peers and it is not until pre-adolescence that peer groups of opposite

genders begin to interact regularly (Csikszentmihalyi & Larson, 1984; Dunphy, 1963; Thorne, 1986). Signs of pubertal development, such as menarche, have been associated with age at first intercourse and first pregnancy (Udry, 1979) and hormone levels are related to sexual interest and behaviours in both boys (Udry, Billy, Morris, Groff, & Raj, 1985) and girls (Udry, Talbert, & Morris, 1986). Interestingly, peer and social expectations also play a role in dating and sexual attitudes (see Katchadourian, 1990, for a review). This increased interest in, and importance of, members of the opposite sex may alter relations in same-sex-groups (Thorne, 1986), as increases in cross-sex interactions occur (Csikszentmihalyi & Larson, 1984; Dunphy, 1963; Pellegrini 2001a). In particular, aggressive strategies may increase with the onset of puberty due to the particular importance attached to peer relationships, particularly opposite sex relationships (Björkqvist, Österman, & Kaukiainen, 1992). Risk taking and aggression at the time of puberty also makes sense in evolutionary terms, as competition to impress members of the opposite sex, and to gain partners, has been favoured in males (Bjorklund & Pellegrini, 2000).

Timing of Multiple Changes

As discussed above, early adolescence is marked by a number of coinciding developmental tasks and changes in the social contextual, psychological, and physical realms. The timing of these changes, relative to one another, may have an impact on how well youth are able to manage these changes, and may thus impact the expression of aggression. When multiple changes coincide, youth may be more likely to struggle, and for some youth this may translate into increases in the expression of aggression. Although aggression has not been explicitly considered in previous research, Simmons and Blyth (1987) found that youth, particularly girls, who were experiencing multiple changes, including a change of school, onset of puberty, dating, parental marital change, and geographical mobility, experienced poorer self-esteem and academic declines, and that these negative consequences endured. Of concern, it has also been argued that middle and secondary schools are not well suited to the developmental stages of youth, that the stage-environment fit is poor (Eccles & Midgley, 1989; Eccles, Wigfield, et al.,

1993; Eccles, Midgley, et al., 1993). It has been argued that, based on the Stage-Environment Fit model (Eccles & Midgley, 1989; Eccles, Wigfield, et al., 1993; Eccles, Midgley, et al., 1993), the mismatch between adolescents' development and the nature of their school environment result in a variety of negative psychological changes during adolescence. It has been argued that the changes detailed above, including social role redefinition, pubertal development and the emergence of sexuality, and cognitive developments, occurring together create unique needs which are not well met by adolescents' social environments, particularly their school and classroom environments. The middle and secondary school environments, which Eccles and colleagues describe as having an increase in teacher control, fewer opportunities for students to make decisions, and the increased reliance on the use of ability grouping relative to elementary schools, do not meet the emerging needs of adolescents, particularly a desire for autonomy and independence.

Moffit (1993) also proposed that adolescent's needs differ from what their environment provides them with. Moffit (1993) argued that the maturity gap between where adolescents are, and where they desire to be in regards to autonomy and independence, explained rises in delinquent behaviours during adolescence. She distinguished between youth with a life course trajectory of delinquent behaviour from youth whose antisocial behaviours increased solely during adolescence, which she described as reflecting youth's attempts to establish autonomy and independence. It has been argued that the cultural creation of a lengthened adolescence, or the discrepancy between what is expected of youth relative to adults, has created a period of time during which adolescents abilities, in comparison with what society and culture affords them, creates a discrepancy (Mead, 1975; Moffit, 1993).

Synthesis

The developmental changes detailed above may effect aggression and the use of aggressive strategies directly, or indirectly through influence on the social hierarchies of the peer group. These developmental changes may better account for the age differences found in previous research for aggression, bullying and peer victimization,

which suggest a decline across ages, with possible increases during early adolescence, than school structure variables. However, one must be mindful that although youth face specific problems that arise during adolescence, this does not generalize across all variables, nor is this consistent throughout adolescence (Coleman, 1974; Rutter, 1980; Simmons & Blyth, 1987). Adolescence is not necessarily a time of "storm and stress" as once believed (Coleman, 1974; Rutter, 1980; Simmons & Blyth, 1987). Thus, the developmental challenges youth face may not necessarily influence the expression of aggression, and if they do, increases in the expression of aggression may not be prolonged. Further, not all youth experience developmental changes in the same manner. Simmons and Blyth (1987) argue that changes during adolescence "are difficult for some children under some circumstances", and that "reaction depends on (1) characteristics of the change, (2) characteristics of the individual, and (3) the outcome area at issue." They stressed the importance of the timing of changes relative to developmental maturity, peers, and school structure. However, given the developmental tasks faced by adolescents, including the social-contextual, psychological, and physical changes, during this period it is reasonable to expect that how youth relate with one another will naturally change during this period. Thus, it is reasonable to expect that variables specific to the nature of relationships, such as aggression, bullying, victimization, and related attitudes may also change.

Gender and Grade Level Results

Although the present study did not directly consider developmental explanations for changes in the expression of aggression, the relationships between aggression and both gender and grade levels were considered. In particular, both gender and grade level differences for each of reciprocated aggression, peer victimization, and beliefs regarding peers' acceptance of aggression were considered.

Gender Differences

Consistent with research that has found males to be more aggressive (Maccoby & Jacklin, 1980), more likely to bully others (Bentley & Li, 1995; Bosworth et al., 1999; Boulton & Underwood, 1992; Kumpulainen et al., 1998; Olweus, 1993b, 1994; Wolke et al., 2001), more accepting of aggression and bullying (Pellegrini & Bartini, 2000a; Rigby, 1997), more likely to believe their peers will consider aggression clever (Rauste-von Wright, 1989), and less empathic of victims (Olweus & Endreson, 1998; Rigby, 1997) than females, the present study found males to have become involved in more fights and to have been more likely to have believed that their friends would be accepting of such behaviours, than females. This was the case regardless of grade level.

Findings have been mixed when previous research has considered gender differences in regards to peer victimization. These mixed findings may be the result of differences in the ages of the samples considered (see Wolke et al., 2001), reflecting a developmental shift, or may be the result of differences in the forms of peer victimization considered. The present study found females to have higher peer victimization propensity scores than males. However, this was limited to Grades 7 through 10, after which gender differences were not present. This contradicts a review of the literature which seemed to suggest that males are more likely than females to be victims of their peers in primary school, but not necessarily so in secondary school (see Wolke et al., 2001). These findings are likely a result of the forms of peer victimization which made up the peer victimization propensity measure of the present study, as results differed when each of the three forms of peer victimization were considered individually.

Consistent with previous research (Baldry & Farrington, 1999; Genta et al., 1996; Olweus, 1993b; Wolke et al., 2001), the present study found males to be more likely to have experienced physical peer victimization than females, regardless of grade level. However, the present study found females to be more likely than males to experience verbal peer victimization, regardless of grade level. This contrasts previous research which has typically either found males to be more likely than females (Kumpulainen et al., 1998), or equally as likely as females (Bentley & Li, 1995; Genta et al., 1996;

Whitney & Smith, 1993), to experience verbal peer victimization. Consistent with previous research (Crick et al., 2001), the present study found females to be more likely than males to have experienced relational peer victimization. This was the case regardless of grade level, contradicting hypotheses of a developmental difference, with relational aggression becoming more common among males towards the end of adolescence (Crick et al., 2001). The differing patterns of gender differences found among the three forms of peer victimization highlights the importance of considering not only gender, but also the forms that aggression, bullying, and peer victimization take.

To summarize, males were found to have become involved in more fights, to have been more likely to experience physical peer victimization, and to have been more likely to have believed that their friends would be accepting of such behaviours, than females. In contrast, females were more likely to experience verbal and relational peer victimization than males. The gender differences in regards to the forms of peer victimization appear to have affected the peer victimization propensity composite score, highlighting the importance of considering multiple forms of aggression separately in research regarding aggression.

Age and Grade Level

Although research that has considered aggression and bullying has been inconsistent, there is a general trend for the prevalence of each to decline from early childhood through adolescence and into early adulthood. In some cases a brief slowing in the decline, a plateau, or a rise in aggressive behaviours in pre- and/or early adolescence has been found, before the downward trend resumes (Baldry, 1998; Bentley & Li, 1995; Björkqvist, Lagerspetz, & Kaukiainen, 1992; Boulton & Underwood, 1992; Olweus, 1991, 1994; Rigby, 1997; Whitney & Smith, 1993). The findings of the present study are generally inconsistent with this body of literature. The present study did not find the likelihood of reciprocated aggression to differ depending on the grade level considered, regardless of gender. It is of note that, if one simply considers the means derived in the present study related to physical fighting, one would conclude that as grade level increases youth are less likely to engage in physical fights. However, this

trend was not found to be statistically significant, emphasizing the importance of making use of formal tests of significance. The findings of the present study, although they contradict expectations, are consistent with arguments that the overall pattern of aggression, disregarding the various forms it may take, is relatively stable (Coie & Dodge, 1998; Olweus, 1979). It is also possible that the form of aggression measured in the present study, physical fighting, was not sensitive enough to discern grade level differences in regards to aggression. Had less extreme forms of aggression been considered, perhaps age/grade level differences would have been found.

