

PEER VICTIMIZATION IN BRITISH COLUMBIA YOUTH

by

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ABSTRACT

Peer victimization is an issue which has recently received considerable attention from the media, the school system, and academic literature. The present study examines a number of expected correlates, both risk factors and outcomes, of peer victimization through the use of the Adolescent Health Survey - II conducted by the McCreary Centre Society in the province of British Columbia. Approximately 25,800 youth, from grades 7 through 12, from various regions of the province completed the questionnaire. Potential risk factors, including gender, grade, age, age relative to classmates, appearing younger or older than classmates, ethnicity, family socioeconomic status, sexual orientation, disability, body weight, family relationships, peer relationships, teacher relationships and having moved recently, and outcome factors, including depression, suicidal ideation, suicide attempts, anxiety/stress, physical health, drug use, body image, eating disorders, academic achievement and aspirations, school enjoyment and attendance, and school connectedness, were evaluated. Possible moderators between peer victimization and risk factors and between peer victimization and outcome factors were considered. Results indicated that most of the proposed risk factors were indeed associated with peer victimization. However, the effect sizes of these relationships were marginal. When gender and grade were considered as moderators between each of the risk factors and peer victimization they were found not to add predictive power. In regards to outcome factors, results again indicated that most factors were associated with peer victimization. Effect sizes were marginal. When gender, grade, family connectedness, teacher relationships, peer relationships, school connectedness, and academic achievement were considered as moderators between each of the outcome factors and peer victimization they were found not to add any predictive power. Findings of the present study expand on past literature by considering novel factors as well as considering effect sizes.

DEDICATION

This thesis is dedicate to Annette Van Blyderveen (nee Koutstaal) for her unflagging love and support which far exceeds the role of motherhood, to Metje Van Blyderveen (nee Budding) and Wilma Koutstaal (nee Van Kruistum) for providing me with strong role models from childhood onwards and teaching me the virtues of tolerance and patience. The three of you are 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. Each of you have encouraged me to pursue an academic career and set my ambitions high. I am eternally grateful.

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INTRODUCTION

Peer victimization has recently received considerable attention, both in mainstream culture and within the scientific community. This is quite evident if one watches television or reads the newspaper. For example, the Vancouver Sun newspaper, a major Vancouver newspaper, recently published articles regarding the impact of victimization on the suicidality of youth and a recent court ruling holding school boards responsible for the consequences of bullying. Recent headlines include “Teen suicides from bullying a worrying trend” (Pemberton, & Culbert, 2001), “Three girls charged after teen’s suicide” (Sandler, 2001), “Girl convicted of harassing B.C. teen who killed herself” (Mickleburgh, 2002) and “B.C. ruling on bullying sets precedent” (Matas, 2002). Peer victimization, “the experience among children of being a target of aggressive behavior of other children, who are not siblings and not necessarily age-mates” (Hawker & Boulton, 2000, p. 441), has perhaps received such remarkable attention because of its connection with a multitude of negative physical, social, and mental health outcomes. Peer victimization has been associated with general illness and poor physical health (Rigby, 1999; Rigby & Slee, 1994), internalizing problems (Hodges & Perry, 1999) such as depression (Hawker & Boulton, 2000; Rigby & Slee, 1994) and social-anxiety (Rigby & Slee, 1994; Slee, 1994), and poor school adjustment and avoidance (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997). Of particular concern is the increased rate of suicidal tendencies among victims of peer victimization (Rigby & Slee, 1994). In general, peer victimization has been associated with both immediate and long-term maladjustment. As a consequence, many programs have been developed in order to deal with violence, aggression, and bullying within the school systems. The British Columbia Ministry of Education and Ministry of Attorney

General, with the aid of other organizations, have developed a multitude of programs aimed at reducing violence and victimization within the school system (Government of British Columbia Ministry of Education, 2001).

Risk Factors Associated with Peer Victimization

The growing body of literature addressing peer victimization suggests a multitude of risk factors associated with peer victimization. Potential risk factors are variables which may in some way be associated with the occurrence of peer victimization. It must be understood that such variables can be conceptualized as being on a continuum, and thus for a given factor one extreme may be associated with greater risk of victimization, an increased proportion of students being victimized relative to norms, whereas the other extreme of the variable may be associated with a lower risk of victimization, a decreased proportion of students being victimized relative to norms. An example of a risk factor that lies on such a continuum from the field of health research in the area of lung cancer is smoking. Smoking (one extreme of the factor) is associated with a greater probability of lung cancer than not smoking (the other extreme of the factor) and thus smoking is a risk factor that lies on a continuum from smoking to not smoking. This continuum could be further specified by recording the number of cigarettes smoked per day. Occasionally within the peer victimization literature one extreme of a factor, which has been associated with a reduced likelihood of peer victimization, has been termed a protective factor while the other extreme, which has been associated with an increased likelihood of peer victimization, has been termed a risk factor. However, it is unreasonable to conceptualize a single factor which lies on a continuum as two separate factors, in this case risk and protective, as the two valences of the single factor are interconnected and information will be lost if the range is not considered. Thus, for the

purposes of this paper the term risk factor shall be used to refer to the entire continuum of the factor. It must also be noted that any number of risk factors associated with peer victimization may be acting at any given time in an individual's life.

Gender

Past research has found greater peer victimization among boys than girls and it is expected that this finding will be replicated in the present study (Boulton & Underwood, 1992 as cited in Hanish & Guerra, 2000; Olweus, 1991, as cited in Hanish & Guerra, 2000; Whitney & Smith, 1993, as cited in Hanish & Guerra, 2000). Gender shall be considered as a moderator between peer victimization and the proposed risk factors.

Age/Grade Level

Olweus (1991, as cited in Salmivalli, Lappalainen, & Lagerspetz, 1998) conducted a study in which he found that the percentage of youth victimized by peers in grades two to six was twice that found in grades seven through nine. To the knowledge of the present author, no other studies have looked at the pattern of peer victimization across grades or ages. The present study shall consider the pattern of peer victimization across grades seven through twelve and ages twelve through nineteen. Grade shall also be considered as a moderator between peer victimization and the proposed risk factors.

Olweus (1991, as cited in Hanish & Guerra, 2000) found that the perpetrators of peer victimization are more likely to be of the same age or older than their victims and thus it is hypothesized that youth who are younger than their classmates will be more likely to be victimized than those who are older than their classmates. As past research has also shown that being physically weak is associated with greater victimization

(Hodges, Malone, & Perry, 1997) it is also hypothesized that youth who *appear* younger than their peers will be more likely to be victimized by them.

Groupness

Research has shown that gender grouping becomes both prevalent and noticeable with young children whereas ethnic grouping begins to occur later in childhood (Rich Harris, 1998). Once such grouping occurs an “in-group” bias may develop such that individuals from “out-groups” are devalued (Rich Harris, 1998). Research on “in-group” bias suggests that children tend to distinguish groups based on salient characteristics (Rich Harris, 1998). Therefore, one may expect that ethnicities that form visible minorities, which may be readily grouped by children and adolescents, will be more likely to be victimized than Caucasian ethnicities. The present study will evaluate various ethnicities and their relationship to peer victimization. Ethnicities which are considered shall be recoded into groups which are characterized by visible similarities on which they may be grouped and as such reflect the following races; Aboriginal/First Nations, Asian, East Indian, Hispanic, Persian, and Caucasian. The only study to date which has considered the relationship between ethnicity and peer victimization, to the knowledge of the present author, is that conducted by Hanish and Guerra (2000). Using a sample of children from several schools in the United States, Hanish and Guerra found that Hispanic children were less likely to be victimized than either White or African-American children.

Theories of “in-group” bias also form the basis of predictions for relationships between peer victimization and family socioeconomic status (SES), the presence of a disability, body weight and sexual orientation. It is hypothesized that youth form groups based on these factors and exclude or devalue other groups of youth, or individual youth, who possess certain dimensions of these attributes. Thus, individuals with a

given dimension of these attributes may be considered as belonging to an “out-group” by a majority of peers, and therefore be susceptible to peer victimization. However, it is expected that the relationship between peer victimization and disability may be moderated by whether or not others are able to tell that the youth is disabled. Again, this fits with theories of in-group/out-group biases - if the disability is not noticeable it will not be a feature which can be singled out, observed or devalued.

Although ethnicity and family SES are expected to be associated with peer victimization it is likely that these relationships will depend on the larger school composition. For example, the ethnicity of an individual serves as a risk factor of peer victimization, but this relationship has been shown to be moderated by school composition. Hanish and Guerra (2000) found that “ethnic integration in schools correlated with higher victimization of white children, and lower victimization of African-American children” (p. 201), although the two groups did not differ overall. Similarly, it is possible that a correlation between SES and peer victimization would be moderated by school composition such that SES is only a significant predictor of peer victimization when class composition is considered. Being of a different SES than peers is therefore likely to be a better predictor of peer victimization than SES alone. Other possible moderators between SES and peer victimization, in addition to average school SES, could be youth employment and the amount of disposable income that youth have to spend on themselves. It is reasonable to assume that a youth who is employed will be better able to reduce the features that distinguish them from their peers of higher SES. For example, they may be better able to buy popular clothing and participate in social activities with the income they receive from employment. Arguably, it is not employment itself that would necessarily moderate the effect of SES on peer victimization, but perhaps the amount of disposable income that the youth has. To summarize, the

present study will consider the moderating effect of school ethnic composition on the correlation between peer victimization and ethnicity. In addition, the present study will consider the moderating effects of average school SES, youth employment and youth disposable income on the correlation between peer victimization and family SES.

Interpersonal Relationships

Much research has been done on the influences of interpersonal relationships in relation to peer victimization. Research regarding family relationships has shown that children who experience violence at home or who have parents who use harsh parenting styles are more likely to be victimized by peers (Schwartz, Dodge, Pettit, & Bates, 1997, 2000). The quality of maternal relationships has also been correlated with peer victimization, but the relationship differs depending on gender (Finnegan, Hodges, & Perry, 1998; Ladd & Kochenderfer Ladd, 1998). For boys, maternal over-protectiveness or closeness was associated with peer victimization, while for girls, maternal rejection was associated with peer victimization. It is thus hypothesized in the present study that the quality of the maternal relationship, paternal relationship and the overall family relationship will be related to peer victimization, such that high quality relationships are associated with less peer victimization, perhaps with gender differences in regards to the maternal relationship.

Research regarding the influence of peer relationships has shown that simply having a friend is associated with a decreased likelihood of later victimization (Boulton, Trueman, Chau, Whitehand, & Amatya, 1999; Hodges, Boivin, Vitaro, & Bukowski, 1999; Schwartz, Dodge, Pettit, & Bates, 2000). In the present study it is expected that youth who have good relationships with peers and who have friends whom they turn to in times of need will be less likely to be victimized by peers. It is also expected that children who

have moved recently will be more likely to be victimized, as children who move to new schools often experience social and peer relationship difficulties (Rich-Harris, 1998).

As teachers provide another opportunity in which youth may develop positive relationships that may function in much the same way as relationships with peers and parents, the present study will also consider the association between the quality of teacher relationships and peer victimization. To the knowledge of the present author, previous research has not considered the relationship between teacher relationships and peer victimization.

Peer Victimization and Well-Being

A great deal of research has focused on a multitude of outcomes associated with peer victimization. These include depression (Hawker & Boulton, 2000; Rigby & Slee, 1994), low self-esteem (Hawker & Boulton, 2000), anxiety (Hawker & Boulton, 2000; Rigby & Slee, 1994; Slee, 1994), suicidal ideation (Rigby & Slee, 1994), loneliness (Hawker & Boulton, 2000), social withdrawal (Rigby & Slee, 1994; Slee, 1994), poor general physical health (Rigby, 1999; Rigby & Slee, 1994), poor mental health (Rigby, 2000), and decreased desire to attend school (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997). Many of these outcomes tend to occur regardless of age, gender, and type of victimization (Hawker & Boulton, 2000). The factors which have received the most attention within the literature are the first three psychosocial variables mentioned – depression, low self-esteem, and anxiety (Hawker & Boulton, 2000). A recent meta-analysis by Hawker and Boulton (2000) addressed the impact of these three correlates and concluded that depression was the variable most correlated with peer victimization, with anxiety correlating the least. Of these outcome factors the

present study will consider depression, suicidal ideation, suicide attempts, anxiety/stress and physical health, with results expected to be consistent with past findings.

Drug use shall also be considered within the present study. Evidence can be found within the literature to support hypotheses of both a positive and a negative correlation between peer victimization and drug use. In support of the hypothesis that victimized youth will be more likely to use drugs, Dishion and colleagues (Dishion, Patterson, Stoolmiller & Skinner, 1991) found antisocial behaviours, including drug use, to be associated with peer rejection. Further, peer victimization is associated with internalizing problems (Hawker & Boulton, 2000; Hodges & Perry, 1999; Rigby & Slee, 1994; Slee, 1994), and internalizing problems have been associated with drug use (Steinberg, 1999). Alternatively, it is also possible that peer victimization will be negatively correlated with drug use. Youth who are not accepted by their peers are not likely to have the opportunities to engage in antisocial behaviours such as drug use (Moffit, 1993). Thus, research on drug use actually provides support for both hypotheses, suggesting a curvilinear relationship. In fact, Shedler and Block (1990) found that youth who abstained from drugs tended to be socially isolated, youth who experimented (but were not frequent users) tended to be well adjusted and youth who were frequent drug users tended to be alienated and antisocial. Thus, the relationship between the frequency of drug use and peer victimization will be considered in the present study, with an expected curvilinear relationship.

Further outcome variables considered in the present study, which to the knowledge of the present author have not previously been evaluated, include body image, eating disorders, level of academic achievement, academic aspirations and school connectedness. As peer victimization has been correlated with low self-esteem (Hawker & Boulton, 2000), a poor view of the self, it is also a reasonable assumption

that poor body image and eating disorders will also be correlated with peer victimization. As peer victimization has been correlated with a decreased desire to attend school (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997) and poor school adjustment and avoidance (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997), it is expected that peer victimization will be correlated with lower levels of academic achievement and school connectedness.

Research, which has addressed possible moderators between peer victimization and various outcomes has shown that the quality of parental relationships moderate such outcomes (Hodges, Malone, & Perry, 1997). Research has also shown that having friends or being liked by a peer moderates the relationship of peer victimization and both internalizing and externalizing problems (Hodges, Malone, & Perry, 1997). Thus, it is expected that family relationships, teacher relationships, and peer relationships will moderate correlations of peer victimization with the outcome variables proposed. Additional variables considered in the present study that may possibly moderate the outcomes of peer victimization include; gender, grade, school connectedness and academic achievement.