The present study did not find variations in the propensity to be victimized by peers across the grade levels considered, regardless of gender. This contradicts research that has primarily shown a steady decline in peer victimization from childhood through to adolescence (see Smith et al., 1999, for a review; also see Bentley & Li, 1995; Boulton & Underwood, 1992; Genta et al., 1996; Olweus, 1991, 1993b, 1994; Perry et al., 1988; Rivers & Smith, 1994; Smith et al., 2001). The findings of the present study also contradict research that has found interruptions in this overall decline during pre- and/or early adolescence (Baldry, 1998; Craig et al:, 2001; Perry et al., 1988, for verbal forms of peer victimization; Rigby, 1997; Rigby & Slee, 1991; Van Blyderveen, 2003). It is of note, however, that the bullying and peer victimization literatures differ. Whereas the bullying literature has generally found increases or plateaus during early adolescence, the peer victimization literature has typically found consistent declines throughout adolescence. It is possible that although more youth bully others during early adolescence, they target a limited number of victims. This literature would benefit from research that strives to elucidate the source of the differences between the bullying and peer victimization literature.

When each form of peer victimization was considered separately, the relationship between grade level and each of physical and verbal peer victimization was consistent with previous research, while the relationship between grade level and relational peer victimization was not consistent with this research. Consistent with previous research (Rivers & Smith, 1994), the likelihood of experiencing physical and verbal peer victimization (for females only) declined as grade level increased. However, whereas

previous research has found the same pattern for relational peer victimization (Rivers & Smith, 1994), grade level differences were not found for relational peer victimization.

The results of the present study were inconsistent with previous research that has found younger children and older adolescents to have more negative views of aggression (Cairns & Cairns, 1986; Rigby, 1997; Rigby & Slee, 1991; Swearer & Cary, 2003) and greater sympathy for victims (Rigby, 1997; Rigby & Slee, 1991) than early adolescent youth. Youth from lower, middle, and upper grade levels in the current sample were equally likely to perceive their peers to be accepting of aggression.

To summarize, with the exception of physical peer victimization, reciprocated aggression (fighting), peer victimization (the propensity to be victimized, verbal and relational forms), and beliefs regarding peers' acceptance of aggression did not vary depending on grade level. Although physical peer victimization declined from early to late adolescence, the prevalence of remaining variables during adolescence were not greatest during early adolescence as predicted given previous research. The present study expands on previous research in that it considered each form of peer victimization separately, included a consideration of older adolescents, and made use of formal tests of significance. An additional strength of the present study is that its sample size allowed for the consideration of each grade level separately, rather than compositing grade levels.

Summary and Conclusions

Given that peer victimization has been associated with a number of physical health (Rigby, 1999, Rigby & Slee, 1994) and psychosocial adjustment (see Storch & Ledley, 2005, for a review) difficulties, it is important that research consider how best to reduce youths' experiences of victimization at the hands of their peers. School structure is an important level at which to consider possible changes, and an understanding of developmental phenomena is a first step towards understanding how best to intervene. The present study was designed to contribute to and expand on the current literature in these areas. Findings indicated that school structure variables had minimal association

with reciprocated aggression, peer victimization, or perceived attitudes of peers regarding aggression. Although these findings do not support theory regarding social dominance or hypotheses regarding the cumulative changes of adolescence, they do not necessarily contradict such theories. It may indeed be the case that such theories hold, but that their effects are specific and limited rather than global or pervasive. In other words, the process of establishing social dominance and the cumulative developmental changes experienced by adolescents may have little impact on the expression of aggression and/or the particular variables considered in the present study. It may have been the case, had more subtle forms of aggression, or other variables related to interpersonal relationships been considered, that support would have been found for these theories.

In summary, the findings of the present study suggest that school structure, including school transitions and school type, have little impact on the prevalence of reciprocated aggression, peer victimization, or perceived attitudes of peers regarding aggression. These findings have important implications for the development of school policy and interventions. Given that school structure appears to have little impact on aggression, bullying, peer victimization, and attitudes towards aggression, resources are better spent on intervention programs which target aspects of school environments (e.g., teacher knowledge and attitudes, adult supervision, class rules), which have demonstrated efficacy (e.g., Olweus, 1993b), rather than making changes to school structure. Continued research that seeks to better understand youth aggression is needed, as with an increased understanding we are in a better position to develop effective strategies to prevent and respond to youth aggression.

Strengths and Limitations

The present study possesses a number of methodological strengths and limitations. It is of note that the strengths associated with the present study, which set it apart from previous research considering school structure in regards to design, methodology, and statistical approach, also make comparisons with previous research difficult.

Sample and Sampling Issues

The present study contains both strengths and limitations in regards to the sample and sampling method used. The primary strengths of the sample include both its size and diversity. The large size of the present sample allows for greater power to detect effects and greater confidence regarding generalizability. The present sample is diverse in a number of respects relevant to the present study. For example, the present sample included a wide range of grades, from Grades 7 through 12. As a result, the present study includes youth in later adolescence, a time period which has received little attention in past research. The sample also includes a number of schools and classrooms. As a result, students who completed the BC AHS of 2003 represent a diverse array of transition sequences, with youth transitioning at different grade levels. This allowed for analyses to control for grade level at the time of school transition, reducing possible confounds between grade level and school transitions, as well as a consideration of the impact of multiple transitions, which had not previously been considered.

A significant limitation of the present study is that it represents a subset of a larger sample. As a result of not being able to determine school transition sequences for all youth who initially completed the BC AHS of 2003, a number of youth were excluded from analyses. As a result of this reduction in the sample, the representativeness, and thus also the generalizability, of the present study's findings is of concern. It is possible that the youth excluded from the study may have differed in some way from the youth who were included. In a consideration of the schools which were excluded it was noted that the differences found between schools included and excluded from the present sample were not substantial, and it appeared that the schools included in the present sample appear to be representative of schools in British Columbia.

A second issue of concern with the present sample relates to the sampling method used. Participants were sampled using a stratified random sample, where sampling was completed at the level of the classroom and health region rather than by individual. As a result, the representativeness, and thus also the generalizability of the overall sample may have been compromised. It is possible that the classrooms selected

were not representative of classrooms more generally, and it is further possible that some school regions will have greater weight than others in analyses. Further, provincial weightings were not available to address this issue, as the present study made use of a subset of the larger sample. Despite the fact that the present sample sampled at a classroom level, it is reassuring that a number of classrooms were sampled, which reduces the degree to which the sample may have been compromised regarding representativeness and generalizability. Further, one could argue that the constructs considered in the present study hold regardless of differences in demographics (e.g., rural vs. urban), and that the present study is not a consideration of extreme populations, and thus the extent to which the sampling method effects prevalence is questionable and possibly negligible.

A further limitation of the present study lies in the fact that it was cross-sectional in design, and as a result causality cannot be inferred. A longitudinal design would have demonstrated greater support for an argument of causality than the present study's cross-sectional design. A cross-sectional design also precludes examination of the stability of peer victimization and categorization of victims based on trajectories.

Measurement

The present study possesses both strengths and limitations in regards to measurement. One strength lies in the fact that the present study considered three forms of peer victimization, including physical, verbal and relational peer victimization. This is important, as the different forms of peer victimization have been shown to differ between the genders (Crick & Bigbee, 1998; Crick et al., 2001) and appear to be independently related, and contribute differently, to various forms of social and psychological maladjustment (e.g., Crick, 1995; Crick & Bigbee, 1998; Hawker & Boulton, 2001; Sullivan et al., 2006). Further, considering all three forms in a composite score ensures that such a composite reflects the range of forms through which peer victimization can be expressed. A limitation of the present measures of the construct of peer victimization is that the questions used to assess peer victimization did not specify that an unequal distribution of power was necessary. Bullying and peer victimization are often defined in the literature as aggressive situations in which there exists unequal

power between the individuals involved (Olweus, 1993a, 1993b, 1994). It is thus possible that youth may have considered general aggressive circumstances when responding to the peer victimization items. It is also unfortunate that it was not possible to consider bullying in the present study, as the BC AHS of 2003 did not include items asking youth about their experiences of bullying others.

A further strength, which also posses unique limitations, is that the present study relies on self-report of youth. As much of the aggression in adolescence occurs in areas in which youth receive little supervision, such as on the playground, in cafeterias, in school hallways, and on the bus (Bentley & Li, 1995; Meraviglia, Becker, & Rosenbluth, 2003; Whitney & Smith, 1993), and thus likely outside of the awareness of adults, this may be the most reliable method available short of direct observations or peer nominations. This may particularly be the case for relational aggression, which is difficult to detect by others because of its intimate nature (Richardson & Green, 1997). However, self-report methods raise concerns regarding reliability, as youth may not answer accurately or honestly due to issues related to self-presentation and/or self-perception. It has been argued that self-report measures of aggression tend to underestimate behaviours, as youth are reluctant to admit bullying or experiencing peer victimization (Bosworth et al., 1999; Pellegrini & Bartini 2000b) and are uncomfortable describing their own behaviours as bullying (Bosworth et al., 1999; Pellegrini & Bartini 2000b), although youth may be more comfortable admitting to specific aggressive behaviours (Bosworth et al., 1999). Further, previous research comparing self and other reports have found there to be a small group of children who perceive themselves to be victimized although their peers and teachers do not perceive them to be victimized (Perry et al., 1988). However, contrary to concerns regarding the reliability of self-report measures relative to peer-reports, outcomes of self- and peer-reports are often similar (e.g., Crick & Bigbee, 1998). Youth completing the BC AHS (2003) were provided with, and assured of, their anonymity. Further, youth did not indicate their name or other identifying information on the survey and school personnel were not involved in the administration or collection of the surveys. Although several of the variables considered in the present study were determined based on self-report, youths' transition status, and related variables, were inferred based on the school which youth attended, and were not

obtained by self-report. Thus, if youth had moved such that they were required to change schools, it is possible that the coding of their transition status was incorrect. However, the only variable for which this has implications is the number of previous transitions youth had experienced.

An additional strength of the present study is that the unidimensionality of the peer victimization items was tested prior to compositing them. In developing and testing theory it is important that researchers ensure that their measures are both theoretically and statistically sound instruments. However, the present study also tended to rely on single items to measure constructs. Although it has often been convention in larger scale studies to include single items to measure constructs, reliance on a few items is not ideal as demonstrating their reliability becomes problematic. It is somewhat reassuring that the single items used to measure constructs in the present study were similar to items which have been good indicators in other studies (see Appendix C).

Directions for Future Research

Although the present study is not able to directly test theory, being more descriptive in nature, attempts have been made to relate findings to existing theory. Much of the peer victimization literature to date has been descriptive and atheoretical in nature, and future research in this area should strive towards the development of integrated theories of bullying and peer victimization (Schwartz, 2005). Promising areas of research and theoretical approaches which should be explored further in relation to bullying and peer victimization include dominance theory, group processes (e.g., striving for group homogeneity), varying trajectories of bullying and victimization, and typologies (e.g., bully-victims, forms of bullying and peer victimization). It would also be useful to integrate research conducted in other areas within psychology (e.g., social psychology's work on inter-group relations) or in other fields (e.g., sociology, anthropology, women's studies). Perhaps what is most needed is an integration of theory and findings from the various fields and topic areas relating to aggressor and victim experiences more generally, so that an integrated theory of victimization can be established. In doing so, it will be important to relate the aggressor and victim literature as well.

In pursuing such a goal, further consideration of Bukowski and Sippola's (2001) theory that victimization in early adolescence is a result of the conflict between the goals of groups, including goals of homogeneity and cohesion, and the goals of individuals, would be beneficial. In particular, testing the notion that leaders are those that help the group, not themselves, and those who are victimized are victimized because they impede group achievement would contribute a great deal to the current literature. If it is the case that as group goals change so to do victims, an understanding of group goals would increase researchers predictive ability regarding bullying and peer victimization, and thus contribute to the betterment of intervention programs.

A further example of a possible integration of theory, across domains in psychology and other disciplines, relates to an interesting finding that the different forms of peer victimization are differentially related to depression and anxiety. Hawker and Boulton (2001) found that depression and anxiety were associated with verbal and relational victimization, but not physical victimization. They explained this finding using social rank theory, from which they argued that internalizing difficulties are the result of being socially "down-ranked" through verbal victimization and for being excluded from the social group through relational victimization. In other words, internalizing difficulties arise due to social powerlessness and not belonging, which are targeted by verbal and relational aggression. Physical aggression is seen to have less of an impact on internalizing difficulties, as human social interaction is largely based on relationships of approval and alliance (hedonic mode), as opposed to dominance hierarchies established by aggression (agonic mode). Given gender differences in both aggression and internalizing disorders, gender will be an important consideration in such research. It has been argued that "exposure to relational victimization may have differential consequences for boys versus girls, with the most negative impact occurring for girls" (Crick et al., 2001). In fact, research has found females to view social aggression as more hurtful, and become more distressed when they experience social aggression, than males (e.g., Crick, 1995; Galen & Underwood, 1997; Leadbeater, Blatt, & Quinlan, 1995; Paquette & Underwood, 1999). Thus, an integration of theories related to social rank, internalizing and externalizing disorders, and gender would be of benefit to such research.

Final Summary and Conclusions

The findings of the present study suggest that school structure, including school transitions and school type, have little impact on the prevalence of reciprocated aggression, peer victimization, or perceived attitudes of peers regarding aggression. The present study expands on previous research by controlling for grade level and a variety of other school attributes in analyses. These findings call for refinement of the theoretical explanations most commonly discussed in relation to school transitions and aggression, particularly social dominance theory.

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APPENDICES

APPENDIX A.

NUMBER OF ELEMENTARY, MIDDLE, AND SECONDARY SCHOOLS BY BRITISH COLUMBIA SCHOOL DISTRICT AS OF JUNE 2006

School District	Number of Elementary Schools	Number of Middle Schools	Number of Secondary Schools	Number of Other Types of Schools[a]
Abbotsford School District #34	33	7	8	0
Alberni School District #70	9	2	3	0
Arrow Lakes School District #10	3	0	1	1
Boundary School District #51	7	0	2	0
Bulkley Valley School District #54	7	0	2	0
Burnaby School District #41	40	0	8	0
Campbell River School District #72	15	4	3	0
Cariboo-Chilcotin School District #27	17	0	11	0
Central Coast School Division #49	4	0	1	0
Central Okanagan School District #23	29	6	5	0
Chilliwack School District #33	22	5	2	0
Coast Mountains School District #82	15	0	7	0
Comox Valley School District #71	19	5	4	0
Conseil scolaire francophone de la Colombie-Britannique	22	0	10	4
Coquitlam School District #43	53	13	8	0
Cowichan Valley School District #79	21	4	4	0
Delta School District #37	26	0	7	0
Fort Nelson School District #81	2	1	1	1
Fraser-Cascade School District #78	5	1	2	2
Gold Trail School District #74	8	0	4	2
Greater Victoria School District #61	32	8	8	0
Gulf Islands School Division #64	4	1	2	4
Haida Gwaii School District #50	3	0	2	1*
Howe Sound School District #48	10	0	5	0
Kamloops/Thompson School District #73	41	0	10	0
Kootenay-Columbia #20	8	0	3	0
Kootenay Lake School District #8	16	1	3	4
Langley School District #35	34	1	10	0
Maple Ridge/Pitt Meadows School District #42	22	0	6	0
Mission School District #75	16	0	4	0
Nanaimo-Ladysmith School District #68	33	0	11	0
Nechako Lakes School District #91	14	0	3	4
New Westminster School District #40	9	2	1	0
Nicola-Similkameen School District #58	7	1	2	0

School District	Number of Elementary Schools	Number of Middle Schools	Number of Secondary Schools	Number of Other Types of Schools[a]
Nisga'a School District #92	3	0	0	1
North Okanagan Shuswap School District #83	18	2	4	0
North Vancouver School District #44	28	0	7	0
Okanagan Similkameen School District #53	6	0	3	0
Okanagan Skaha School District #67	11	4	3	0
Peace River North/Fort John School District #60	13	2	1	3*
Peace River South School District #59	18	1	3	0
Port Alberni School District #70	9	2	3	0
Powell River School District #47	6	1	1	0
Prince George School District #57	37	1	10	0
Prince Rupert School District #52	8	0	2	1 and 1*
Qualicum School District #69	9	3	2	0
Quesnel School District #28	14	0	3	0
Revelstoke School District #52	4	0	1	0
Richmond School District #38	38	0	11	0
Rocky Mountain School District #6	4	1	2	0
Saanich School District #63	9	3	3	0
Sooke School District #62	19	3	2	0
Southeast Kootenay School District #5	13	2	4	1*
Stikine School District #87	0	0	0	4
Surrey School District #36	99	0	18	0
Sunshine Coast School District #46	10	0	2	1
Vancouver Island North School District #85	12	1	2	1
Vancouver Island West School District #84	1	0	1	3
Vancouver School Board	75	0	18	0
Vernon School District #22	16	0	5	0
West Vancouver School District #45	14	0	3	0

Notes. [a] Grades Kindergarten through 12 inclusive unless otherwise noted;
* Grades Kindergarten through 10 inclusive.