Types of Peer Victimization

Peer victimization has often been conceptually defined in terms of the possible forms in which peer victimization may occur. Four types of victimization have been detailed in the literature including physical, verbal, indirect, and relational victimization. Physical victimization is “any form of victimization in which the victim’s physical integrity is attacked” (Hawker & Boulton, 2000, p. 444). Verbal victimization is any incident in which “the victim’s status is attacked or threatened with words or verbalizations” (Hawker & Boulton, 2000, p. 444). Indirect victimization is “aggression which is enacted through

a third party or so that the aggressor cannot be identified by the victim” (Hawker & Boulton, 2000, p. 444). Finally, relational victimization is “behavior which causes or threatens to cause damage to peer relationships, and particularly to friendship and acceptance” (Hawker & Boulton, 2000, p. 444). The present study assesses verbal, physical threat, and physical forms of victimization. Physical threat is a form of verbal victimization in which the content of the verbal statement(s) is a threat to the individual’s physical well-being. Hawker and Boulton (2000) found that physical, verbal, indirect and relational forms of victimization were highly correlated with one another. The present study shall assess the relationship between the forms of peer victimization assessed in this study, with the prediction that they will be correlated with one another.

The Present Study

The present study is comprised of two parts. In part one the relationship between peer victimization and numerous risk factors are considered, as well as potential moderators between them. Part two considers the relationship between peer victimization and various outcome factors, as well as potential moderators. In each case, as per the advice of Hawker and Boulton (2000), effect sizes of these correlates are considered.

METHOD

The present study uses a cross-sectional correlational design and is exploratory in nature.

Participants

A total of 25,838 students, grades 7 through 12, from both public and private schools in British Columbia participated. Students completed the Adolescent Health Survey - II (AHS) during one class period while at school during the 1997-1998 school year. Classrooms were sampled such that they were representative and proportional to each of the school districts, size of school, and grade level within British Columbia. A total of 43 of the 59 school districts, which possess 69 percent of enrolled students, allowed the survey to be conducted in their schools.

The Adolescent Health Survey

The AHS is conducted by the McCreary Centre Society which is a non-profit organization dedicated to improving youth health in British Columbia through research and community based projects. The AHS is a 127-item pencil and paper survey assessing health and risk behaviours. Questions for the AHS are largely taken from existing youth health surveys. Additional questions developed by the McCreary Centre Society were tested in focus groups and/or pilot tested prior to inclusion in the AHS. The AHS was administered to students by Public Health Nurses in each of the regions. Students were asked to answer the questions as honestly and accurately as possible. Participation was voluntary and students were told that their responses would be kept

anonymous and confidential. The questions selected from the survey for the purpose of the present study are detailed below.

Peer Victimization (Appendix A)

Questions contained within the AHS address both physical and verbal peer victimization. In particular, the first question asks about verbal peer victimization “verbal”, the second about physical threats by peers “physical threat”, and the third about physical peer victimization “physical”. These questions were taken from the *National Longitudinal Survey of Children and Youth* (Statistics Canada and Human Resources Development Canada [Statistics Canada and HRDC], 1994). Each question used a four-point scale on which the youth indicated the number of times they experienced each form of victimization, from never to three or more times, within the last year. Confirmatory factor analysis was used to determine whether or not a weighted score “peer victimization” could be used based on these three questions.

Part 1: Risk Factors

Gender (Appendix B)

Students were asked to indicate their sex as either male or female “gender”.

Age/Grade Level (Appendix C)

Students were asked to indicate their age “true age”, grade level “grade” and whether they appeared younger or older than their peers “apparent age”. Age-grade discrepancies were also calculated in which the student’s age was subtracted from the mean age for their grade level “age-grade discrepancy”.

Ethnicity (Appendix D)

A question within the AHS asked students to indicate their ethnicity or the cultural group to which they belong. Ethnicities within this list were recoded based on the race of which, in the greatest likelihood, the individual would belong “ethnicity”. These include Aboriginal/First Nations, Asian (Chinese, Filipino, Japanese, Korean, Vietnamese), East Indian, Hispanic, Persian, and Caucasian (British, Dutch, French, German, Irish, Italian, Jewish, Polish, Portuguese, Scottish, Ukrainian). These groupings were also used to determine the ethnic composition of the school the youth attended. In particular, the percentage of youth of each ethnicity in each of the schools was considered (“school Aboriginal proportion”, “school Asian proportion”, “school East Indian proportion”, “school Hispanic proportion”, “school Persian proportion”, and “school Caucasian proportion”, respectively).

Family Socioeconomic Status (Appendix E)

Family SES was assessed using an individual question which asked youth how well off their family is “family SES” and a socioeconomic index “SES index” based on multiple questions (Statistics Canada and HRDC, 1994). This SES index is comprised of questions regarding parental employment, the family receiving social assistance, the number of vehicles owned by the family, and whether or not the youth has their own bedroom. Both methods of assessing the youths’ family SES were each considered separately in order to calculate mean responses for each school (“average school family SES” and “average school SES index”, respectively).

Youth Employment and Disposable Income (Appendix F)

Two questions assessed the employment status and finances of youth. The first question asked youth to indicate the number of hours they work weekly “youth employment”. The second question was taken from the cross-national survey *Health Behaviour in School-Aged Children* (World Health Organization [WHO], 1983) and asked youth to indicate the amount of money they have to spend on themselves weekly “youth disposable income”.

Disability (Appendix G)

Questions regarding disabilities included in the AHS asked about physical disability (deafness, cerebral palsy, wheelchair, etc.), long-term illness (diabetes, asthma, etc.), mental or emotional condition (depression, eating disorder, etc.) and being overweight or underweight (Adolescent Health Program, 1986). These questions were recoded into a single variable indicating whether or not the youth has a disability “disability”. A second question queried whether or not these health conditions or disabilities are noticeable to others “visibility of disability” (Adolescent Health Program, 1986).

Body Weight (See Appendix H)

A question asked youth to indicate what they thought of their body weight, whether they considered themselves over-weight, under-weight or the right weight “body weight” (Centres for Disease Control and Prevention, 1990).

Sexual Orientation (See Appendix I)

A question asked youth to indicate whether or not they are heterosexual, bisexual or homosexual while also including the possible responses of ‘mostly

heterosexual', 'mostly homosexual' and 'not sure' "sexual orientation" (Adolescent Health Program, 1986).

Family Connectedness (Appendix J)

A family connectedness scale, taken from the *National Longitudinal Study of Adolescent Health* (Carolina Population Centre, 1995), was included in the AHS. The family connectedness scale is composed of three parts; connectedness between youth and mother "maternal connectedness", youth and father "paternal connectedness", and between the youth and the family in general "family connectedness". These three subscales are made up of a total of eleven items which are combined to provide a composite score for overall family connectedness "overall family connectedness". Particular items regarding connectedness with parents include how close the youth feels to his or her parents, how much he or she thinks their parents care about him or her, how warm and loving the youth's parents act towards him or her, and overall satisfaction with the child-parent relationship. Items which comprise the family connectedness subscale portion of the overall score include the extent to which the youth feels family members understand him or her, the extent to which family members pay attention to him or her, and the amount of fun the family has together.

Teacher Relationships (Appendix K)

A scale assessing the quality of teacher relationships, taken from the *National Longitudinal Study of Adolescent Health* (Carolina Population Centre, 1995), was included in the AHS. This scale is composed of three questions which assess the youth's feelings towards their teachers and any difficulties they may have had while interacting with their teachers. A composite score was used "teacher relationships".

Peer Relationships (Appendix L)

Although the questions included in appendix L regarding peer relationships, as taken from the *National Longitudinal Study of Adolescent Health* (Carolina Population Centre, 1995), do not appear to be good measures of the *presence* of peer relationships they do provide information as to the quality of peer relationships and as to whether or not youth will turn to a peer when faced with difficulties. The first question provides information as to the quality of peer relationships as it asked youth whether or not they have difficulty with peers “peer relationships”. The second question assessed whether or not a youth would prefer to talk to a friend about their difficulties (with family, depression, birth control, drugs/alcohol, physical illness, etc.) rather than talking to family, teachers or professionals “talk to peer(s)”.

Moved Recently (Appendix M)

This question asked youth how many years they have lived at their present address, in years, from less than one year to three or more years “moved recently”. This question was also recoded into a dichotomous item indicating whether or not the youth had moved within the past year “moved within last year”.

Part 2: Outcome Factors***Depression (Appendix N)***

Several questions related to the experience of depression either subjectively or through specific symptoms. The two subjective questions asked youth whether or not they had been feeling low “feeling low” during the past six months (WHO, 1983) and whether or not they had felt so sad, discouraged, hopeless or had so many problems that they wondered if anything was worthwhile during the past 30 days “feel hopeless”

(Adolescent Health Program, 1986). Questions regarding specific symptoms of depression include the symptoms of sleep difficulties “sleep difficulties”, irritable mood “bad mood” and wanting to be alone “be alone” (WHO, 1983). Confirmatory factor analysis was used to determine whether or not these questions could be treated as a composite score “depression”.

Suicidal Ideation and Attempts (Appendix O)

Several questions within the AHS, as taken from the *Youth Risk Behaviour Surveys* (Centers for Disease Control and Prevention, 1990), assess suicidal ideation and attempts. Questions considered as indicators of suicidal ideation asked whether the youth had ever thought about attempting suicide “considered suicide” and whether or not they had made a plan as to how they would do so “planned suicide”. Further questions asked youth how many times they have attempted suicide within the last 12 months “attempted suicide” (also recoded as to whether or not an attempt was made in the last year “attempted suicide (recoded)”) and if so whether it resulted in injury or their being treated by a doctor or nurse “injury from suicide attempt”.

Anxiety/Stress (Appendix P)

Questions assessing anxiety and stress asked the youth about feelings of nervousness, within the last month “nerves” (Adolescent Health Program, 1986) and last six months “nervousness” (WHO, 1983), and whether they had experienced any strain, stress or pressure in the last month “stress” (Adolescent Health Program, 1986). Confirmatory factor analysis was used to determine whether or not these questions could be treated as a composite score “anxiety/stress”.

Physical Health (Appendix Q)

General physical health was assessed by a question asking youth to describe their health as excellent, good, fair, or poor “physical health” (Adolescent Health Program, 1986). Similarly, the presence of illness within the prior 30 days was considered “recent illness” (Adolescent Health Program, 1986), as well as the individual symptoms of headaches “headaches”, stomach-aches “stomachaches”, backaches “backaches”, dizziness “dizziness”, and skin irritations “skin irritations” (WHO, 1983). Confirmatory factor analysis was used to determine whether or not these questions could be treated as a composite score “general health”.

Drug Use (Appendix R)

Several questions within the survey concerned drug use. Youth were asked whether or not they had ever used cigarettes “cigarette use”, alcohol “alcohol use” and marijuana “marijuana use” and how often they had used each of these substances in the last 30 days (“frequency of cigarette use”, “frequency of alcohol use” and “frequency of marijuana use”, respectively) (Centers for Disease Control and Prevention, 1990). Youth were further asked how often during their life they had used cocaine “cocaine use – frequency”, hallucinogens “hallucinogen use – frequency”, mushrooms “mushroom use – frequency”, bindro “bindro use – frequency”, inhalants “inhalant use – frequency”, amphetamines “amphetamine use – frequency”, heroin “heroin use – frequency”, steroids “steroid use – frequency”, or non-prescribed prescription medication “non-prescribed prescription medication use – frequency”, and whether they had ever injected an illegal drug “injected drug – frequency” (Adolescent Health Program, 1986). These questions were also recoded into dichotomous variables, as to whether or not the youth had ever used these substances (“cocaine use”, “hallucinogen

use”, “mushroom use”, “bindro use”, “inhalant use”, “amphetamine use”, “heroin use”, “steroid use”, “non-prescribed prescription medication use” and “injected” respectively). These questions were entered into two confirmatory factor analyses. The first confirmatory factor analysis considered whether or not the youth had tried the above mentioned substances “drug use” and the second confirmatory factor analysis considered the frequency with which the youth had used these substances “drug use frequency”.

Body Image and Eating Disorders (Appendix S)

The first question assessing body image asked youth to rate how satisfied they were with how their body looks (on a scale from 1 – not at all satisfied to 7 – very satisfied) “body satisfaction”. The second question asked them to indicate whether or not they were trying to gain or loss weight “weight management goals” (Centres for Disease Control and Prevention, 1990).

The presence of an eating disorder was determined based on the youth’s responses to various questions. Such questions asked whether or not the youth had used laxatives “laxative use”, diet pills “use of diet pills”, oral purging or bingeing within the last week (Adolescent Health Program, 1986). Two questions assessed oral purging behaviour, the first asked about the presence of purging within the prior week and the second asked about the frequency that the youth orally purges “purging frequency” (Adolescent Health Program, 1986). These two questions were recoded into a dichotomous variable as to whether or not the youth orally purges “purging”. Two questions assessed bingeing behaviour, the first asked about the presence of bingeing within the prior week and the second asked about the frequency that the youth binges “bingeing frequency” (Adolescent Health Program, 1986). These two questions were

also recoded into a dichotomous variable as to whether or not the youth binges “binges”. Each of these forms of eating disorders was considered separately in addition to being recoded into a dichotomous variable indicating whether or not an eating disorder was present “eating disorder”. Other methods used to loose weight, such as dieting “dieted” and exercise “exercise” were also considered (Adolescent Health Program, 1986).

Academic Achievement (Appendix T)

Two questions assessed academic achievement. The first question asked about the youth’s present academic performance “current academic achievement” and the second about their future aspirations “academic aspirations” (the level of education they wish to attain).

Desire to Attend School (Appendix U)

Desire to attend school was assessed with three questions. The first question asked youth how they felt about school “feel about school” (Adolescent Health Program, 1986), the second question asked whether they were happy at their school “happy at school” (Carolina Population Centre, 1995) and the third question asked youth if they had skipped/cut class in the last month “cutting class”.

School Connectedness (Appendix V)

A scale assessing school connectedness, taken from the *National Longitudinal Study of Adolescent Health* (Carolina Population Centre, 1995), was included in the AHS. Specific questions included in the scale questioned the youth as to their teacher relationships, peer relationships, feelings about school, feelings of belonging at school and feeling safe at school. A composite score was used “school connectedness”.

Data and Statistical Analysis

Of the 25,837 students who completed the AHS, 25,001 responded to all of the peer victimization questions and thus were able to be considered in the analyses. As many factors were considered throughout this study, excluding youth who did not respond to one of the related factors would have resulted in an unnecessarily reduced sample. Thus, for each given analysis those of the 25,001 youth who completed the necessary questions were included and those who did not were excluded for that given analysis alone. Thus the sample size differs for each analysis conducted.

Confirmatory factor analyses were conducted for all multiple question constructs (“peer victimization”, “anxiety/stress”, “depression”, “drug use”, “drug use frequency” and “general health”), with the exception of scales used previously in other studies, in order to determine whether or not using a combined score was justified. When confirmatory factor analyses confirmed unidimensionality the weighted score was used for all analyses. For instances in which unidimensionality was not found, the individual questions were treated separately.