APPENDIX B.

BC AHS (2003) ITEMS

Gender

What is your sex?

- ❑ Male
- ❑ Female

Grade Level

In what grade are you? (Mark one answer only)

- ❑ Grade 7
- ❑ Grade 8
- ❑ Grade 9
- ❑ Grade 10
- ❑ Grade 11
- ❑ Grade 12
- ❑ Ungraded or other

Peer Victimization

During the past 12 months, while at school, or on the way to and from school, how many times did another youth: (Mark an answer for each one):

Tease you or say something personal about you that made you feel bad or extremely uncomfortable?

- ❑ Never
- ❑ Once
- ❑ 2 or more times

Keep you out of things on purpose, exclude you from their group of friends or completely ignore you?

- ❑ Never
- ❑ Once
- ❑ 2 or more times

Physically attack or assault you?

- ❑ Never
- ❑ Once
- ❑ 2 or more times

Reciprocated Aggression

During the past 12 months, how many times were you in a physical fight?

- ❑ 0 times
- ❑ 1 time
- ❑ 2 or 3 times
- ❑ 4 or more times

Perceived Attitudes of Peers Regarding Aggression

Would your friends be upset with you if you:

Beat someone up

- ❑ Yes
- ❑ No

Emotional Distress

During the past 30 days, have you felt you were under any strain, stress or pressure?

- ❑ Yes, almost more than I could take
- ❑ Yes, quite a bit of pressure
- ❑ Yes, some/more than usual
- ❑ Yes, a little/about usual
- ❑ Not at all

During the past 30 days, have you been bothered by nervousness or "nerves"?

- ❑ Extremely so, to the point I couldn't do my work or deal with things
- ❑ Quite a bit
- ❑ Some, enough to bother me
- ❑ A little
- ❑ Not at all

During the past 30 days, have you felt so sad, discouraged, hopeless or had so many problems that you wondered if anything was worthwhile?

- ❑ Extremely so, to the point I couldn't do my work or deal with things
- ❑ Quite a bit
- ❑ Some, enough to bother me
- ❑ A little
- ❑ Not at all

Suicidal Ideation

During the past 12 months, did you ever seriously consider attempting suicide (killing yourself)?

- ❑ Yes
- ❑ No

APPENDIX C.

BC AHS (2003) ITEMS COMPARED TO ITEMS USED IN OTHER MEASURES

Items assessing physical aggression in both self-report and peer nomination measures have asked about specific acts of aggression such as fighting (Little et al., 2003; Olweus 1978), hitting (Little et al., 2003; Björkqvist & Niemela, 1992), kicking (Little et al., 2003; Björkqvist, Lagerspetz, & Österman, 1992; Björkqvist & Niemela, 1992), pushing (Björkqvist, Lagerspetz, & Österman, 1992; Björkqvist & Niemela, 1992), and punching (Little et al., 2003). Factor loadings which have been reported tend to range from .46 to .92 (Björkqvist, Lagerspetz, & Österman, 1992; Olweus, 1978) and reasonable internal consistency has been found for scales containing such items (e.g., .79 to .84, Little et al., 2003). Similar to items contained in other measures of aggression, which have demonstrated reasonable internal consistency (Little et al., 2003; Olweus, 1978), the physical aggression item used in the present study asked youth how many physical fights they had been involved in during the previous 12 months.

Self-report and peer nomination items exclusively assessing physical peer victimization have typically asked youth whether or not other's tend to start fights with them (e.g., Olweus, 1978). Items included in general peer victimization measures (not specific to physical peer victimization) have asked about a number of specific experiences of physical victimization, including being hit (Rigby, 1998; Crick & Grotpeter, 1996; Rigby & Slee, 1991, 1993; Kochenderfer & Ladd, 1996, 1997; Perry et al., 1988), pushed (Crick & Grotpeter, 1996; Rigby & Slee, 1991, 1993; Perry et al., 1988), kicked (Rigby, 1998; Crick & Grotpeter, 1996; Kochenderfer & Ladd, 1997), having one's hair pulled (Crick & Grotpeter, 1996), and being physically hurt (Baldry, 1998). Factor loadings which have been reported tend to range from .62 to .81 (e.g., Crick & Grotpeter, 1996; Rigby & Slee, 1993), while overall scale or subscale reliability tends to range from .70 to .87 (e.g., Crick & Grotpeter, 1996; Kochenderfer & Ladd, 1996, 1997; Rigby & Slee, 1991, 1993). The physical peer victimization item used in the present study asked

youth how often another youth had physically attacked or assaulted them. Although not directly comparable to other items used in previous research, it is arguable that when an individual is physically attacked or assaulted they are physically harmed using the specific acts of aggression detailed in the items described above, which have been found to have high factor loadings and to be included in scales which have demonstrated reasonable internal consistency.

Self-report and peer nomination items and measures exclusively assessing verbal peer victimization have asked youth whether or not they experienced being teased (e.g., Olweus, 1978) or having other's hurt their feelings (e.g., Boivin & Hymel 1997, Boivin et al. 1995). Items included in general peer victimization measures (not specific to verbal peer victimization) have included similar items, including having been made fun of (Rigby & Slee, 1991, 1993), called names (Crick & Grotpeter, 1996; Rigby, 1998; Rigby & Slee, 1991, 1993; Perry et al., 1988; Baldry, 1998), teased (Rigby, 1998), and had mean things said to them (Kochenderfer & Ladd, 1996, 1997). Factor loadings which have been reported tend to range from .73 to .85 (e.g., Rigby & Slee, 1993), while overall scale or subscale reliability tends to range from .70 to .86 (e.g., Kochenderfer & Ladd, 1996, 1997; Rigby & Slee, 1993). Similar to items contained in other measures of verbal peer victimization, which have demonstrated reasonable internal consistency (e.g., Kochenderfer & Ladd, 1996, 1997), the verbal peer victimization item used in the present study asked youth how often another youth teased them or said something personal about them that made them feel bad or extremely uncomfortable.

Items assessing relational peer victimization, in both self-report and peer nomination forms, have asked about specific experiences of relational aggression such as being excluded from a group of friends or an activity (Crick & Grotpeter, 1995, 1996), having been left out (Crick & Grotpeter, 1996), being ignored (Crick & Grotpeter, 1995), having had rumors or lies spread about them (Crick & Grotpeter, 1996), and having others threaten to withdraw friendship (Crick & Grotpeter, 1995, 1996). Factor loadings for self-report and peer nomination measures which have been reported tend to range from .70 to .83 (e.g., Crick & Grotpeter, 1995). Items included in general peer victimization measures (not specific to relational peer victimization) have included similar items, including being left out of things (Rigby, 1998), having rumors or bad things said

about them to others (Kochenderfer & Ladd, 1996, 1997; Baldry, 1998), and having others not speak to them (Baldry, 1998). Overall scale or subscale reliabilities which have been reported tend to range from .70 to .74 (e.g., Kochenderfer & Ladd, 1996, 1997). Similar to items contained in other measures of relational peer victimization, which have demonstrated high factor loadings (Crick & Grotpeter, 1995), the relational peer victimization item used in the present study asked youth how often another youth had kept them out of things on purpose, excluded them from a group of friends, or ignored them.

Items assessing subjective norms, or perceived attitudes of others' regarding aggression, have asked youth how approving they expected their friends, parents and teachers to be if they bullied others in various forms (Rigby, 1997). The item most closely matching that of the present study asked youth how approving others would be if they got into a fight with another youth whom they could easily beat. The overall scale reliability for this measure was .93 (Rigby, 1997). Items assessing youths' own attitudes regarding the legitimacy of physical aggression have typically asked youth about the acceptability of fighting and/or other acts of physical aggression given differing contexts and/or attributions, such as having someone say mean things or make them angry (Van Schoiack-Edstrom, Frey, & Beland, 2002). Factor loadings for the acceptability of hitting another youth under these two contexts were found to be .73 and .61 respectively (Van Schoiack-Edstrom et al., 2002). The present study did not consider youths' attitude towards aggression, but instead considered youth's perceptions of the attitudes of their friends regarding aggression, in other words, the perceived acceptability of an aggressive act. Youth were asked whether their friends would be upset with them if they were to "beat someone up." This is similar to items assessing subjective norms and personal attitudes regarding the legitimacy of physical aggression, which have been found to have reasonable internal consistency (Rigby, 1997) or a high factor loading (Van Schoiack-Edstrom et al., 2002).

APPENDIX D.

CURRENT MEASURES OF AGGRESSION

There is much diversity in the measures used to assess aggression, bullying, peer victimization, and attitudes towards aggression. These measures differ in regards to the informant used to provide information, how information is gathered, and how the measure is scored. Each of these aspects of measurement has implications for the interpretation of findings, as well as the reliability and validity of such measures.

Source of Information

Measures of aggression, bullying, peer victimization, and attitudes towards aggression differ in regards to the informant used to provide relevant information. Measures have made use of self-reports, reports by individuals other than the individual in question, and ratings by researchers based on observation. Research considering aggression, bullying, peer victimization, and attitudes towards aggression has often made use of self-report measures. Self-report measures of aggression, bullying, and peer victimization typically provide youth with a particular example of aggressive behaviour or bullying and ask them to report how often they are the perpetrators or targets of such aggression. Examples of two common self-report measures of aggression include the Direct and Indirect Aggression Scale (DIAS; Björkqvist, Lagerspetz, & Österman, 1992), which distinguishes between physical, verbal, and indirect forms of aggression, and a measure by Little, Jones and Henrich (2003), which distinguishes between overt and relational, as well as proactive and reactive, forms of aggression. Examples of common self-report bullying and peer victimization measures include a subscale of the Perceptions of Peer Support Scale (Kochenderfer & Ladd, 1996, 1997), the Social Experience Questionnaire – Self Report or SEQ-R (Crick & Grotpeter, 1996), the Bullying-Behaviour Scale (Austin & Joseph, 1996), the Peer-Victimisation Scale (Austin & Joseph, 1996), Rigby and Slee's Bully and Victim Scales (1991; 1993), the Olweus Senior Bully/Victim Questionnaire (1989, as cited in Pellegrini & Long, 2002) and other variations of Olweus' (1978) original scale (e.g., Boulton &

Underwood, 1992). The most commonly used measures to assess bullying and victimization are variations of those created by Olweus. These typically provide youth with a description of bullying and then ask youth to indicate the frequency with which they have perpetrated and/or experienced being a target of such acts within a given time period (e.g., the last five days or since the beginning of the school year). This is often followed by a series of more detailed questions regarding specific aggressive behaviours such as hitting, kicking, or teasing. Attitudes towards aggression among children and youth have also been assessed using self-report measures. Such measures include the Children's Attitudes towards Aggression Scale (CASS; Maud & De Mello, 1999), the Olweus Senior Bully/Victim Questionnaire (1989, as cited in Olweus, 1993a), the Provictim Scale (Rigby & Slee, 1991), the Attitude to Bullying Scale (Rigby, 1997), and a measure of perceived legitimacy of aggression (Slaby & Guerra, 1988; also see Erdley & Asher, 1998, and Van Schoiack-Edstrom et al., 2002, for additional subscales pertaining to verbal and relational forms of aggression). A questionnaire has also been designed to measure subjective norms (Rigby, 1997). This measure contains items asking youth how approving they expect their friends, parents and teachers to be if they were to bully others in various forms.

Measurement formats other than self-report have also been used to assess aggression, bullying, and peer victimization. Studies have made use of interviews or focus groups (e.g., Baldry, 1998; Boulton & Smith, 1994; Horowitz, Vessey, Carlson, Bradley, Montoya, McCullough, et al., 2004; Wolke et al., 2001), peer nominations, where youth identify peers who display aggressive behaviours or who are involved with bullying (e.g., the Social Experience Questionnaire – Peer Report or SEQ-P by Crick & Grotpeter, 1996; the DIAS, Björkqvist & Niemela, 1992; also see Crick & Grotpeter, 1995; Boulton & Smith, 1994; Hanish & Guerra, 2000; Olweus, 1978; Pellegrini & Long, 2002; Perry et al., 1988; Rigby & Slee, 1991), teacher reports and interviews (e.g., Halperin, McKay, & Grayson, 2003; Olweus, 1978; Pellegrini & Long, 2002; Perry et al., 1988; Rigby & Slee, 1991), and/or direct observations (e.g., Atlas & Pepler, 1998; Pepler & Craig, 1995; Pepler, Craig, & Roberts, 1998). Interviews and observations are subsequently coded for specific criteria. Measurement of youths' attitudes towards aggression has exclusively made use of the self-report format.

Although the measures described above have typically been shown to be reliable measures of aggression, bullying, peer victimization, and attitudes towards aggression, the informant used to provide relevant information has direct implications for measurement reliability. Self-report measures are particularly useful in assessing aggression, bullying, peer victimization, and attitudes towards aggression during adolescence as they allow for the reporting of aggression and aggressive attitudes occurring in the absence of adults and/or outside of the awareness of peers. This is an important consideration, as youth have reported that bullying often occurs in areas in which youth receive little supervision, such as on the playground, in cafeterias, in school hallways, and on the bus (Bentley & Li, 1995; Meraviglia et aL., 2003; Whitney & Smith, 1993), and thus information provided by other informants may not be as reliable. This may particularly be the case for relational aggression, which is difficult to detect by others because of its intimate nature (Richardson & Green, 1997).

Despite the benefits of self-report measures, concerns have been raised regarding issues of self-presentation and self-perception. It has been argued that self-report measures of aggression tend to underestimate behaviours, as youth are reluctant to admit bullying or experiencing peer victimization (Bosworth et al., 1999; Pellegrini & Bartini, 2000b) and are uncomfortable describing their own behaviours as bullying (Bosworth et al., 1999; Pellegrini & Bartini, 2000b), although youth may be more comfortable admitting to specific aggressive behaviours (Bosworth et al., 1999). It has also been argued that youth generally tend to underreport indirect aggression, arguably due to indirect aggression being more unconscious in nature (Björkqvist, Österman, & Kaukiainen, 1992). A benefit of peer-reports, teacher-reports, and observation methods is that they are not impacted by youths' concerns regarding self-presentation, or their self-perceptions of their status. Contrary to concerns regarding the reliability of self-report measures relative to peer-reports, outcomes of self- and peer-reports are often similar (e.g., Crick & Bigbee, 1998). Although teacher reports are convenient they are likely less reliable with youth in secondary school as youth are often taught by a variety of teachers (Rigby, 2002), bullying can be subtle (Rivers & Smith, 1994), and teachers have been found to vary in their threshold in perceiving peer victimization (Perry et al., 1988). In fact, teacher and observer ratings have been found to be only modestly

correlated (Pellegrini & Bartini, 2000b). Direct observation eliminates many of the difficulties of other methods but tends to be expensive and laborious. The present study primarily makes use of self-report, although the item assessing peer attitudes towards aggression relies on youths' *perception* of their peers' attitudes.

Design of Measure

Self-report measures of aggression, bullying, peer victimization, and attitudes towards aggression also differ in regards to the manner in which they collect information. In particular, measures differ in regards to the number of items they contain, the particular forms of aggression assessed, and the level of specificity of questions. Whereas some studies make use of individual items (e.g., Goldbaum, et al., 2003; Boulton & Underwood, 1992; O'Moore & Hillery, 1989; Wolke et al., 2001), most others make use of multiple items which are summed to provide a composite score (e.g., Crick & Grotpeter, 1996; Erdley & Asher, 1998; Kochenderfer & Ladd, 1996, 1997; Little et al., 2003; Maud & De Mello, 1999; Olweus, 1978; Pellegrini & Long, 2002; Perry et al., 1988; Rigby & Slee, 1991, 1993; Slaby & Guerra, 1988; Van Schoiack-Edstrom et al., 2002). Whereas some research includes items relevant to various forms of aggression, bullying, peer victimization, and attitudes towards aggression (e.g., Boulton & Underwood, 1992; Crick & Grotpeter, 1996; Kochenderfer & Ladd, 1996, 1997; Little et al., 2003; Pellegrini & Long, 2002; Rigby, 1998; Rigby & Slee, 1993; Sharp, 1996; Van Schoiack-Edstrom et al., 2002), others contain items that relate to only physical and/or verbal forms (e.g., Austin & Joseph, 1996; Erdley & Asher, 1998; O'Moore & Hillery, 1989; Perry et al., 1988; Rigby & Slee, 1991, 1993; Slaby & Guerra, 1988; Wolke et al., 2001). Further, whereas some measures include general and non-specific statements and definitions of aggression, bullying, and/or peer victimization, for which they then ask youth to indicate the frequency with which they engage in or experience each (e.g., Boulton & Underwood, 1992; Goldbaum, et al., 2003; O'Moore & Hillery, 1989), others ask youth how often they engage in or experience specific aggressive behaviours (e.g., Björkqvist & Niemela, 1992; Crick & Grotpeter, 1996; Kochenderfer & Ladd, 1996, 1997; Little et al., 2003; Perry, Kusel, & Perry, 1988; Rigby & Slee, 1993; Van Schoiack-Edstrom et al., 2002), while others do both (e.g., Olweus, 1978; Rigby, 1998). For example, whereas

one measure might ask youth how often they engaged in physical bullying, after having defined physical bullying, other measures might ask youth about specific behaviours indicative of physical bullying such as having hit, kicked, or pushed another youth. Similar to other larger scale studies (e.g., Goldbaum, et al., 2003), the present study used single items to measure each of physical, verbal, and relational peer victimization. The present study's items contained a number of examples to illustrate each construct before asking youth to indicate the frequency of such experiences.