Due to the large sample size of the present study, the sampling problem is, essentially, non-existent. Thus, analyses treat the sample as a population, and effect sizes, rather than significance levels, are considered.

Descriptive statistics were produced for all variables studied. First order correlations for both risk and outcome factors with peer victimization were considered before moderators were evaluated. The relationships among these variables was quantified by Pearson product moment correlation effect sizes (for continuous variables) and omega squared (for discontinuous variables or for those which theory could predict a nonlinear relationship). Hypotheses of moderation were tested through the use of regression analyses, with each of the variables entered first, followed by their product

term. All variables were centred in order to prevent both multicollinearity and the evaluation of “one main effect at an extreme value of the other main effect” (Howel, 2002).

RESULTS

Test Theory Considerations

Confirmatory factor analyses were conducted for all multiple question constructs (“peer victimization”, “anxiety/stress”, “depression”, “drug use”, “drug use frequency” and “general health”), with the exception of scales used previously in other studies, in order to determine whether or not using a combined score was justified.

Peer Victimization

The three peer victimization questions, which addressed verbal victimization “verbal”, physical threats “physical threat”, and physical victimization “physical”, were entered into a confirmatory factor analysis. Results demonstrated unidimensionality for the three questions (Least Squares Chi-Square=0.00, $P=1.00$) thus indicating an underlying factor of peer victimization “peer victimization”. Weightings were 0.48, 0.86 and 0.29 for each of verbal victimization, physical threats and physical victimization questions respectively (Omega Coefficient=0.664). A single composite score was thus used for remaining analysis. All further reference to the variable peer victimization shall refer to the use of this weighted composite peer victimization score “peer victimization” unless otherwise stated.

Anxiety/Stress

The questions addressing anxiety and stress, which addressed feelings of nervousness “nervousness” (past 6 months), being under any strain, stress or pressure “stress” (last 30 days), and being bothered by nerves “nerves” (last 30 days), were entered into a confirmatory factor analysis. Results demonstrated unidimensionality for

the three questions (Least Squares Chi-Square=0.00, $P=1.00$) thus indicating an underlying factor of anxiety/stress. Weightings were 0.64, 0.77 and 1.00 for each of the questions respectively (Omega Coefficient=0.840). A single composite score was thus used for remaining analysis “anxiety/stress”.

Depression

Questions addressing depression and depression symptoms, which asked about feeling low “feeling low”, having sleep difficulties “sleep difficulties”, irritable mood “bad mood”, wanting to be alone “be alone” and feeling so sad, discouraged, hopeless or having so many problems that they questioned if anything is worthwhile “feel hopeless”, were entered into a confirmatory factor analysis. Results did not demonstrate unidimensionality for the five questions (Least Squares Chi-Square=630.89, $P=0.00$) indicating the absence of an underlying factor of depression “depression” among these questions. As the questions were not unidimensional a composite score could not be calculated. Instead, only two questions were considered (separately) in further analyses – feeling low “feeling low” and feeling so sad, discouraged, hopeless or having so many problems that they questioned if anything is worthwhile “feel hopeless”. These two questions were selected because they have face validity and are more direct measures of depression than the remaining questions, which although they are symptoms of depression, are not exclusively associated with depression.

Physical Health

The six questions relating to physical health, both general questions regarding overall physical health “physical health” and recent illness “recent illness” as well as the more specific health related symptoms of headaches “headaches”, stomach-aches “stomachaches”, backaches “backaches”, dizziness “dizziness” and skin irritations “skin

irritations”, were entered into a confirmatory factor analysis. Results did not demonstrate unidimensionality (Least Squares Chi-Square=978.08, $P=0.00$) indicating the absence of an underlying factor of general physical health “general health” among these questions. As the questions were not unidimensional a composite score could not be calculated. Instead, questions addressing overall physical health and recent illness were considered (separately) in further analyses.

Drug use

Questions addressing drug use were entered into two confirmatory factor analyses. The first set of questions referred to whether or not the youth had tried various substances, including cigarettes “cigarette use”, alcohol “alcohol use”, marijuana “marijuana use”, cocaine “cocaine use”, hallucinogens “hallucinogen use”, mushrooms “mushroom use”, bindro “bindro use”, inhalants “inhalant use”, amphetamines “amphetamine use”, heroin “heroin use”, steroids “steroid use”, non-prescribed prescription medication “non-prescribed prescription medication use” and injected substances “injected”. The second set of questions assessed the frequency with which the youth had used these substances within the last thirty days (“frequency of cigarette use”, “frequency of alcohol use”, “frequency of marijuana use”, “cocaine use – frequency”, “hallucinogen use – frequency”, “mushroom use – frequency”, “bindro use – frequency”, “inhalant use – frequency”, “amphetamine use – frequency”, “heroin use – frequency”, “steroid use – frequency”, “non-prescribed prescription medication use – frequency”, and “injected drug – frequency”). Results for the first set of questions did not demonstrate unidimensionality (Least Squares Chi-Square=36460.10, $P=0.00$) indicating the absence of an underlying factor of trying or experimenting with drugs “drug use”. As the questions were not unidimensional a composite score could not be calculated. Instead, each question was considered separately in further analyses. Results for the

second set of questions also did not demonstrate unidimensionality (Least Squares Chi-Square=48336.19, $P=0.00$) indicating the absence of an underlying factor of using drugs “drug use frequency”. As the questions were not unidimensional a composite score could not be calculated. Instead, each question was considered separately in further analyses.

Peer Victimization

Descriptive Statistics

See Table 1 for descriptive statistics of the three forms of peer victimization and the weighted score. The majority of youth who participated, 56.7 percent, reported that they have been verbally victimized by peers in the last year “verbal”, with an overall mean of approximately once a year. The majority of youth, 68.8 percent, reported never having been physically threatened by peers “physical threat”, with an overall mean of approximately 0.5 times a year. Most youth, 88.5 percent, have never been physically victimized by peers “physical”, with an overall mean of approximately 0.2 times a year. Thus, verbal forms of peer victimization “verbal” are more likely than physical threats “physical threat”, which in turn are more likely than physical harm “physical” (means of 2.03, 1.55, and 1.18 respectively). In each case the responses are skewed with most youth not having been victimized by peers. The weighted peer victimization total score “peer victimization” used for data and statistical analysis has a mean of 2.6502 ($n=25001$, $\text{min}=1.63$, $\text{max}=6.52$), scores are again skewed with lower scores being more frequent.

Table 1:**Descriptive Statistics for Peer Victimization**

Form of Peer Victimization	<i>M</i> ^a	<i>SD</i> ^b	Kurtosis	Skewness	<i>N</i> ^c	Freq.	Scale
Verbal	2.03	1.106	-.922	.683	25001	43.3% 27.3% 12.8% 16.6%	1=never 2=once 3=twice 4=3 or more
Physical Threat	1.55	.945	1.339	1.616	25001	68.8% 16.4% 6.3% 8.7%	1=never 2=once 3=twice 4=3 or more
Physical	1.18	.584	12.645	3.567	25001	88.6% 6.9% 2.0% 2.5%	1=never 2=once 3=twice 4=3 or more
Weighted Score	2.65	1.214	1.102	1.356	25001		1.63 (min) – 6.52 (max)

^a Mean

^b Standard deviation (measure of dispersion)

^c Size of data set (number of respondents)

Part 1: Risk Factors

Descriptive Statistics

See Appendices V and W for descriptive statistics of risk factors.

Ethnicity

As indicated in Appendix W, the present sample contains 1482 Aboriginal/First Nations youth (approximately 6% of the sample), 3014 Asian youth (approximately 12% of the sample), 827 East Indian youth (approximately 3% of the sample), 234 Hispanic youth (approximately 1% of the sample), 114 Persian youth (approximately .5% of the sample), and 11,252 Caucasian youth (approximately 45% of the sample). Of the

remaining youth, 5131 did not know what their ethnicity was (approximately 20% of the sample) and 2947 did not respond to the question (approximately 12% of the sample).

Zero Order Correlations

Zero order correlations between risk factors and peer victimization “peer victimization” are listed in Table 2. They are rank ordered from greatest to least based on the amount of variance explained for each variable. Variables with the greatest relationships with peer victimization include getting along with peers “peer relationships” (which explains 15.4% of the associated variance), gender “gender” (which explains 9.8% of the associated variance), teacher relationships “teacher relationships” (which explains 4.2% of the associated variance), family connectedness “family connectedness” (which explains 3.7% of the associated variance) and disability “disability” (which explains 3.2% of the associated variance).

Table 2:**Pearson's Product Moment Correlations and ANOVA's for Risk Factors and Peer Victimization Composite Score - Rank Ordered from Largest to Smallest Effect Sizes**

Factor	Statistic	F ^a	F ^b	Pearson's ^c	K ^d	Effect Size ^e	Omega ^{2f}	Scale
Peer Relationships	Pearson's	.000		-.393		.154		Continuous
Gender	ANOVA	45.561	.000				.098	Discrete
Teacher Relationships	Pearson's	.000		-.207		.043		Continuous
Family Connectedness								
Overall	Pearson's	.000		-.194		.038		Continuous
Mother	Pearson's	.000		-.145		.021		Continuous
Father	Pearson's	.000		-.144		.021		Continuous
Family	Pearson's	.000		-.201		.040		Continuous
Disability	ANOVA	13.468	.000		K=2		.031	Discrete
Grade	ANOVA	12.935	.000		K=7		.030	Discrete
Talk to Peer(s)	ANOVA	11.463	.000		K=2		.026	Discrete
True Age	ANOVA	10.836	.000				.025	Discrete
Body Weight	ANOVA	7.117	.000		K=5		.017	Discrete
SES Index	ANOVA	2.572	.000		K=3		.007	Discrete
Average School SES Index	ANOVA	2.401	.000				.006	Continuous
Sexual Orientation	ANOVA	2.212	.000		K=6		.005	Discrete
Moved Within Last Year	ANOVA	2.091	.000		K=2		.005	Discrete
Apparent Age	ANOVA	2.045	.000				.005	Discrete
Family SES	Pearson's	.000		-0.067		.005		Continuous
Class Composition: Caucasian	Pearson's	.000		.038		.001		Continuous
Moved Recently	Pearson's	.000		-.034		.001		Continuous
Ethnicity	ANOVA	1.314	.054		K=7		NS	Discrete
Average School Family SES	ANOVA	1.245	.098				NS	Continuous
Age-Grade Discrepancy	ANOVA	.931	.626				NS	Discrete
Noticeable Disability	ANOVA	13.462	.000		K=3		.032	Discrete
Youth Employment	Pearson's	.000		.044		.002		Continuous
Youth Disposable Income	Pearson's	.052		-.012		NS		Continuous

^a Ratio of between variance to within variance

^b p observed, the level of significance

^c Pearson product moment correlation coefficient

^d Number of levels of the independent variable

^e Squared Pearson product moment correlation coefficient indicating proportion of variance accounted for by the independent variable

^f Proportion of variance accounted for by the independent variable when an ANOVA was conducted

Gender

Results of a one-way ANOVA revealed a correlation between gender “gender” and peer victimization “peer victimization” with 9.8% of the variance explained ($\bar{x} = 2.74$ and 2.56, for males and females respectively).

Age/Grade Level

Results of a one-way ANOVA revealed a correlation between age “true age” and peer victimization “peer victimization” with 2.5% of the variance explained ($\bar{x} = 2.62, 2.72, 2.80, 2.72, 2.64, 2.48, 2.43,$ and 2.43 , for ages 12 and younger, 13, 14, 15, 16, 17, 18, and 19 and older respectively). Results of a one-way ANOVA revealed a correlation between grade “grade” and peer victimization “peer victimization” with 2.9% of the variance explained ($\bar{x} = 2.65, 2.75, 2.79, 2.72, 2.57,$ and 2.43 , for grades 7 through 12 respectively). The result of a one-way ANOVA considering peer victimization “peer victimization” and apparent age “apparent age” relative to classmates was not significant ($p=.626$), as was a one-way ANOVA considering the youth’s age relative to classmates “age-grade discrepancy” and peer victimization “peer victimization” ($p=.931$).

Ethnicity

The result of a one-way ANOVA considering peer victimization “peer victimization” and ethnicity “ethnicity” yielded a non-significant result. A Pearson’s product moment correlation revealed that less than 1% of the variance associated with peer victimization “peer victimization” was accounted for by the percentage of Caucasian students in the youth’s school “school Caucasian proportion”. When Pearson product moment correlations were conducted between peer victimization “peer victimization” and the proportion of Caucasians in the youth’s school “school Caucasian proportion” for

each of the ethnicities separately (see Table 3), the only significant effect accounted for less than 1% of the variance. When Pearson product moment correlations were conducted between peer victimization “peer victimization” and the proportion of students of the youth’s own ethnicity in their school, for each of the ethnicities separately (“school Aboriginal proportion”, “school Asian proportion”, “school East Indian proportion”, “school Hispanic proportion”, “school Persian proportion”, and “school Caucasian proportion”), the only significant effect accounted for less than 1% of the variance (see Table 4).

Table 3:

Pearson’s Product Moment Correlations for Caucasian Class Composition and Peer Victimization – Considered for Each Ethnicity Separately

Factor	Statistic	p^a	Pearson’s ^b	Effect Size ^c	Scale
Native	Pearson’s	.846	-.005	NS	Continuous
Asian	Pearson’s	.104	.030	NS	Continuous
East Indian	Pearson’s	.043	.071	.002	Continuous
Hispanic	Pearson’s	.988	-.001	NS	Continuous
Persian	Pearson’s	.902	-.012	NS	Continuous
Caucasian	Pearson’s	.329	-.009	NS	Continuous

^a p observed, the level of significance

^b Pearson product moment correlation coefficient

^c Squared Pearson product moment correlation coefficient indicating proportion of variance accounted for by the independent variable

Table 4:***Pearson's Product Moment Correlations for Class Composition of Youth's Own Ethnicity and Peer Victimization – Considered for Each Ethnicity Separately***

Factor	Statistic	p^a	Pearson's ^b	Effect Size ^c	Scale
Native	Pearson's	.260	.029	NS	Continuous
Asian	Pearson's	.035	-.038	.001	Continuous
East Indian	Pearson's	.142	-.051	NS	Continuous
Hispanic	Pearson's	.611	-.033	NS	Continuous
Persian	Pearson's	.513	.062	NS	Continuous
Caucasian	Pearson's	.329	-.009	NS	Continuous

^a p observed, the level of significance

^b Pearson product moment correlation coefficient

^c Squared Pearson product moment correlation coefficient indicating proportion of variance accounted for by the independent variable

Family Socioeconomic Status

The result of a one-way ANOVA revealed that less than 1% of the variance associated with peer victimization “peer victimization” was accounted for by family SES as determined using the SES index “SES Index”. Likewise, a Pearson's product moment correlation revealed that less than 1% of the variance associated with peer victimization “peer victimization” was accounted for by youth's perception of how well-off his or her family is “family SES”. The result of a one-way ANOVA revealed that less than 1% of the variance associated with peer victimization “peer victimization” was accounted for by the mean family SES index score of the school each youth attended “average school SES index”. The result of a one-way ANOVA considering peer victimization “peer victimization” and the mean school SES as defined by youths perception of their families' SES ” average school family SES”, was not significant ($p=.098$).