The number of items used to measure a construct has implications for generating estimates of reliability. Whereas with multiple items there are a number of possible ways to assess the reliability of a measure, it is not possible to test the reliability of single item measures. It is somewhat reassuring that the single item measures used in the present study to assess physical aggression, physical peer victimization, verbal peer victimization, relational peer victimization, and peer attitudes regarding aggression were similar to items contained in multiple item measures that were good indicators in other studies (see Appendix C).

The forms of aggression assessed in a measure of aggression have implications for the interpretation of findings. If one limits ones measures to a limited number of forms, one must be cautious about generalizing results to apply to other forms of aggression. The present study made use of items assessing three forms of peer victimization: physical, verbal and relational, and considered each separately, as well as compositing them to form a composite score representing a propensity to be victimized by one's peers across these forms. The items used to assess reciprocated aggression and perceived attitudes of peers regarding aggression related to physical aggression only, and caution should be taken before generalizing related results to other forms of reciprocated aggression or perceived attitudes of peers regarding other forms of aggression.

Whether or not a measure makes use of items that contain definitions or provide examples of aggression also has implications for the interpretation of study findings. Measures that provide respondents with a definition of the construct in question can be argued to be of benefit as youth rate themselves on the overall construct in question.

However, a respondent's understanding and interpretations of such a definition might be limited or differ from others, and it could thus be argued that asking respondents to indicate the degree to which they exhibit given behaviours relevant to the construct in question reduces this limitation. However, determining and including an exhaustive list of behaviours related to a given construct can prove difficult. The present study's peer victimization items make use of multiple examples of related behaviours, which are relevant to the form of victimization in question.

Scoring and Categorization

Previous researchers have made use of various methods to score measures of aggression, bullying, peer victimization, and attitudes towards aggression. Scoring methods have differed as to whether they made use of cut-off scores and categories (e.g., Austin & Joseph, 1996; Craig, 1998; Erdly and Asher, 1998; Kochenderfer & Ladd, 1996, 1997; Olweus, 1993a; Rigby, 1997, 1998), or continuous scores (e.g., Björkqvist, Lagerspetz, & Österman, 1992; Crick & Grotpeter, 1996; Pellegrini & Long, 2002; Perry et al., 1988; Rigby & Slee, 1991, 1993; Van Schoiack-Edstrom et al., 2002). Further, when cut-off scores and categories have been used in previous research to determine bully or victim status, the methods to do so have differed from one study to another, requiring bullying and victimization to occur at varying frequencies before categorization (see Wolke et al., 2001). These categorizations, using arbitrary cut-off points, may not reflect naturally existing categories (Goldbaum, et al., 2003), result in less precision of measurement (Bosworth et al., 1999), and thus reduce our ability to draw valid conclusions. In addition, these arbitrary categorizations make it difficult to compare research findings from different studies. The present study considered the presence or absence of reciprocated aggression, peer victimization (in physical, verbal, and relational forms), and perceived approval of reciprocated aggression by peers. Composited scores were treated as existing on a continuum, and thus cut-off scores were not used.

Previous studies have also differed in regards to the manner in which they have composited items related to a given construct. The majority of research considering aggression (e.g., Pellegrini & Long, 2002), bullying (e.g., Pellegrini & Long, 2002; Rigby & Slee 1993), peer victimization (see Hawker & Boulton, 2000, e.g., Kochenderfer &

Ladd, 1996, 1997; Pellegrini & Long, 2002; Rigby & Slee, 1991, 1993), and attitudes towards aggression (e.g., Maud & De Mello, 1999) have tended to sum items across the different forms, and little work has considered the different forms separately. The assumption implicit in the summing of items is that these experiences tap an underlying construct, whether it is aggressiveness, propensity to bully, or the propensity to be victimized. However, the compositing of items across forms raises both theoretical and statistical issues. As detailed previously, the different forms of aggression, bullying, and peer victimization are distinct constructs, as they demonstrate different patterns of prevalence across age and grade level, and they are differentially associated with a variety of outcomes. One could thus argue that these items should not be composited. However, one could also argue that compositing such items yields information regarding a *propensity* to be aggressive, to bully, or to be victimized *across* these forms. Thus, depending on the particular research question, one could argue for considering the forms separately and/or for compositing them. The present study considered three forms of peer victimization: physical, verbal, and relational, separately, in addition to considering a composite score. The present study assessed reciprocated aggression and perceived attitudes of peers regarding aggression using single items.

Although one can theoretically argue that compositing items across the different forms is a valid approach, one must also establish whether items are unidimensional. Although previous research has demonstrated moderate to high correlations between the different forms of aggression and bullying (Crick, 1996; Crick & Grotpeter, 1995; Little et al., 2003), between physical and verbal peer victimization (Olweus, 1979; Perry et al., 1988; Van Blyderveen, 2003), between overt and relational peer victimization (Crick, Casas, et al., 1999; Crick & Grotpeter, 1995, 1996; Olweus, 1994), and internal consistency has been found for measures assessing attitudes towards the different forms of aggression (Van Schoiack-Edstrom et al., 2002), not all research has explicitly tested, using statistical means, whether or not such items can justifiably be composited. Although one can theoretically argue that compositing items across forms to generate a composite score is valid, one must also establish whether items are unidimensional. Testing the unidimensionality of items through the use of factor analysis allows one to determine if ones' items are each measuring the same thing, and thus allows one to

determine whether the items can be meaningfully composited to form a single score. Of the studies that have tested the unidimensionality of their items, some have found support for compositing these items while others have not. Using structural equation modeling, Little and colleagues (2003) found that the items of their measure relating to overt and relational forms of aggression were not undimensional, but instead mapped onto two separate constructs. Similarly, Crick and Bigbee (1998) found, using factor analysis, that their overt and relational peer victimization items were not unidimensional. However, some measures which have contained physical and verbal peer victimization items (e.g., Little et al., 2003; Rigby & Slee, 1993) have been found to be unidimensional, and a measure which contained physical, verbal, and relational items has demonstrated reasonable reliability, although dimensionality was not tested (Kochenderfer & Ladd, 1997). The present study tested, and confirmed, the unidimensionality of physical, verbal, and relational peer victimization items prior to compositing them to form a single score.

APPENDIX E.

PEER VICTIMIZATION FREQUENCY RESULTS

Descriptives

Outcome Variables

Table E1 indicates, *of youth reporting that they experienced peer victimization,* the percentage who had this experience more than once in the last year.

Table E1. Percentage of Youth Who Reported Victimization, Who Reported Being Victimized More than Once a Year by Gender and Grade

Form of Peer Victimization	Gender	Grade						All Grade Levels
		7	8	9	10	11	12	
Physical[a]	Males	35.6%	33.1%	40.3%	32.5%	31.2%	32.0%	34.6%
	Females	32.0%	27.4%	35.8%	34.2%	26.3%	24.2%	30.9%
	Both Genders	34.4%	31.2%	38.8%	33.0%	29.7%	29.7%	33.4%
Verbal[b]	Males	44.3%	43.6%	48.5%	46.8%	50.0%	43.2%	46.0%
	Females	44.1%	44.5%	45.7%	45.9%	42.4%	36.1%	43.6%
	Both Genders	44.2%	44.1%	46.9%	46.3%	45.8%	39.2%	44.6%
Relational[c]	Males	40.6%	40.4%	42.9%	38.9%	44.5%	40.8%	41.2%
	Females	42.8%	39.9%	42.7%	40.1%	42.8%	38.4%	41.3%
	Both Genders	42.0%	40.1%	42.8%	39.6%	43.4%	39.3%	41.3%

Notes. [a] total *n*=2,219, male *n*=1,497, female *n*=722.
[b] total *n*=7,824, male *n*=3,329, female *n*=4,495.
[c] total *n*=7,129, male *n*=2,730, female *n*=4,399.

Gender

Pearson's chi-square tests of association were calculated for gender and each peer victimization frequency variable, for the whole sample and at each grade level.

Gender was not significantly associated with any of the peer victimization frequency variables.

Grade Level

The relationship between grade level and each peer victimization frequency variable was considered using logistic regression, for the whole sample and for each gender separately. Grade level was not associated with any of the peer victimization frequency variables. As no main effects were found for grade level, trend analyses were not conducted. Percentages were presented in Appendix E and thus will not be presented again.

Main Effects

School Transition Status

The relationship between school transition status and each peer victimization frequency variable was examined using Pearson's chi-square tests of independence. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. Grade 12 youth were excluded from grade level analyses as there were no Grade 12 youth in a transition year.

Pearson's chi-square tests of independence indicated that school transition status was not associated with physical peer victimization frequency when the entire sample of youth who reported experiencing physical peer victimization was considered, or when each gender was considered separately. When grade level was considered separately, for the genders combined, differences were found for Grade 8 youth only. Grade 8 youth who were in the year of a school transition were less likely to report experiencing physical peer victimization more than once during the previous year (26.10%) than youth not in a transition year (39.35%, OR=.544, CI=.355 to .836, χ^2=7.815, p=.005). When each gender by grade level combination was considered separately, differences were found for Grade 8 males only. Grade 8 males who were in the year of a school transition were less likely to report experiencing physical peer

victimization more than once during the previous year (33.92%) than youth not in a transition year (42.42%, OR=.519, CI=.308 to .873, χ^2=6.171, p=.013).

Pearson's chi-square tests of independence indicated that school transition status was not associated with verbal peer victimization frequency when the entire sample of youth who reported experiencing verbal peer victimization was considered, when each gender was considered separately, and when each grade level was considered separately. When each gender by grade level combination was considered separately, differences were found for Grade 8 females only. Grade 8 females who were in the year of a school transition were less likely to report experiencing verbal peer victimization more than once during the previous year (40.90%) than youth not in a transition year (50.68%, OR=.673, CI=.505 to .899, χ^2=7.229, p=.007).

Pearson's chi-square tests of independence indicated that school transition status was not associated with relational peer victimization, regardless of gender or grade level.

Number of School Transitions

The relationship between the number of school transitions a youth had experienced and each peer victimization frequency variable was examined using Pearson's chi-square tests of association. Grade 8 was not considered for analyses as all youth had experienced the same number of school transitions. Results indicated that the number of school transitions youth had experienced was not associated with any of the peer victimization frequency variables (physical, verbal, relational), regardless of gender or grade level.

Type of School

The relationship between school type and each peer victimization frequency variable was examined using Pearson's chi-square tests of association. Results indicated that school type was not associated with peer victimization frequency (physical, verbal, and relational).

Middle School Type

The relationship between middle school type and each of physical peer victimization frequency, verbal peer victimization frequency, and relational peer victimization frequency was examined using Pearson chi-square tests of independence. Analyses were conducted for all youth who indicated experiencing each form of peer victimization, each gender, each grade level, and each gender by grade level combination. However, as there was only one type of middle school which contained Grade 10, and no middle schools contained Grades 11 and 12, these grade levels were not considered in analyses. Middle school type was not associated with either physical or verbal peer victimization frequency.

Relational peer victimization frequency was not associated with middle school type when the entire sample of youth who reported experiencing relational peer victimization was considered, or when each gender was considered separately. When grade level was considered separately, for the genders combined, differences were found for Grade 7 and Grade 9. The percentage of Grade 7 youth reporting experiencing relational peer victimization more than once a year was 33.3%, 50.5%, 39.5%, and 50.0% for middle schools containing the Grades 7 through 9, Grades 7 and 8, Grades 6 through 8, and Grades 4 through 7, respectively. The percentage of Grade 9 youth reporting experiencing relational peer victimization more than once a year was 56.3%, 23.5%, and 41.9% for middle schools containing the Grades 8 through 10, Grades 8 and 9, and Grades 7 through 9, respectively. When each gender and grade level were considered separately, middle school type was associated with the frequency of relational peer victimization for Grade 9 females only. The percentage of Grade 9 females reporting experiencing relational peer victimization more than once a year was 61.9%, 33.3%, and 37.5% for each of middle schools containing the Grades 8 through 10, Grades 8 and 9, and Grades 7 through 9, respectively.

School Size

The relationship between school size and each peer victimization frequency variable was examined using logistic regression. Analyses were conducted for the total

sample, each gender, each grade level, and each gender by grade level combination. It is of note that, as mentioned previously, a second school size variable was used for Grade 7 students when grade level analyses were conducted. As previously discussed, this school size variable specific to Grade 7 students was developed in order to meet assumptions of orthogonality and balanced design.

The results of logistic regressions indicated there to be no relationship between school size and physical peer victimization frequency, regardless of gender or grade level.

When logistic regressions were conducted considering school size and verbal peer victimization frequency for the total sample, each gender, each grade level, and each gender by grade level combination, a number of significant results were found (see Table E2). When school size was significantly related to verbal peer victimization frequency, smaller school size was associated with a greater likelihood of being verbally victimized more than once in the previous year.

Table E2. Logistic Regression for School Size and Verbal Peer victimization Frequency

Gender	Grade						All Grade Levels
	7	8	9	10	11	12	
Male	-	-	-	-	OR=.765, CI=.642 to .913, χ^2=9.088, *p*=.003	-	-
Female	OR=.824, CI=.724 to .938, χ^2=8.757	-	-	-	-	-	-
Both Genders	OR=.860, CI=.781 to .947, χ^2=9.562	OR=.882, CI=.809 to .962, χ^2=8.019	OR=.894, CI=.819 to .977, χ^2=6.106	-	OR=.861, CI=.767 to .968, χ^2=6.311	-	-

Notes. OR = Odds Ratio; CI = Confidence Interval;
df=1 for all analyses;
χ^2 and odds ratios for statistically and practically significant effects only, experiencing victimization only once was treated as the referent group;
- neither statistically nor practically significant.

When logistic regressions were conducted considering school size and relational peer victimization frequency for the total sample, each gender, each grade level, and each gender by grade level combination, a number of significant results where found (see Table E3). When school size was significantly related to relational peer victimization frequency, smaller school size was associated with a greater likelihood of being verbally victimized more than once in the previous year.

Table E3. Logistic Regression for School Size and Relational Peer Victimization Frequency

Gender	Grade						All Grade Levels
	7	8	9	10	11	12	
Male	-	OR=.776, CI=.654 to .992, χ^2=8.562	-	-	-	OR=.765, CI=.636 to .919, χ^2=8.348	-
Female	OR=.843, CI=.772 to .920, χ^2=14.795	-	-	-	-	-	-
Both Genders	OR=.884, CI=.825 to .947, χ^2=12.427	OR=.861, CI=.775 to .955, χ^2=8.057	-	-	-	-	-

Notes. OR = Odds Ratio; CI = Confidence Interval;
df=1 for all analyses;
χ^2 and odds ratios for statistically and practically significant effects only, experiencing victimization only once was treated as the referent group;
- neither statistically nor practically significant.

Number of Grade Levels within a School

The relationship between the number of grades contained within a school and each peer victimization frequency variable was examined using logistic regressions. Results indicated that the number of grade levels in a school was not associated with the peer victimization frequency variables (physical, verbal, relational).

Number of Grade Level Above Youths' Grade Level

The relationship between the number of grade levels above youth contained within the school and each peer victimization frequency variable was examined using

logistic regression. Analyses were conducted for the total sample, each gender, each grade level, and each gender by grade level combination. Grade 11 and 12 youth were excluded from analyses as they did not differ from one another on the number of grades above them contained within their school.

The results of logistic regressions indicated there to be no relationship between the number of grade levels above a youth and physical peer victimization frequency when the entire sample, males alone, or females alone were considered. When each grade level was considered separately, Grade 10 youth who had a greater number of grades above them, within their school, were more likely to be physically victimized by their peers more than once in the past year (OR=1.838, CI=1.130 to 2.990, χ^2=7.620, p=.006). When each gender by grade level combination was considered separately, Grade 10 females who had a greater number of grades above them, within their school, were more likely to be physically victimized by their peers more than once in the past year (OR=31055.795, χ^2=8.846, p=.003). It is of note that due to the small number of Grade 10 females reporting having experienced physical peer victimization it was not possible to compute a confidence interval, and thus these findings should be interpreted with caution.