Two further sets of analyses considered each level of the SES index score “SES index” (high, medium and low SES), and each of the five possible responses to the question regarding youth’s perceptions of their family’s SES “family SES”, separately in Pearson product moment correlations between peer victimization “peer victimization” and mean family SES index score of the school each youth attended “average school SES index” and the mean school SES as defined by youths’ perception of their families’ SES “average school family SES”, respectively. Each SES group of the SES index “SES index” accounted for less than 1% of the associated variance or was not significant (see Table 5). The second analysis, considering youths’ perceptions of their families’ SES (instead of the SES groupings), did not yield any significant results (see Table 6).

Table 5:

Pearson’s Product Moment Correlations for Mean Class SES Index “average school SES index” and Peer Victimization – Considered for Each SES Index Level Separately

Factor	Statistic	p^a	Pearson’s ^b	Effect Size ^c	Scale
Low SES	Pearson’s	.023	.036	.001	Continuous
Medium SES	Pearson’s	.920	.001	NS	Continuous
High SES	Pearson’s	.039	-.029	.001	Continuous

^a p observed, the level of significance

^b Pearson product moment correlation coefficient

^c Squared Pearson product moment correlation coefficient indicating proportion of variance accounted for by the independent variable

Table 6:***Pearson's Product Moment Correlations for Mean Class SES "average school family SES" and Peer Victimization – Considered for Each SES Level Separately***

Factor	Statistic	p^a	Pearson's ^b	Effect Size ^c	Scale
Not at All Well-Off	Pearson's	.059	.092	NS	Continuous
Not Very Well-Off	Pearson's	.355	.022	NS	Continuous
Average	Pearson's	.300	.010	NS	Continuous
Well-Off	Pearson's	.394	.010	NS	Continuous
Very Well-Off	Pearson's	.597	-.011	NS	Continuous

^a p observed, the level of significance

^b Pearson product moment correlation coefficient

^c Squared Pearson product moment correlation coefficient indicating proportion of variance accounted for by the independent variable

A Pearson's product moment correlation revealed that less than 1% of the variance associated with peer victimization "peer victimization" was accounted for by youth employment "youth employment". A Pearson's product moment correlation between peer victimization "peer victimization" and a youth's disposable income "youth disposable income" was not significant ($p=0.052$). Considering youth employment "youth employment" and disposable income "youth disposable income" as moderators between peer victimization and family SES "SES index" "family SES" did not increase the proportion of explained variance more than 1%.

Disability

A one-way ANOVA revealed that 3.1% of the variance was accounted for by the presence of a disability "disability". Youth with disabilities were more likely to be victimized ($\bar{x}=3.13$) than their peers without disabilities ($\bar{x}=2.57$).

Body Weight

Results of a one-way ANOVA revealed that 1.7% of the variance was accounted for by the body weight of the youth "body weight". Youth who felt they were very overweight, slightly overweight, slightly underweight, and very underweight had higher peer victimization scores (\bar{x} =2.9, 2.7, 2.7, and 3.2, respectively) than youth who thought their weight was about right (\bar{x} =2.5).

Sexual Orientation

The result of a one-way ANOVA revealed that less than 1% of the variance associated with peer victimization "peer victimization" was accounted for by youth's sexual orientation "sexual orientation".

Family Connectedness

A Pearson's product moment correlation revealed that 3.8% of the variance associated with peer victimization "peer victimization" was accounted for by overall family connectedness "overall family connectedness", 2.1% for connectedness with mother "maternal connectedness", 2.1% for connectedness with father "paternal connectedness" and 4.0% with the family in general "family connectedness". In all cases greater connectedness was associated with less peer victimization.

Teacher Relationships

A Pearson's product moment correlation revealed that 4.3% of the variance associated with peer victimization was accounted for by the quality of teacher relationships "teacher relationships". Better teacher relationships were associated with less peer victimization.

Peer Relationships

A Pearson's product moment correlation revealed that 15.4% of the variance associated with peer victimization "peer victimization" was accounted for by how well the youth got along with peers "peer relationships". A one-way ANOVA revealed that 2.6% of the variance associated with peer victimization "peer victimization" was accounted for by talking to a friend first about important issues "talk to peer(s)". Youth who get along well with their peers were less likely to be victimized by peers. In contrast, youth who go to a friend first to talk about important issues are more likely to be victimized by their peers ($\bar{x}=2.67$) than those who do not ($\bar{x}=2.59$).

As these two findings are contradictory, further analyses were conducted to consider possible explanations (see Table 7). One possible explanation is that youth who talk to friends about important issues first do so because they do not have good relationships with family and teachers. Thus, when faced with difficulties they feel limited to discuss these issues with peers. A Pearson's product moment correlation revealed that 1.5% of the variance associated with talking to a friend first about an important issue "talk to peer(s)" was accounted for by overall family connectedness "overall family connectedness". Indeed, youth who go to a friend first to talk about important issues report lower levels of family connectedness ($\bar{x}=37.67$) than those who do not ($\bar{x}=39.74$). The result of a Pearson's product moment correlation revealed that less than 1% of the variance associated with talking to a friend about important issues first "talk to peer(s)" was accounted for by the quality of teacher relationships "teacher relationships".

Table 7:**ANOVA's for Talking to a Peer about Difficulties and Parent and Teacher Connectedness**

Factor	Statistic	F ^a	p ^b	K ^c	Omega ^{2d}	Scale
Overall Family Connectedness	ANOVA	372.034	.000	K=2	.016	Continuous
Teacher Relationships	ANOVA	30.352	.000	K=2	.001	Continuous

^a Ratio of between variance to within variance

^b p observed, the level of significance

^c Number of levels of the independent variable

^d Proportion of variance accounted for by the independent variable when an ANOVA was conducted

Moved Recently

A Pearson's product moment correlation revealed that less than 1% of the variance associated with peer victimization "peer victimization" was accounted for by a youth's having moved within the last few years "moved recently".

Moderators

The moderating effects of gender "gender" and grade "grade" on the relationship between these above mentioned risk factors and peer victimization are detailed in Appendix Y. In all cases considering gender and age as moderators did not increase the proportion of explained variance more than 1%.

Part 2: Outcome Factors**Descriptive Statistics**

See Appendix Y and Z for descriptive statistics of outcome factors.

Zero Order Correlations

Zero order correlations between outcome factors and peer victimization “peer victimization” are listed in Table 8. They are rank ordered from greatest to least in terms of the amount of variance explained by each variable. Variables with the greatest relationships with peer victimization “peer victimization” include school connectedness “school connectedness” (which accounts for 10.1% of the variance), anxiety/stress “anxiety/stress” (which accounts for 7.7% of the variance), feeling low “feeling low” (which accounts for 7.4% of the variance), feelings of hopelessness “feel hopeless” (which accounts for 7.1% of the variance) and suicidal ideation “considered suicide” (which accounts for 5.9% of the variance).

Table 8:**Pearson Product Moment Correlations and ANOVA's for Outcome Factors and Peer Victimization Composite Score - Rank Ordered from Largest to Smallest Effect Sizes**

Factor	Statistic	F ^a	p ^b	Pearson's ^c	K ^d	Effect Omega ^{2f}	Scale Size ^e
School Connectedness	Pearson's		.000	-.318		.101	Continuous
Anxiety/Stress	Pearson's		.000	-.278		.077	Continuous
Feeling Low	Pearson's		.000	-.272		.074	Continuous
Feeling Hopeless	Pearson's		.000	-.267		.071	Continuous
Suicidality							
- Considered Suicide	ANOVA	26.524	.000		K=2	.059	Discrete
- Planned Suicide	ANOVA	22.401	.000		K=2	.051	Discrete
- Attempted Suicide	Pearson ^f		.000	.174		.030	Continuous
- Attempted Suicide (recoded)	ANOVA	18.900	.000		K=2	.043	Discrete
- Injury from Suicide Attempt	ANOVA	4.356	.000		K=3	.010	Discrete
Health							
- Physical Health	Pearson's		.000	.125		.016	Continuous
- Recent Illness	Pearson's		.000	-.218		.048	Continuous
- Headache	Pearson's		.000	-.155		.024	Continuous
- Stomachache	Pearson's		.000	-.151		.023	Continuous
- Backache	Pearson's		.000	-.146		.021	Continuous
- Dizziness	Pearson's		.000	-.195		.038	Continuous
- Skin Irritations	Pearson's		.000	-.111		.012	Continuous
Eating Disorders (see Table 12)						.018 to .007	.039 to .011
Happy at School	Pearson's		.000	-.158		.025	Continuous
Drug Use (see Appendix AB)	ANOVA					.026 to .007	
Body Image							
- Body Satisfaction	Pearson's		.000	-0.156		.024	Continuous
- Feelings About Body	ANOVA	7.117	.000		K=5	.017	Discrete
- Weight Management Goals	ANOVA	10.173	.000		K=4	.024	Discrete
Feel About School	ANOVA	8.007	.000		K=5	.019	Discrete
Current Academic Achievement	ANOVA	6.799	.000		K=7	.016	Discrete
Cutting Class	ANOVA	5.223	.000		K=5	.012	Discrete
Academic Aspirations	ANOVA	2.875	.000		K=6	.007	Discrete

^a Ratio of between variance to within variance

^b p observed, the level of significance

^c Pearson product moment correlation coefficient

^d Number of levels of the independent variable

^e Squared Pearson product moment correlation coefficient indicating proportion of variance accounted for by the independent variable

^f Proportion of variance accounted for by the independent variable when an ANOVA was conducted

Depression

A Pearson's product moment correlation revealed that 7.4% and 7.1% of the variance associated with peer victimization was associated with feeling low "feeling low" and feeling hopeless "feel hopeless" respectively. Youth who reported feeling low and hopeless had higher peer victimization scores than youth who did not.

Suicidal Ideation and Attempts

Results of four one-way ANOVA's, with peer victimization "peer victimization" as the dependent variable, revealed relationships with considering suicide "considered suicide", planning suicide "planned suicide", having made a suicide attempt "attempted suicide" and being injured from a suicide attempt "injury from suicide attempt" that accounted for 6.0, 5.1, 4.3, and 1.0% of the variance respectively. Youth who had considered suicide and who had made a suicide plan had higher peer victimization scores ($\bar{x}=3.3$ and 3.3 respectively) than youth who had not ($\bar{x}=2.5$ and 2.6 respectively). Further, youth who had made one attempt had lower peer victimization scores than youth who had made more than one attempt ($\bar{x}=3.3, 3.6, 3.9,$ and 3.7 for one attempt, 2 or 3 attempts, 4 or 5 attempts, and 6 or more attempts respectively) and the more likely they were to have been injured in such an attempt ($\bar{x}=2.8$ and 3.6 for attempts and attempts resulting in injury respectively).

Anxiety/Stress

A Pearson's product moment correlation revealed that 7.7% of the variance associated with peer victimization "peer victimization" was associated with feelings of anxiety and stress "anxiety/stress". Greater peer victimization was associated with increased feelings of anxiety and stress.

Physical Health

Pearson's product moment correlations revealed that 1.6% and 4.8% of the variance associated with peer victimization "peer victimization" was associated with physical health "physical health" and being bothered by illness recently "recent illness", respectively. Youth with greater peer victimization scores were more likely to report poor physical health and being bothered recently by illness. Further correlations showed that peer victimization "peer victimization" was associated with an increase in specific symptoms such as headaches "headaches", stomach-aches "stomachaches", backaches "backaches", feeling dizzy "dizziness" and skin problems "skin irritations" as well, accounting for 2.4, 2.3, 2.1, 3.8, and 1.1% of the variance respectively.

Drug Use

Multiple one-way ANOVA's were conducted between peer victimization and the use of various drugs, including cigarettes, alcohol, marijuana, cocaine, hallucinogens, mushrooms, bindro, inhalants, amphetamines, heroin, steroids, prescription drugs not belonging to them and drugs requiring injection (see Appendix AB). Two questions in relation to each substance were considered; whether or not the youth had tried the substance and the frequency with which they had used the substance.

Results of eleven one-way ANOVA's, with peer victimization "peer victimization" as the dependent variable, revealed relationships with having tried cigarettes "cigarette use", alcohol "alcohol use", marijuana "marijuana use", cocaine "cocaine use", bindro "bindro use", inhalants "inhalant use", amphetamines "amphetamine use", heroin "heroin use", steroids "steroid use", prescription drugs not belonging to them "non-prescribed prescription medication use" and drugs requiring injection "injected" that accounted for 1.6, 1.8, 1.1, 1.0, 1.7, 2.1, 1.4, 2.1, 1.9, 1.9 and 2.2% of the variance respectively.

Consideration of means (see Table 9) revealed that in each case youth who had tried substances were more likely to be victimized by peers than those who had not. Two additional one-way ANOVA's revealed that less than 1% of the variance associated with peer victimization was accounted for by a youth having tried hallucinogens "hallucinogen use" or mushrooms "mushroom use".

Table 9:

Peer Victimization Means for Having Tried a Drug/Substance

Drug/Substance	Peer Victimization Mean for Not Having Tried the Drug	Peer Victimization Mean for Having Tried a Drug
Cigarettes	2.519	2.749
Alcohol	2.484	2.734
Marijuana	2.577	2.741
Cocaine	2.630	2.852
Hallucinogens*	2.634	2.744
Mushrooms*	2.628	2.733
Bindro	2.642	3.308
Inhalants	2.607	3.232
Amphetamines	2.631	2.946
Heroin	2.635	3.281
Steroids	2.636	3.324
Prescription drugs not belonging to them	2.602	3.038
Drugs requiring injection	2.637	3.571

* did not account for more than 1% of the variance associated with peer victimization

Results of twelve one-way ANOVA's, with peer victimization "peer victimization" as the dependent variable, revealed relationships with the frequency of using cigarettes "frequency of cigarette use", alcohol "frequency of alcohol use", marijuana "frequency of

marijuana use”, cocaine “cocaine use - frequency”, mushrooms “mushroom use - frequency”, bindro “bindro use frequency”, inhalants “inhalant use - frequency”, amphetamines “amphetamine use - frequency”, heroin “heroin use - frequency”, steroids “steroid use - frequency”, prescription drugs not belonging to them “non-prescribed prescription medication use - frequency”, and drugs requiring injection “injected drug - frequency” that accounted for 1.1, 1.3, 1.3, 1.0, 1.7, 2.6, 1.3, 2.3, 2.0, 2.0 and 2.2% of the variance respectively. A consideration of means (see Appendix AB and Tables 10 and 11) revealed that, for the most part, the more frequently a youth used each of these substances the greater their peer victimization score. An additional one-way ANOVA revealed that less than 1% of the variance associated with peer victimization “peer victimization” was accounted for by the frequency with which youth used hallucinogens “hallucinogen use - frequency”.

Table 10:

Peer Victimization Means for Frequency of Using a Substance

Drug	0 times	1-2 times	3-9 times	10+ times
Cocaine	2.630	2.857	2.929	2.780
Hallucinogens*	2.634	2.766	2.727	2.702
Mushrooms	2.628	2.729	2.701	2.790
Bindro	2.642	3.174	3.133	3.898
Inhalants	2.606	3.085	3.534	3.688
Amphetamines	2.631	2.894	3.142	2.895
Heroin	2.635	3.172	3.299	3.594
Steroids	2.636	3.222	3.334	3.569
Prescription drugs not belonging to youth	2.602	2.930	3.128	3.236
Injection of substance	2.637	3.400	3.746	3.721

* did not account for more than 1% of the variance associated with peer victimization

Table 11:**Peer Victimization Means for Frequency of Using a Substance**

Drug	0 days	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	30 days
Cigarettes	2.584	2.865	2.842	2.865	2.893	2.876	2.800
Alcohol	2.564	2.723	2.758	2.774	2.863	2.912	2.971
Marijuana	2.601	2.758	2.868	2.897	2.740	2.782	

Body Image and Eating Disorders

A Pearson's product moment correlation revealed that 2.4% of the variance associated with peer victimization "peer victimization" was accounted for by body satisfaction "body satisfaction", with lower body satisfaction associated with greater peer victimization. Results of a one-way ANOVA revealed that 2.4% of the variance associated with peer victimization "peer victimization" was accounted for by weight management goals "weight management goals". Youth who are trying to gain or lose weight had higher peer victimization scores ($\bar{x}=2.7$ and 2.7 respectively) than those who were trying to maintain their weight ($\bar{x}=2.5$) or who were not involved in any weight management strategies ($\bar{x}=2.6$).

Table 12 summarizes the statistical analyses conducted concerning eating disorders. These zero order correlations between peer victimization and eating disorders are rank ordered from greatest to least in terms of the amount of variance explained by each variable.

Table 12:***Pearson's Product Moment Correlations and ANOVA's for Eating Disorders and Peer Victimization - Rank Ordered from Largest to Smallest Effect Sizes***

Factor	Statistic	F ^a	p ^b	Pearson's ^c	K ^d	Effect Size ^e	Scale
Eating Disorder	ANOVA	16.147	.000		K=2	.040	Discrete
Bingeing	ANOVA	16.530	.000		K=2	.038	Discrete
Dieted	ANOVA	13.368	.000		K=2	.033	Discrete
Bingeing Frequency	Pearson's		.000	.134		.018	Continuous
Purging	ANOVA	6.197	.000		K=2	.015	Discrete
Use of Laxatives	ANOVA	5.366	.000		K=2	.014	Discrete
Exercise	ANOVA	4.355	.000		K=2	.011	Discrete
Use of Diet Pills	ANOVA	4.155	.000		K=2	.011	Discrete
Purging Frequency	Pearson's		.000	.084		.007	Continuous

^a Ratio of between variance to within variance

^b p observed, the level of significance

^c Pearson product moment correlation coefficient

^d Number of levels of the independent variable

^e Squared Pearson product moment correlation coefficient indicating proportion of variance accounted for by the independent variable

^f Proportion of variance accounted for by the independent variable when an ANOVA was conducted

The result of a one-way ANOVA revealed that 4.0% of the variance associated with peer victimization "peer victimization" was accounted for by eating disorders "eating disorder". Youth with eating disorders had higher peer victimization scores ($\bar{x}=2.9$) than those who did not ($\bar{x}=2.5$). More specifically, further one-way ANOVA's showed that binge eating "binges" and making oneself vomit "purging" were associated with 3.8 and 1.3% of the variance, with youth who binge eat or gorge ($\bar{x}=2.9$) and make themselves vomit ($\bar{x}=3.0$) having higher peer victimization scores than youth who do not ($\bar{x}=2.5$ and 2.6 respectively). Results of four one-way ANOVA's revealed that the weight loss methods of dieting "dieted", exercising "exercise", taking diet pills "use of diet pills" and

taking laxatives “laxative use” were associated with 3.3, 1.1, 1.1, and 1.4% of the variance respectively. Youth who used these methods, dieting, exercising, taking diet pills or taking laxatives, had higher peer victimization scores (\bar{x} =2.8, 2.7, 3.3, 3.4, and 3.0 respectively) than those who were not (\bar{x} =2.6 for each). Pearson product moment correlations revealed that 1.8% of the variance associated with peer victimization “peer victimization” was accounted for by the frequency of bingeing “bingeing frequency” and less than 1% was accounted for by the frequency of purging “purging frequency”. Youth who bingeed with greater frequency had higher peer victimization scores than those who bingeed less frequently.

Academic Achievement

Results of a one-way ANOVA revealed that present academic achievement “current academic achievement” accounts for 1.6% of the variance associated with peer victimization “peer victimization”. Youth who were doing well academically had lower peer victimization scores than youth who were doing poorly (\bar{x} =2.6, 2.6, 2.6, 2.6, 2.8, 3.0, and 3.1 for best in class through to bottom of class). In regards to future aspirations, less than 1% of the variance associated with peer victimization “peer victimization” was accounted for by aspirations “academic aspirations” when an ANOVA was conducted (youths’ plans to complete secondary school, attend college, attend university or to pursue an alternative).

Desire to Attend School

A one-way ANOVA revealed that 1.9% of the variance associated with peer victimization was accounted for by whether or not the youth likes school “feel about school”. Youth who indicated that they hate school are more likely to be victimized by

peers ($\bar{x}=3.0$) than those who did not ($\bar{x}=2.7, 2.6, 2.5$ and 2.6 for not liking school, liking school some, liking school quite a bit and liking school very much, respectively).

A Pearson's product moment correlation revealed that 2.5% of the variance associated with peer victimization can be accounted for by whether or not youth are happy at school "happy at school". Youth who were happy at school had lower peer victimization scores than youth who were not happy at school ($X=2.4, 2.5, 2.8, 2.9$, and 3.1 from strongly agree that they are happy at school to strongly disagree that they are happy at school).

Results of a one-way ANOVA revealed that 1.2% of the variance associated with peer victimization "peer victimization" was accounted for by school attendance "cutting class". Youth who did not cut class within the last month had lower peer victimization scores ($\bar{x}=2.6$) than youth who cut class once or twice ($\bar{x}=2.7$), who in turn had lower peer victimization scores than those who cut class three or more times in the last month ($\bar{x}=2.8$).

School Connectedness

A Pearson's product moment correlation revealed that 10.1% of the variance associated with peer victimization "peer victimization" was accounted for by school connectedness "school connectedness". Youth with higher peer victimization scores tended to have lower levels of school connectedness than youth with lower peer victimization scores.

Moderators

The moderating effects of gender, grade, family connectedness, teacher connectedness, quality of peer relationships, school connectedness and academic

achievement on the relationship between selected outcome factors and peer victimization are detailed in Appendix AC. Selected outcome factors include feeling low “feeling low”, feeling hopeless “feeling hopeless”, having considered suicide “considered suicide”, attempted suicide “attempted suicide”, anxiety/stress “anxiety/stress”, general health “physical health”, recent illness “recent illness”, alcohol use “alcohol use”, smoking cigarettes “cigarette use”, marijuana use “marijuana use”, body satisfaction “body satisfaction”, eating disorders “eating disorder”, academic achievement “current academic achievement” and academic aspirations “academic aspirations”. In all cases considering these moderators did not increase the proportion of explained variance more than 1%.

DISCUSSION

Peer Victimization

Consistent with Hawker and Boulton's (2000) finding the present study found verbal peer victimization "verbal", physical threats by peers "physical threat", and physical peer victimization "physical" to be associated with one another. This finding suggests that although peer victimization may take many forms, these forms can be seen as different manifestations of the same construct, a tendency to be victimized by one's peers. In other words, if a youth is victimized by their peers in one form there is a greater likelihood that they are also victimized by their peers in other forms as well. Such a finding has implications for interventions targeted at victims of peer victimization as it shows that a youth who is observed to be a victim of their peers in one form is also likely being victimized by their peers in other forms as well.

It should be noted that two forms of peer victimization, relational and indirect, were not considered in the present study. However, research has found that the various forms of peer victimization, including verbal, physical, relational and indirect forms, are associated with one another and do not show differential outcomes (Hawker & Boulton, 2000). Thus, although findings of the present study may not necessarily generalize to relational and indirect forms of peer victimization, it is likely that they do.

The questions used to assess peer victimization in the present study ask youth whether or not they were victimized while at school, with no specification as to the perpetrator of the victimization. As a result of the questions specifying that the victimization occurred within the school context, generalizability is of concern. Peer victimization occurring outside of the school context was not necessarily captured in the

present study and victimization that occurs within the school context may not be representative of peer victimization as a whole. As a result of the questions not clearly specifying the perpetrator of victimization it is possible that the perpetrators are not peers. However, given the specification that the victimization occurred at school it is reasonable to assume that the large majority of perpetrators are peers, for two reasons. First, youth tend to have more interactions with their peers than adults while at school simply due to the staff to student ratio. Second, the adults which youth have contact with while in school are for the most part employed by the schools, which have strict and severe penalties, such as job loss, for inappropriate behaviour by staff.

Part 1: Risk Factors

Gender

Consistent with past research (Boulton & Underwood, 1992 as cited in Hanish & Guerra, 2000; Olweus, 1991, as cited in Hanish & Guerra, 2000; Whitney & Smith, 1993, as cited in Hanish & Guerra, 2000) the present study has found that males tend to be victimized more than their female counterparts “gender”, regardless of grade “grade”. Of note however, the present study’s peer victimization weighted score “peer victimization” is comprised of items limited to verbal and physical forms. Recent research on gender and aggression has shown that males tend to demonstrate more aggression than females in verbal and physical forms, whereas females are more aggressive when relational forms of aggression are considered (Crick & Grotpeter, 1995). Thus, the gender effects demonstrated in the present study likely cannot be generalized to relational forms of peer victimization.

Age/Grade Level

The only study which has considered the pattern of peer victimization across ages or grades found that the percentage of youth victimized by peers in grades 2 through 6 was twice that found in grades 7 through 9 (Olweus, 1991, as cited in Salmivalli, Lappalainen, & Lagerspetz, 1998). The present study thus adds to the literature in that it considers the pattern of peer victimization “peer victimization” in grades 7 through 12 “grade”. Results of the present study show that for grades 7 through 12 a peak in peer victimization is reached in grade 9 (and for 14 year olds), from which point a decrease is seen throughout the upper grades (and ages “true age”), regardless of gender “gender”. Although past research has suggested that youth who *appear* younger than their peers “apparent age” are more likely to be victimized (Hodges, Malone, & Perry, 1997), the present study does not support this conclusion. Further, youth who were either younger or older than their classmates “age-grade discrepancy” were not at greater risk to be victimized.

Ethnicity

Although past research has shown ethnicity to be related to peer victimization (Hanish & Guerra, 2000) the present study does not support such a conclusion, regardless of gender or grade. Whereas Hanish and Guerra (2000) found that Hispanic youth were less likely to be victimized than their Caucasian or African American counterparts the present study did not find any differences in the level of peer victimization “peer victimization” experienced by Aboriginal/First Nations, Asian, East Indian, Hispanic, Persian or Caucasian youth.

On further consideration of their findings Hanish and Guerra (2000) found that the amount of peer victimization experienced by Caucasian and African American youth

depended on the degree of ethnic integration in the school the youth attended. Hanish and Guerra (2000) operationally defined the degree of school ethnic integration as the proportion of Caucasian youth in attendance – the smaller the proportion of Caucasians in attendance the greater the level of ethnic integration. They found that the more ethnically integrated the school the greater the victimization experienced by Caucasians and the lesser the victimization experienced by African American youth. The present study did not find any differences in levels of peer victimization “peer victimization” among the various ethnicities when ethnic integration was considered. This was regardless of how ethnic integration was operationalized, whether operationalized as done by Hanish and Guerra (2000) as the proportion of Caucasians attending the youth’s school “school Caucasian proportion” or as the proportion of the youth’s own ethnicity attending the youth’s school “school Aboriginal proportion” “school Asian proportion” “school East Indian proportion” “school Hispanic proportion” “school Persian proportion” and “school Caucasian proportion”.

Three possible explanations for the difference in findings between the present study and that of Hanish and Guerra (2000) relate to the fact that the samples in each study are quite different from one another. First, the two samples differ in grade level. The children in Hanish and Guerra’s (2000) sample were in grades 1 through 6 whereas the present study sampled grades 7 through 12. It is possible that ethnic differences in peer victimization are present in earlier grades, during childhood, but are simply reduced and no longer present in the higher grades, during preadolescence and adolescence. This would not be inconsistent with the fact that ethnic grouping begins to occur in middle childhood.

Second, the two samples differ in terms of SES. Whereas Hanish and Guerra’s (2000) sample was for the most part of lower SES the sample of the present study

approximates a distribution of SES similar to that of the entire province of British Columbia. It is possible that ethnic differences in peer victimization are more prevalent in lower SES schools. Although this was not explicitly considered in the present study the present study has shown that youth SES “family SES” “SES index” and youth SES relative to school SES “average school family SES” “average school SES index” are not correlated with peer victimization “peer victimization”.

Third, the ethnic compositions of the samples differ. The present study considers numerous ethnicities including Aboriginal/First Nations, Asian, East Indian, Hispanic, Persian and Caucasian. In contrast, Hanish and Guerra (2000) sampled only three ethnicities, Hispanic, African American, and Caucasian. The ethnic composition of each sample reflects the population from which it was drawn. The present sample was selected in British Columbia, Canada, whereas Hanish and Guerra conducted their study in a Midwestern city in the United States. African American’s are the largest minority in the United States and make up a larger proportion of the country’s population in the United States than they do in Canada (Bowman, 2000). In contrast Asian’s are the largest minority in British Columbia, Canada, and make up a larger proportion of the country’s population in Canada than they do in the United States (Bowman, 2000). Not only do the samples differ in their ethnic composition but they also differ in their ethnic and racial histories (Bowman, 2000). Thus, although both studies consider ethnicity as a factor the particular ethnicities and their backgrounds differ.

A significant limitation of the present sample lies in the failure of 30% of the sample to indicate their ethnicity. This 30% of the sample was either uncertain of their ethnicity or choose not to respond. Thus, some of the ethnic groups may be underrepresented and/or somewhat biased. This is also problematic when determining school composition as a proportion of each school’s ethnicity is unknown.