The results of logistic regressions indicated there to be no relationship between the number of grade levels above a youth and verbal peer victimization frequency when the entire sample, males alone, or females alone were considered. When each grade level was considered separately, Grade 8 youth who had a greater number of grades above them, within their school, were less likely to be verbally victimized by their peers more than once in the past year (OR=928, CI=.871 to .988, χ^2=5.501, p=.019). When each gender by grade level combination was considered separately, Grade 8 (OR=.889, CI=.819 to .965, χ^2=7.976, p=.005) and Grade 10 (OR=.695, CI=.536 to .903, χ^2=7.702, p=.006) females who had a greater number of grades above them, within their school, were less likely to be verbally victimized by their peers more than once in the past year.

No significant differences were found for relational peer victimization frequency, regardless of gender or grade level.

Higher Order Analyses

Given that peer victimization frequency variables for physical, verbal, and relational forms, were not often associated with school structure variables, higher order analyses were not conducted.

APPENDIX F.

CONVERGENT VALIDITY

Methods

The following items taken from the BC AHS (2003) were used in order to consider the convergent validity of the items and measures used in the present study (also see Appendix B).

Emotional Distress

Five questions within the BC AHS of 2003 asked youth about their emotional experiences. All but the fourth question was modified from the Adolescent Health Survey (University of Minnesota Adolescent Health Program, 1986). The first question asked youth how often they felt they needed or liked to have time by themselves. Five response options were provided, ranging from "all of the time" to "never". The second question asked youth how often, within the previous 30 days, they felt under any strain, stress or pressure. Five response options were provided, ranging from "yes, almost more than I could take" to "not at all". The third question asked youth how often, within the previous 30 days, they had been bothered by nervousness or nerves. Five response options were provided, ranging from "extremely so" to "not at all". The fourth question asked youth how often, within the previous 30 days, they felt so sad, discouraged, hopeless or had so many problems that they wondered if anything was worthwhile (adapted from National Center for Chronic Disease Prevention and Health Promotion [CDC], 1990). Five response options were provided, ranging from "extremely so" to "not at all". The fifth question asked youth how often they felt bored or had nothing to do. Four response options were provided, ranging from "rarely" to "always".

Confirmatory factor analysis was used in order to determine whether or not a composite score could justifiably be calculated combining these five questions to provide an index of emotional distress. Results indicated that the unidimensional model did not hold (Least Squares χ^2=537.07, p=0.00, Least Squares χ^2=10264.85, p=0.00, and Least

Squares χ^2=11932.48, p=0.00, for the congeneric, tau-equivalent, and parallel models respectively). Given that chi-squares are particularly sensitive with larger samples, associated RMSEAs were also considered. In each case RMSEA was greater than .05. Thus, a single underlying factor was not found and these five questions were not composited. Instead, the questions which appeared to be most indicative of feelings of anxiety (the second and third items) and depression (the fourth item) were considered individually, and the remaining two items were removed from consideration.

Suicidal Ideation

One question from the 2003 BC AHS, taken from the National Longitudinal Survey of Children and Youth (Statistics Canada and Human Resources Development Canada [Statistics Canada and HRDC], 1994), related to suicidal ideation. The question asked youth whether or not they had seriously considered killing themselves.

Results

Descriptives

The percentage of youth, for each gender and at each grade level, who reported suicidal ideation are indicated in Table E3.

Table E3. Percentage of Youth Endorsing Suicidal Ideation by Gender and Grade

Variable	Gender	Grade						All Grade Levels
		7	8	9	10	11	12	
Suicidal Ideation[a]	Males	8.9%	11.1%	10.6%	11.6%	11.8%	12.2%	10.9%
	Females	15.5%	22.7%	26.7%	24.3%	21.3%	18.6%	21.1%
	Both Genders	12.2%	17.1%	18.7%	17.9%	16.5%	15.4%	16.0%

Notes. [a] Total n=22,209, male n=11,038, female n=11,171.

Mean responses to items related to emotional distress, for males and females, at each grade level, are indicated in Table E4.

Table E4. Mean Responses to Items Related to Emotional Distress, by Gender and Grade

Variable	Gender/Grade	Grade Level						All Grade Levels
		7	8	9	10	11	12	
Stress[a]	Males	2.16	2.32	2.55	2.76	2.99	3.16	2.61
	Females	2.36	2.81	3.14	3.34	3.50	3.62	3.05
	Both Genders	2.26	2.57	2.84	3.04	3.24	3.39	2.83
Nervousness[b]	Males	1.65	1.70	1.84	1.97	2.04	2.13	1.87
	Females	1.88	2.12	2.37	2.51	2.51	2.55	2.28
	Both Genders	1.76	1.92	2.11	2.24	2.27	2.34	2.07
Sadness[c]	Males	1.70	1.70	1.80	1.88	1.97	2.01	1.83
	Females	2.02	2.26	2.48	2.47	2.48	2.37	2.32
	Both Genders	1.86	1.99	2.14	2.17	2.22	2.19	2.07

Notes. [a] total *n*=22,351, male *n*=11 125, female *n*=11 226, minimum score=1, max score=5;
[b] total *n*=22,300, male *n*=11 089, female *n*=11 211, minimum score=1, max score=5;
[c] total *n*=22,295, male *n*=11 091, female *n*=11 204, minimum score=1, max score=5.

Analyses

In order to test the convergent validity of the peer victimization propensity composite, its association with indicators of anxiety (experiences of stress and nervousness), and depression (experiences of sadness and suicidal ideation) were considered. Results of Pearson Product Moment correlations indicated that peer victimization propensity was positively correlated with experiences of stress (r=.276, p<.001), nervousness (r=.281, p<.001), and sadness (r=.335, p<.001), although moderately so. Youth with greater peer victimization propensity scores tended to experience greater levels of stress, nervousness and sadness. Results of a logistic regression indicated a relationship between peer victimization propensity and suicidal ideation (OR=1.394, CI=1.368 to 1.420, χ^2=1247.630, p<.001). Youth who reported suicidal ideation had higher peer victimization propensity scores ($\overline{X}$=2.68) than youth who did not report suicidal ideation ($\overline{X}$=1.42).

The association between each of physical, verbal and relational peer victimization was considered in order to test their convergent validity. Pearson's chi-square tests of independence indicated that physical peer victimization was associated with verbal peer victimization (OR=4.706, CI=4.281 to 5.173, χ^2=1184.853, p<.001), and relational peer victimization (OR=3.405, CI=3.112 to 3.725, χ^2=778.399, p<.001), and that verbal peer victimization was associated with relational peer victimization (OR=6.117, CI= 5.750 to 6.507, χ^2=3598.926, p<.001). In each case, youth who had experienced one form of peer victimization were more likely to have experienced each of the other forms of peer victimization.

In order to further test the convergent validity of the three peer victimization items, their association with indicators of anxiety, such as experiences of stress and nervousness, and depression, such as experiences of sadness and suicidal ideation were considered. One-way ANOVAs indicated that physical, verbal, and relational peer victimization were associated with experiences of stress (Ω=.014, .053, and .051, respectively), nervousness (Ω=.013, .056 and .053, respectively), and sadness (Ω=.023, .075, and .077, respectively). Further, Pearson's chi-square tests of association indicated that physical (OR=2.982, CI=2.705 to 3.287, χ^2=520.555, p<.001, Φ>.010), verbal (OR=2.849, CI=2.647 to 3.066, χ^2=821.739, p<.001, Φ>.010) and relational (OR=2.913, CI=2.706 to 3.135, χ^2=856.899, Φ>.010) peer victimization were each associated with suicidal ideation. In each case, youth who had experienced peer victimization were more likely to report suicidal ideation (32.9%, 25.6%, and 26.5%, for each of physical, verbal, and relational peer victimization), then youth who had not been victimized (14.1%, 10.8%, and 11.0%, for each of physical, verbal, and relational peer victimization). Thus, youth who reported experiencing peer victimization reported greater levels of anxiety, particularly stress and nervousness, and depression, particularly sadness and suicidal ideation, than their peers.

In order to test the convergent validity of the items assessing reciprocated aggression and perceived attitudes of peers regarding aggression, their association with one another was considered. A one-way ANOVA indicated that perceived attitudes of peers regarding fighting was associated with the number of fights a youth had been

involved in during the previous year (Ω=.048). Youth who believed their peers would be accepting of fighting had been involved in more fights ($\overline{X}$=.61) than youth who did not believe their peers would be accepting of fighting ($\overline{X}$=.25).