Family Socioeconomic Status

Although previous literature has not considered the relationship between family SES and peer victimization it was expected that a relationship would exist based on theories of in-group bias. Theories of in-group bias suggest that youth form groups and exclude out-group members based on salient characteristics (Rich-Harris, 1998). SES was hypothesized to be one such salient characteristic. However, in the present study SES “family SES” “SES index” was not associated with peer victimization “peer victimization”, regardless of gender “gender” or grade “grade”. The average SES for the youth’s school “average school family SES” “average school SES index” was also not associated with peer victimization “peer victimization”, even when the youth’s family’s SES was considered. Further, neither youth employment “youth employment” nor the youth’s disposable income “youth disposable income” were associated with peer victimization, nor did they moderate the relationship between family SES “family SES” “SES index” and peer victimization “peer victimization”.

A limitation of the present study is the methods used to determine family SES. The first measure of family SES is a question requiring youth to subjectively indicate how well-off their family is “family SES”. This is problematic as youth may not be well informed of their family’s financial situation unless it is quite extreme. Thus, scores within the ‘middle range’ of a scale based on this question may not be reliable. The second measure of SES is a scale comprised of several questions based on methodology used by Statistics Canada and Human Resources Development Canada (1994) “SES index” (See appendix D). This measure, due to the questions of which it is comprised, may also be problematic. For example, questions within the scale regarding the family’s ownership of vehicles or whether or not youth have their own bedroom may not necessarily be indicative of SES. The number of vehicles one owns and whether

one has one's own bedroom may simply be a reflection of family size or the community (rural vs. urban) in which the youth lives.

Limitations are also present in considering youth employment. The question regarding youth employment "youth employment" asks youth to indicate the number of hours they work weekly and thus assessed the amount of time a given youth works in an employment setting. However, such a question is unable to provide information as to how much income the youth receives for such employment or whether or not they are permitted to spend that money as they please. Although a youth is employed they may be expected to contribute that income to their family or may be expected to save it for a future event or purchase (e.g. car, education, marriage).

Disability

Previous literature has not considered the relationship between disability "disability" and peer victimization "peer victimization". Based on theories of in-group bias however, it was expected that a relationship would exist such that disabled youth would have higher levels of peer victimization. Indeed, disabled youth were more likely to be victimized by their peers than those who were not disabled, regardless of gender "gender", grade "grade" or whether or not the disability was visible to others "visibility of disability".

Body Weight

Previous literature has not considered the relationship between body weight "body weight" and peer victimization "peer victimization". Based on theories of in-group bias it was expected that a relationship would exist such that overweight youth would have higher levels of peer victimization. Interestingly, *both* underweight and overweight

youth were more likely to be victimized by their peers than those whose weight was within the normal range, regardless of gender “gender” or grade “grade”.

Sexual Orientation

Previous literature has not considered the relationship between sexual orientation “sexual orientation” and peer victimization “peer victimization”. Based on theories of in-group bias it was expected that a relationship would exist such that homosexual youth would have higher levels of peer victimization. However, sexual orientation was not associated with peer victimization, regardless of gender “gender” or grade “grade”. A possible explanation for this finding is that youth may tend not to disclose their sexual orientation to their peers.

Family Connectedness

Consistent with past research (Schwartz, Dodge, Pettit, & Bates, 1997, 2000) the present study found the quality of the relationship that a youth has with family “overall family connectedness” to be associated with peer victimization. Poor family relationships were associated with increased victimization by peers, regardless of the gender “gender” or grade “grade” of the youth. This relationship between family connectedness and peer victimization remained the same regardless of whether maternal “maternal connectedness”, paternal “paternal connectedness”, general family “family connectedness” or overall family connectedness “overall family connectedness” was considered.

Although past findings have shown maternal closeness and over-protectiveness to be associated with victimization for boys and maternal rejection to be associated with victimization for girls (Finnegan, Hodges, & Perry, 1998; Ladd & Kochenderfer Ladd, 1998), the present study did not find the gender of youth “gender” to moderate the

relationship between the maternal relationship “maternal relationships” and peer victimization “peer victimization”. As maternal connectedness, as defined in the present study, differs from both over-protection and rejection this finding is not entirely surprising. Maternal connectedness was determined in the present study based on how close the youth feels with his or her mother, how much he or she thinks his or her mother cares about him or her, how warm and loving his or her mother acts towards him or her, and the youth’s overall satisfaction with the mother-child relationship. With such a definition of maternal connectedness both over-protection and rejection by the mother may have been demonstrated as low maternal connectedness. Whereas maternal rejection would likely have been associated with low levels of maternal connectedness it is difficult to say as to whether or not maternal over-protectiveness would be experienced by youth as high or low maternal connectedness. It is quite likely that maternal over-protectiveness would be experienced negatively by males in grades seven through twelve leading to lower levels of maternal connectedness. As a result, maternal closeness and over-protectiveness for boys and maternal rejection for girls would both be experienced as poor maternal connectedness. Thus, the fact that gender differences did not emerge for maternal connectedness does not necessarily contradict past findings. It does indicate however that youth’s perception of the relationship quality with their parents, including mothers and fathers, is related to peer victimization.

Teacher Relationships

To the knowledge of the present author the relationship between peer victimization and teacher relationships has not previously been considered. The present study has shown youths’ relationships with teachers “teacher relationships” to be associated with peer victimization “peer victimization”. Better student-teacher relationships were associated with lower levels of peer victimization, regardless of

gender “gender” or grade “grade”. These findings demonstrate that the student-teacher relationship plays a role in a youth’s relationship with his or her peers. The student-teacher relationship may provide youth with an additional context to learn social skills that can be transferred to peer relationships resulting in less peer victimization. Alternatively, youth with adequate social skills may be able to develop both better peer and student-teacher relationships.

Peer Relationships

Consistent with past research (Schwartz, Dodge, Pettit, & Bates, 1997, 2000) the present study found the quality of relationships that a youth has with peers “peer relationships” to be associated with peer victimization “peer victimization”. Poor peer relationships were associated with increased victimization by peers, regardless of the gender “gender” or grade “grade” of the youth.

Interestingly, seeking a friend first to discuss important issues such as family problems, depression, relationships, sexual issues and drugs/alcohol “talk to peer(s)”, was actually found to be associated with higher levels of peer victimization “peer victimization”. A possible explanation for this finding could be that youth who turn to friends first to discuss such issues do so because they do not have good quality relationships with parents or other adult authority figures such as teachers, and as discussed previously, the quality of relationships a youth has with his or her family is associated with peer victimization. The present study provides support for such an interpretation in that poor family connectedness “overall family connectedness” was associated with an increased likelihood that youth would consult a peer in regards to important issues “talk to peer(s)”, although poor teacher relationships “teacher relationships” was not. An alternative explanation may be that youth who discuss these issues with peers do not maintain appropriate boundaries with their peers, and this may

be seen as a sign of weakness. Further, by disclosing such information youth may make themselves more vulnerable to peers who may use such information against them.

Although past research has shown that youth who have recently moved to a new school tend to have more social difficulties (Rich-Harris, 1998) the present study did not find youth who had moved recently “moved recently” “moved within last year” to be victimized by peers “peer victimization” to a greater degree than their peers. This finding may be due to the fact that the question assessing whether or not the youth had moved recently asked how many years they have lived at the current address and did not allow for a fine measurement of the length of time the youth has lived at their current address. It is possible that social difficulties associated with moving are short term and thus not fully captured with the question used in the present study. Further, although a youth may have moved within the last year they would not necessarily have changed schools, and it is changing schools which is associated with increased difficulty in peer relationships (Rich-Harris, 1998).

Moderators between Risk Factors and Peer victimization

Although each of the moderators considered in the present study relating to the association between risk factors and peer victimization were discussed previously in relation to each of the variables for which they were considered further comment is warranted. Both gender “gender” and grade “grade” were considered possible moderators between each of the risk factors and peer victimization “peer victimization” in order to determine if findings could be generalized across genders and grade. Interestingly, neither gender nor grade moderated the relationship between any of the risk factors and peer victimization. Thus, in each case findings are generalizable across gender and age. As adequately discussed previously, additional moderators were

considered for disability “disability”, SES “family SES” “SES index” and average school SES “average school family SES” “average school SES index”.

Part 2: Outcome Factors

Psychological Health

Consistent with past research (Hawker & Boulton, 2000; Rigby & Slee, 1994) the present study has shown that youth who are victimized by their peers “peer victimization” are more likely to indicate depressed feelings “feeling low”, feelings of hopelessness “feel hopeless” and suicidal ideation “considered suicide” “planned suicide”. Present findings also indicate that victimized youth are more likely to attempt suicide “attempted suicide” “attempted suicide (recoded)”, and when they do their attempts are more serious in that they are more likely to result in injury “injury from suicide attempt” than youth who were not victimized by their peers. Consistent with past research findings (Hawker & Boulton, 2000; Rigby & Slee, 1994; Slee, 1994), youth who are victimized by their peers also indicate higher levels of anxiety and stress “anxiety/stress” than their peers. The relationship between peer victimization and depressed feelings “feeling low” “feel hopeless”, considering suicide “considered suicide”, suicide attempts “attempted suicide” and anxiety/stress “anxiety/stress” occurred regardless of the youth’s gender “gender”, grade “grade”, family connectedness “overall family connectedness”, teacher relationships “teacher relationships”, peer relationships “peer relationships”, school connectedness “school connectedness” or academic achievement “current academic achievement”. In the present study, next to school connectedness, depression “feeling low” “feel hopeless” and anxiety “anxiety/stress” were the outcomes most highly correlated with peer victimization.

Physical Health

Consistent with past research findings (Rigby, 1999; Rigby & Slee, 1994) the present study has shown that youth who are victimized by their peers “peer victimization” report poorer general physical health “physical health” and are more likely to report having been bothered by illness recently “recent illness”. These relationships occurred regardless of the youth’s gender “gender”, grade “grade”, family connectedness “overall family connectedness”, teacher relationships “teacher relationships”, peer relationships “peer relationships”, school connectedness “school connectedness” or academic achievement “current academic achievement”. Youth who were victimized by peers were also more likely to report having headaches “headaches”, stomach-aches “stomachaches”, backaches “backaches”, skin problems “skin irritations” and dizzy spells “dizziness”.

Drug Use

To the knowledge of the present author, previous research has not considered the relationship between peer victimization and drug use. Findings of the present study indicate that youth who were victimized by their peers “peer victimization” were more likely to report having tried cigarettes, alcohol and marijuana “cigarette use” “alcohol use” “marijuana use” and more likely to have used them recently “frequency of cigarette use” “frequency of alcohol use” “frequency of marijuana use”. This was true regardless of the youth’s gender “gender”, grade “grade”, family connectedness “overall family connectedness”, teacher relationships “teacher relationships”, peer relationships “peer relationships”, school connectedness “school connectedness” or academic achievement “current academic achievement”.

The present study also found greater peer victimization “peer victimization” to be associated with having tried other drugs, such as cocaine “cocaine use”, bindro “bindro use”, inhalants “inhalant use”, amphetamines “amphetamine use”, heroin “heroin use”, steroids “steroid use”, prescription drugs not belonging to them “non-prescribed prescription medication use” and drugs requiring injection “injected”. This was not the case for mushroom “mushroom use” and hallucinogen use “hallucinogen use”. Youth who were victimized by their peers were also more likely to have used drugs with greater frequency, including cocaine “cocaine use - frequency”, mushrooms “mushroom use - frequency”, bindro “bindro use frequency”, inhalants “inhalant use - frequency”, amphetamines “amphetamine use - frequency”, heroin “heroin use - frequency”, steroids “steroid use - frequency”, prescription drugs not belonging to them “non-prescribed prescription medication use - frequency” and drugs requiring injection “injected drug - frequency”. This was not the case for the frequency of hallucinogen use “hallucinogen use - frequency”.

These findings are consistent with existing literature which has found antisocial behaviours, including drug use, to be associated with peer rejection (Dishion, Patterson, Stoolmiller & Skinner, 1991). Although one can be rejected by peers without being victimized the constructs are very similar in that peer victimization is a form of peer rejection. The present findings are also consistent with the literature demonstrating peer victimization to be associated with internalizing problems (Hawker & Boulton, 2000; Hodges & Perry, 1999; Rigby & Slee, 1994; Slee, 1994) as internalizing problems have been associated with drug use (Steinberg, 1999). In contrast, the present findings do not support the notion that youth who are not accepted by their peers are unlikely to have the opportunities to engage in antisocial behaviours such as drug use (Moffitt, 1993). It is possible however that victimized youth have fewer opportunities to engage in

drug use behaviours but that they are more likely to use substances when such opportunities arise.

Findings of the present study are not consistent with Shedler and Block's (1990) findings that youth who abstain from drugs tend to be socially isolated, youth who experiment (but are not frequent users) tend to be well adjusted, and youth who were frequent drug users tend to be alienated and antisocial. No such curvilinear relationship was found between peer victimization and drug use frequency in the present study. The level of peer victimization tended to increase or stay the same as the frequency with which the youth used the various substances increased. It is however possible that socially isolated youth are not victimized by their peers, while alienated youth are.

Body Image and Eating Disorders

To the knowledge of the present author previous research has not considered the relationship between peer victimization and body image or eating disorders. Based on research finding peer victimization to be associated with low self-esteem (Hawker & Boulton, 2000), a poor view of the self, it was hypothesized that poor body image and eating disorders would also be correlated with peer victimization. Indeed, findings of the present study indicate that youth who are victimized by their peers "peer victimization" are more likely to have poor body images "body satisfaction", weight management concerns "weight management goals" and eating disordered behaviour. Such youth tend to be less satisfied with their bodies and trying to either gain or lose weight. They tend to report using various means to obtain weight management goals such as dieting "dieted", exercising "exercise" and taking diet pills "use of diet pills" more than their peers. They also report more eating disordered behaviours "eating disorder" which are associated with anorexia nervosa and bulimia nervosa such as binge eating "binges" "binging frequency", vomiting "purging" "purging frequency" and taking laxatives "laxative

use". The relationship between peer victimization "peer victimization" and each of body image "body satisfaction" and the presence of eating disorders "eating disorder" occurred regardless of the youth's gender "gender", grade "grade", family connectedness "overall family connectedness", teacher relationships "teacher relationships", peer relationships "peer relationships", school connectedness "school connectedness" or academic achievement "current academic achievement".

Academic Achievement

To the knowledge of the author previous research has not considered the relationship between peer victimization and academic achievement or aspirations. Based on research demonstrating a relationship between peer victimization and a decreased desire to attend school (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997) and poor school adjustment and avoidance (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997), it was hypothesized that higher levels of peer victimization would be associated with lower levels of academic achievement and aspirations. Indeed, youth who are victimized by their peers "peer victimization" tended to have poorer academic performance "current academic achievement" than their peers but they did not differ in terms of their academic aspirations "academic aspirations". These findings occurred regardless of the youth's gender "gender", grade "grade", family connectedness "overall family connectedness", teacher relationships "teacher relationships", peer relationships "peer relationships", school connectedness "school connectedness" or academic achievement "current academic achievement".

Desire to Attend School and School Connectedness

Consistent with past research demonstrating a relationship between peer victimization and a decreased desire to attend school (Kochenderfer & Ladd, 1996;

Ladd, Kochenderfer, & Coleman, 1997) and poor school adjustment and avoidance (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997), the present study found that youth who are victimized by their peers “peer victimization” are more likely to skip school “cutting class”. Further, the present study found victimized youth to report lower levels of school connectedness “school connectedness”, greater dislike of school “feel about school” and greater unhappiness at school “happy at school”.

Moderators between Outcomes and Peer Victimization

Although each of the moderators considered in the present study relating to the association between peer victimization and selected outcome factors were discussed previously in relation to each of the variables for which they were considered, further discussion is warranted. Research that has addressed possible moderators between peer victimization and various outcomes has shown that the quality of parental relationships, having a friend and being liked by a peer moderate such outcomes (Hodges, Malone, & Perry, 1997). It was thus expected that family “family connectedness”, teacher “teacher relationships” and peer relationships “peer relationships” would moderate the relationship between selected outcome factors addressed in the present study and peer victimization. Additional possible moderators, including gender “gender”, grade “grade”, school connectedness “school connectedness” and academic achievement “current academic achievement” were also considered for these variables. None of these proposed moderators moderated the relationship between peer victimization and the selected outcomes. These findings suggest that the outcomes of peer victimization are generalizable across genders, grades, school connectedness, academic achievement and quality of family, teacher and peer relationships.

Of particular interest is the present studies finding that although higher family connectedness and better teacher and peer relationships are associated with less peer victimization, once victimization has occurred the quality of family, teacher and peer relationships did not improve the outcomes of this victimization. A possible explanation for family, teacher and peer relationships not moderating the relationships between peer victimization and the various outcome factors may be that in adolescence peers become increasingly important to youth. Consistent with this interpretation, Hodges, Malone and Perry (1997) considered youth in grades 3 through 7 whereas the present study involved youth in grades 7 through 12. The discrepancy between the present study's findings and those of Hodges, Malone and Perry (1997) support the notion that peers become an increasingly important part of a youth's life in adolescence, such that results of victimization by peers are no longer moderated by the presence and quality of relationships with others.

Considering Effect Sizes

In considering the effect sizes associated with these risk and outcome factors, which has rarely been done in past research (Hawker & Boulton, 2000), the present study has revealed an important finding. The present study has shown that some of the risk factors and outcomes of peer victimization discussed in the literature to date are only minimally associated with peer victimization. Although this does not minimize the practical significance of these relationships the present findings suggest that the targets of peer victimization actually hold a complicated profile such that considering single factors will be limited, and that there is variability in the outcomes of peer victimization. Future research should not simply look at isolated risk factors, but instead consider a more complex pattern (or combination) of risk factors, which in turn may be associated

with different patterns of outcomes. For example, recent research has differentiated aggressive victims from passive victims and shown that aggressive victims are more likely to have been treated harshly and physically abused by their family than victims who are not aggressive (Schwartz, Dodge, Pettit, & Bates, 1997).

Methodological Concerns and Limitations

The self-report nature of the AHS may be problematic in that there is a possibility that self-enhancement tendencies or lack of self-disclosure (or honesty) may affect internal validity. The administration situation may also be problematic as group administration may not be conducive to revealing intimate information. However, students were informed that their responses would be kept anonymous and that their names would not be associated with their responses in any way.

Further difficulty arises in terms of the representativeness of the sample as students who were truant would not have completed the questionnaire. As students who are often victimized are likely to avoid school (Kochenderfer & Ladd, 1996; Ladd, Kochenderfer, & Coleman, 1997), it is possible that the victimized youth who completed the survey are not representative of victimized youth as a whole. The proportion of victimized youth may also be underestimated.

As the present study is correlational in nature, directionality between variables cannot be determined. This is quite problematic within the peer victimization literature, as many variables that are considered outcomes of peer victimization may in fact contribute to peer victimization such that they are risk factors. Hodges and Perry (1999) provide such an example of this cyclical pattern in the findings of a longitudinal study they conducted. They found that initial peer rejection and internalizing problems led to increases in peer victimization over time and vice versa, that peer victimization led to

increases in peer rejection and internalizing problems over time. Hodges and Perry (1999) argue that longitudinal studies are needed in order to better differentiate the causes from the consequences of peer victimization.

Contributions of the Present Study

The present study contributes to the current body of peer victimization literature as it expands on past findings by considering new correlates of peer victimization. The current study is also unique in that it is one of a few studies which has attempted to look at variables which moderate and mediate the relationship between peer victimization and these correlations (Hawker & Boulton, 2000). In addition, the present study provides information regarding effect sizes associated with the correlates of peer victimization, which has rarely been done in past research (Hawker & Boulton, 2000). Thus, the current study increases our understanding of risk and outcome factors associated with peer victimization. With this greater knowledge of factors associated with peer victimization we are better able to improve our intervention programs, and thus improve the lives of youth.

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APPENDICES

Appendix A: Peer Victimization

Item 120 – During the past 12 months, while at school, how many times did someone:

a) ...say something personal about you that made you feel bad or extremely uncomfortable?

b) ...threaten to hurt you but did not actually hurt you?

c) ...physically attack or assault you?

- Never
- Once
- 2 times
- 3 or more times

Appendix B: Gender

Item 2 - What is your sex?

- Male
- Female

Appendix C: Age/Grade Level

Age

Item 1 - How old are you?

- 12 years old or younger
- 13 years old
- 14 years old
- 15 years old
- 16 years old
- 17 years old
- 18 years old
- 19 years old or older

Grade

Item 26 - What grade are you in (Mark one answer only)

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

Apparent Age

Item 36 – Compared to most youth your age, do you think you look younger, older, or about the same age?

- Younger
- About the same age
- Older

Appendix D: Ethnicity

Item 3 - Canadians belong to many ethnic or cultural groups such as Aboriginal/First Nations, French, Chinese, Irish or East Indian. To which ethnic or cultural group(s) do you belong, if any? (if necessary, mark more than one answer)

- Aboriginal/First Nations
- British
- Chinese
- Dutch
- East Indian
- Filipino
- French
- German
- Hispanic
- Irish
- Italian
- Japanese
- Jewish
- Korean
- Persian
- Polish
- Portuguese
- Scottish
- Ukrainian
- Vietnamese
- Other ethnic or cultural group(s), Specify: _____
- I do not belong to an ethnic or cultural group

Appendix E: Family Socioeconomic Status

Item 14 – Does your family have a car, truck, or van?

- No
- Yes, one
- Yes, two or more

Item 15 – Do you have a bedroom all to yourself at home?

- Yes
- No

Item 16 – In terms of money or income, how well off is your family?

- Very well off
- Well off
- Average
- Not very well off
- Not at all well off
- I don't know

Item 17 – During the past 6 months, have your parents received Income Assistance from the government (welfare or BC Benefits but not Employment Insurance)?

- Yes
- No
- Don't know

Appendix F: Youth Employment and Disposable Income

Youth Employment Status

Item 12 – During the school year, on average, how many hours a week do you work at a job?

- I don't work
- Less than 5 hours a week
- 5-9 hours a week
- 10-20 hours a week
- Over 20 hours a week

Youth Disposable Income

Item 13 – On average, how much money do you have to spend on yourself each week (from jobs, allowances, etc.)?

- None
- Less than \$10
- Between \$10 and \$25
- Between \$26 and \$50
- Between \$51 and \$75
- Between \$76 and \$100
- Over \$100

Appendix G: Disability

Item 39 – Do you have a health condition or disability that keeps you from doing some things other kids your age do (such as school activities, sports, getting together with friends)?

- No
- Yes, a physical disability (deafness, cerebral palsy, wheelchair, etc.)
- Yes, a long term illness (diabetes, asthma, etc.)
- Yes, a mental or emotional condition (depression, eating disorder, etc.)
- Yes, overweight or underweight

Item 40 – Can other people tell that you have a health condition or disability?

- Do not have a health condition or disability
- Never
- Sometimes
- Always

Appendix H: Body Weight

Item 42 – How do you think of your body?

- Very underweight
- Slightly underweight
- About the right weight
- Slightly overweight
- Very overweight

Appendix I: Sexual Orientation

Item 93 – People have different feelings about themselves when it comes to questions of being attracted to other people. Which of the following best describes your feelings?

- 100% heterosexual (attracted to persons of the opposite sex)
- Mostly heterosexual
- Bisexual (equally attracted to males and females)
- Mostly homosexual
- 100% homosexual (“gay/lesbian”, attracted to persons of the same sex)
- Not sure

Appendix J: Family Connectedness

Maternal Connectedness

Item 18 – How close do you feel with your mother?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much
- Don't know or does not apply

Item 19 – How much do you think your mother cares about you?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much
- Don't know or does not apply

Item 22 – How much do you agree or disagree with the following statements?

- a) most of the time, my mother is warm and loving towards me
 - b) Overall, I am satisfied with my relationship with my mother
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly Disagree
 - Don't know/does not apply

Paternal Connectedness

Item 20 – How close do you feel with your father?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much
- Don't know or does not apply

Item 19 – How much do you think your father cares about you?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much
- Don't know or does not apply

Item 22 – How much do you agree or disagree with the following statements?

- a) most of the time, my father is warm and loving towards me
- b) Overall, I am satisfied with my relationship with my father

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly Disagree
- Don't know/does not apply

General Family Connectedness

Item 23 – How much do you feel that people in your family understand you?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much

Item 24 – How much do you feel that you and your family have fun together?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much

Item 25 – How much do you feel that you and your family pays attention to you?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much

Appendix K: Teacher Relationships

Item 31 – How much do you feel that your teachers care about you?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much

Item 32 – Since school started this year, how often have you had trouble getting along with your teachers?

- Never
- Just a few times
- About once a week
- Almost every day
- Every day

Item 34 – How much do you agree or disagree with the following statements?

c – The teachers at my school treat students fairly

- Strongly Agree
- Agree
- Neither Agree not Disagree
- Disagree
- Strongly Disagree

Appendix L: Peer Relationships

Item 33 – Since school started this year, how often have you had trouble getting along with other students?

- Never
- Just a few times
- About once a week
- Almost every day
- Every day

Item123 – Who would you go to FIRST for help if you had a problem with ... (For each problem, mark one answer only)

- a) Your family
- b) Depression (feeling really sad)
- c) Needing birth control information
- d) Sexual/physical abuse
- e) Drugs/alcohol
- f) Relationships
- g) Physical illness
- h) Sexually transmitted diseases (STDs)
- i) Problems with friends
 - Parent/Guardian
 - Other family member
 - Friends my age
 - Adult friend
 - Health professional
 - Teacher/School Staff
 - Religious leader
 - No one
 - Not sure

Appendix M: Moved Recently

Item 6 - How many years have you lived at your current address?

- Less than one year
- One year
- Two years
- Three or more years

Appendix N: Depression

Item 38 - During the past 6 months, how often have you had or felt the following:

- d) Feeling low (depressed)
- g) Difficulties in getting to sleep
- e) A bad mood (irritable)
- Most days
- More than once a week
- About once every week
- About once every month
- Seldom or never

Item 97 – Some people need or like to have time by themselves. How often do you feel this way?

- All the time
- Quite often
- Sometimes
- Rarely
- Never

Item 101 – During the past 30 days, have you felt so sad, discouraged, hopeless or has 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

Appendix O: Suicidal Ideation and Attempts

Suicidal Ideation

Item 103 – During the past 12 months, did you ever seriously consider attempting suicide (killing yourself)?

- Yes
- No

Item 104 – During the past 12 months, did you make a plan about how you would attempt suicide (kill yourself)?

- Yes
- No

Suicide Attempts

Item 105 – During the past 12 months, how many times did you actually attempt suicide?

- 0 times
- 1 time
- 2 or 3 times
- 4 or 5 times
- 6 or more times

Item 106 – If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?

- I did not attempt suicide during the past 12 months
- Yes
- No

Appendix P: Anxiety/Stress

Item 38 - During the past 6 months, how often have you had or felt the following:

f – Feeling nervous (uneasy)

- Most days
- More than once a week
- About once every week
- About once every month
- Seldom or never

Item 98 – 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

Item 100 – 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

Appendix Q: Physical Health

Item 35 – In general, how would you describe your health?

- Excellent
- Good
- Fair
- Poor

Item 38 – During the past 6 months, how often have you had or felt the following (most days-seldom)

- a) Headache
 - b) Stomachache
 - c) Backache
 - d) Feeling dizzy
 - e) Rashes or other skin problems
- Most days
 - More than once a week
 - About once every week
 - About once every month
 - Seldom or never

Item 99 – During the past 30 days, have you been bothered by any illness, physical problems, pains or fears about your health?

- All the time
- Quite often
- Sometimes
- Rarely
- None of the time

Appendix R: Drug Use

Cigarette Use

Item 61 – Have you ever tried cigarette smoking, even one or two puffs?

- Yes
- No

Item 66 – During the past 30 days, on how many days did you smoke cigarettes?

- 0 days
- 1 or 2 days
- 3 to 5 days
- 6 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

Alcohol Use

Item 56 - Have you ever had a drink of alcohol other than a few sips?

- Yes
- No

Item 59 – During the past 30 days, how many days did you have at least one drink of alcohol?

- 0 days
- 1 or 2 days
- 3 to 5 days
- 6 to 9 days
- 10 to 19 days
- 20 to 29 days
- All 30 days

Marijuana Use

Item 51 – Have you ever used marijuana (pot, grass)?

- Yes
- No

Item 54 – During the past 30 days, how many times did you use marijuana (pot, grass)

- 0 times
- 1 or 2 times
- 3 to 9 times
- 10 to 19 times
- 20 to 39 times
- 40 or more times

Other Substances

Item 55 – During your life, have you used any of the following drugs: (Mark one answer for each one)

- a) Cocaine
 - b) Hallucinogens
 - c) Mushrooms
 - d) Bindro (matt, hex)
 - e) Inhalants (glue, gas, paint, aerosols)
 - f) Amphetamines (speed, ice)
 - g) Heroin
 - h) Injected an illegal drug (shot up with needle)
 - i) Steroids without a doctor's prescription
 - j) Prescription pills without a doctor's consent
- 0 times
 - 1 to 2 times
 - 3 to 9 times
 - 10 or more times

Appendix S: Body Image and Eating Disorders

Body Image

Item 37 – At this time, how satisfied are you with how your body looks?

- 1 Not at all satisfied
- 2
- 3
- 4
- 5
- 6
- 7 Very satisfied

Item 43 – Which of the following are you trying to do

- Lose weight
- Gain weight
- Stay the same weight
- I am not trying to do anything about my weight, just grow normally

Eating Disorders

Item 44 – During the past 7 days, which of the following (if any) did you do to lose weight or keep from gaining weight?

- Dieted
- Exercised
- Made yourself vomit
- Took diet pills
- Took laxatives
- Used some other method

Item 45 – How often do you eat so much food in a short period of time that you feel out of control and would be embarrassed if others saw you (binge-eating or gorging)?

- Never
- Once a month or less
- 2-3 times a month
- Once a week
- 2 or more times a week

Item 46 – How often do you vomit (throw up) on purpose after eating?

- Never
- Once a month or less
- 2-3 times a month
- Once a week
- 2 or more times a week

Appendix T: Academic Achievement

Present Academic Achievement

Item 28 – In terms of schoolwork, what kind of student would you say you are?

- One of the best
- Far above the middle
- A little above the middle
- In the middle
- A little below the middle
- Far below the middle
- Near the bottom

Academic Aspirations

Item 27 – When do you expect to finish your education?

- Before I graduate from high school
- When I graduate from high school
- When I graduate from community college or a technical institute
- When I graduate from university
- Don't know
- Other, specify: _____

Appendix U: Desire to Attend School

Item 29 – How do you feel about going to school?

- Hate school
- Don't like school very much
- Like school some
- Like school quite a bit
- Like school very much

Item 34 – How much do you agree with the following statements?

b) I am happy to be at my school

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Item 30 – During the past 4 weeks, how often have you missed full days of school because you skipped or “cut” classes?

- Never
- Once or twice
- 3-5 times
- 6-10 times
- 11 or more times

Appendix V: School Connectedness

Item 31 – How much do you feel that your teachers care about you?

- Not at all
- Very little
- Somewhat
- Quite a bit
- Very Much

Item 32 – Since school started this year, how often have you had troubles getting along with your teachers?

- Never
- Just a few times
- About once a week
- Almost every day
- Every day

Item 33 – Since school started this year, how often have you had trouble getting along with other students?

- Never
- Just a few times
- About once a week
- Almost every day
- Every day

Item 34 – How much do you agree with the following statements?

- a) I feel like I am a part of my school
 - b) I am happy to be at my school
 - c) The teachers at my school treat students fairly
 - d) I feel safe at my school
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree

Appendix W: Descriptive Statistics for Discrete Risk Factors

Variable	M^a	N^b	Frequency	Scale
Gender		24756	47% (11727) 52% (13029) 1% (245)	1=male 2=female 9=no response
Apparent Age	2.11	24823	18% 53% 29%	1=Younger 2=Same Age 3=Older
Age-Grade Discrepancy	1.99	25001	3.2% 94.2% 2.6%	1= -1 year or less 2= within one year 3= +1 year or more
Ethnicity		22054	20.5% (5131) 5.9% (1482) 12.1% (3014) 3.3% (827) .9% (234) .5% (114) 45.0% (11252) 11.8% (2947)	0=Unknown 1=Native 2=Asian 3=East Indian 4=Hispanic 5=Persian 6=Caucasian 9=No Response
SES Index	2.04	22473	16% 54% 20% 10%	1=Low SES 2=Medium SES 3=High SES 9=No Response
Youth Employment	2.01	24795	49% 20% 14% 12% 4% 1%	1=Don't Work 2=Work 1-4hrs 3=Work 5-9hrs 4=Work 10-20hrs 5= Work 20+hrs 9=No Response
Youth Disposable Income	2.18	24791	8% 24% 38% 15% 5% 4% 6% 0%	0=0 1=<\$10 2=\$10-\$25 3=\$26-\$50 4=\$51-\$75 5=\$76-\$100 6=\$100+ 9=No Response
Disability	1.13	24728	85.7% 13.2% 1.1%	1=no 2=yes 9=no response
Noticeable Disability	1.39	24252	72.0% 11.7% 13.3% 3.0%	1=don't have disability 2=never noticeable 3=sometimes/always noticeable 9=no response

Variable	<i>M</i> ^a	<i>N</i> ^b	Frequency	Scale
Sexual Orientation	1.42	24348	84% 6% 1% 0.2% 0.3% 6% 2.6%	1=100% heterosexual 2=most heterosexual 3=bisexual 4=mostly homosexual 5=100% homosexual 6=Not sure 9=No Response
Talk to Peer(s)	.74	25001	26.5% 73.5%	0=don't talk to peers about important issues 1=talk to peers about important issues
Moved Recently	3.38	24882	12.7% 6.9% 10.2% 69.7% .5%	1=<1yr at current address 2=1yr at current address 3=2yrs at current address 4=3+yrs at current address 9=no response
Moved Within Last Year	1.80	24882	19.6% 79.9% .5%	1=<1year at current address 2=more than 1 year at current address 9=no response

^a Mean

^b Size of data set (number of respondents)

Appendix X: Descriptive Statistics for Continuous Risk Factors

Variable	<i>M^a</i>	<i>SD^b</i>	Kurtosis	Skewness	<i>N^c</i>	Freq. (%)	Scale
True Age	3.85 ^d	1.844	-1.018	.078	25001	12 16 16 16 16 15 6 1 0	1=12 and under 2=13 3=14 4=15 5=16 6=17 7=18 8=19 and over 9=No Response
Grade	3.521	1.708	-1.269	-.016	25001	16 16 16 16 16 16 4	1=7 2=8 3=9 4=10 5=11 6=12 9=No Response
School Aboriginal Proportion	7.6818	7.903	22.600	3.970	22073		% of ethnicity in school .66-100 (min-max)
School Asian Proportion	15.0760	20.193	2.240	1.833	22332		% of ethnicity in school .65-89.47 (min-max)
School East Indian Proportion	5.0234	5.409	23.262	3.580	18418		% of ethnicity in school .42-57.14(min-max)
School Hispanic Proportion	1.9583	1.613	15.495	2.687	13394		% of ethnicity in school .39-18.18(min-max)
School Persian Proportion	2.0055	2.184	7.624	2.656	6431		% of ethnicity in school .39-14.29 (min-max)
School Caucasian Proportion	51.2858	16.984	.252	-.648	24954		% of ethnicity in school 1.79-100 (min-max)
SES Index	2.04	.634	-.519	-.035	22473	16 54 20 10	1=Low 2=Med 3=High 9=No Response
Average School SES Index	2.0366	.153	16.05	-.490	25001		1.0-2.5 (min-max)

Variable	<i>M^a</i>	<i>SD^b</i>	Kurtosis	Skewness	<i>N^c</i>	Freq. (%)	Scale
Family SES	2.41	.856	.145	-.021	22901	2 7 44 28 10 8	0=not at all well-off 1=not very well-off 2=average 3=well-off 4=very well-off 9=no response
Average School Family SES	2.4132	.176	20.14	.666	25001		1.86-3.67 (min-max)
Youth Employment	2.01	1.226	-.351	.932	24795	49 20 14 12 4 1	1=do not work 2=work 1-4hrs/wk 3=work 5-9hrs/wk 4=work 10-20hrs/wk 5=work 20+hrs/wk 9=no response
Youth Disposable Income	2.18	1.463	.793	.994	24791	8 24 38 15 5 4 6	0=0 1=<\$10 2=10-25 3=26-50 4=51-75 5=76-100 6=100+ 9=No Response
Body Weight	3.14	.823	.015	-.205	24830	3 17 48 29 3 1	1=very underweight 2=underweight 3=right weight 4=overweight 5=very overweight 9=No Response
Sexual Orientation	1.42	1.261	8.293	3.122	24348	84 6 1 0.2 0.3 6 2.6	1=100% heterosexual 2=most heterosexual 3=bisexual 4=mostly homosexual 5=100% homosexual 6=Not sure 9=No Response
Family Connectedness							
Overall	38.2318	7.420	.932	-1.000	22745		4-48(min-max)
Mother	15.7567	2.819	4.023	-1.857	24011		2-18(min-max)
Father	14.7217	3.612	1.756	-1.442	23181		2-18(min-max)
Family	7.6447	2.628	-.270	-0.417	24664		0-12(min-max)
Teacher Relationships	8.3953	2.315	.409	5.358	24455		1-13(min-max)

Variable	<i>M^a</i>	<i>SD^b</i>	Kurtosis	Skewness	<i>N^c</i>	Freq. (%)	Scale
Peer Relationships	3.14	.858	2.570	-1.381	24713	2 4 7 51 35 1	0=everyday 1=almost everyday 2=1x week 3=few x's 4=never 9=no response
Moved Recently	3.38	1.067	.408	-1.420	24882	12.7 6.9 10.2 69.7 .5	1=<1yr 2=1yr 3=2yrs 4=3+yrs 9=no response

- a Mean
b Standard deviation (measure of dispersion)
c Size of data set (number of respondents)
d 14-years 10months

Appendix Y: Moderators between Risk Factors and Peer Victimization

Risk Factor	Proposed Moderator	$p_{\text{obs}} - \text{Model}^a$	t - Product Term ^b	$p_{\text{obs}} - \text{Product Term}^c$	$R^2 - \text{Model}^d$	Incremental R^{2e}
Gender	Grade	See below				
Age	Gender	.000	3.684	.000	.010	.001
Apparent Age	Gender	.000	5.148	.000	.007	.001
Grade	Gender	.000	2.816	.005	.010	.000
Age-Grade Discrepancy	Gender	.000	3.689	.000	.006	.001
Ethnicity	Grade	.000	-.087	.931	.006	.000
Ethnicity	Gender	.000	.145	.885	.006	.000
School Caucasian Proportion	Grade	.000	-1.123	.261	.006	.000
School Caucasian Proportion	Gender	.000	.924	.355	.007	.000
SES Index	Grade	.000	-.053	.958	.009	.000
SES Index	Gender	.000	2.819	.005	.009	.000
SES Index	Youth Employment	.000	-3.498	.000	.007	.001
SES Index	Disposable Income	.000	.093	.926	.004	.000
Family SES	Grade	.000	1.903	.057	.013	.000
Family SES	Gender	.000	1.173	.241	.010	.000
Family SES	Youth Employment	.000	.047	.963	.006	.000
Family SES	Disposable Income	.000	3.203	.001	.005	.000
Average School SES Index	Grade	.000	-4.125	.000	.006	.001
Average School SES Index	Gender	.000	1.267	.205	.005	.000
Average School SES Index	Youth Employment	.213	1.824	.068	.000	.000
Average School SES Index	Disposable Income	.382	.300	.825	.000	.000
Average School Family SES	Grade	.000	26.19	.009	.005	.000
Average School Family SES	Gender	.000	-17.61	.078	.005	.000
Average School Family SES	Youth Employment	.127	1.527	.127	.000	.000
Average School Family SES	Disposable Income	.579	1.287	.198	.000	.000

Risk Factor	Proposed Moderator	$p_{\text{obs}} - \text{Model}^a$	t - Product Term ^b	$p_{\text{obs}} - \text{Product Term}^c$	$R^2 - \text{Model}^d$	Incremental R^2^e
Disability	Grade	.000	-1.608	.108	.029	.000
Disability	Gender	.000	-3.028	.002	.031	.000
Disability	Visibility of Disability	.000	2.477	.013	.029	.000
Body Weight	Gender	.000	1.851	.064	.009	.000
Body Weight	Grade	.000	-3.211	.001	.007	.000
Sexual Orientation	Gender	.000	2.284	.022	.006	.000
Sexual Orientation	Grade	.000	10.275	.000	.010	.004
Family Connectedness	Gender					
Overall		.000	.700	.484	.045	.000
Mother		.000	-.054	.957	.027	.000
Father		.000	.569	.569	.027	.000
Family						
Family Connectedness	Grade					
Overall		.000	7.489	.000	.052	.003
Mother		.000	5.839	.000	.031	.002
Father		.000	5.815	.000	.031	.002
Family						
Teacher Relationships	Gender	.000	-2.734	.006	.046	.000
Teacher Relationships	Grade	.000	2.969	.003	.049	.000
Talk to Peer(s)	Gender	.000	.034	.973	.007	.000
Talk to Peer(s)	Grade	.000	-4.041	.000	.007	.000
Peer Relationships	Gender	.000	5.031	.000	.156	.001
Peer Relationships	Grade	.000	-3.231	.001	.155	.000
Moved Recently	Gender	.000	-1.823	.068	.007	.000
Moved Recently	Grade	.000	-.081	.935	.006	.000
Moved Within Last Year	Gender	.000	-2.478	.013	.006	.000
Moved Within Last Year	Grade	.000	-.162	.872	.005	.000

^a p_{obs} for the model – this is the omnibus test for the model, which includes both predictor variables and the product term

^b t for the product term – this is the t for the product term alone

^c p_{obs} for the product term – this includes only the product term

^d R^2 for the model – this is the R^2 for the model, which includes both predictor variables and the product term

^e this is the change in R^2 with the addition of the product term, and thus indicates the amount of additional variance explained by the product term

Appendix Z: Descriptive Statistics for Discrete Outcome Variables

Factor	<i>M^a</i>	<i>N^b</i>	Frequency	Scale
Considered Suicide	1.85	24777	14.6%	1=yes
			84.5%	2=no
			.9%	9= no response
Planned Suicide	1.88	24777	11.5%	1=yes
			87.6%	2=no
			.9%	9= no response
Attempted Suicide (recoded)	1.07	24806	6.8%	1=yes
			92.4%	2=no
			.8%	9= no response
Injury from Suicide Attempt	1.36	24455	79.3%	1=didn't attempt
			1.9%	2=yes
			16.6%	3=no
Headache	3.73	24783	2.2%	9= no response
			6.8%	1=most days
			10.6%	2=>1/wk
			18.7%	3=1/wk
			29.5%	4=1/month
			33.6%	5=seldom
Stomachache	3.92	24717	.9%	9= no response
			3.8%	1=most/days
			7.9%	2=>1/wk
			15.1%	3=1/wk
			37.6%	4=1/mo
			34.5%	5=seldom
Backache	3.82	24539	1.1%	9= no response
			9.0%	1=most/days
			9.4%	2=>1/wk
			13.3%	3=1/wk
			24.3%	4=1/mo
			42.0%	5=seldom
Dizziness	4.21	24655	1.8%	9= no response
			4.5%	1=most/days
			7.0%	2=>1/wk
			9.8%	3=1/wk
			19.9%	4=1/mo
			57.5%	5=seldom
Skin Irritations	4.45	24755	1.4%	9= no response
			5.9%	1=most/days
			3.1%	2=>1/wk
			4.2%	3=1/wk
			13.3%	4=1/mo
			72.5%	5=seldom
Alcohol Use	1.65	24712	1.0%	9= no response
			34.6%	1=no
			64.2%	2=yes
Cigarette Use	1.43	24499	1.2%	9=no response
			56.1%	1=yes
			41.8%	2=no
Marijuana Use	1.42	24689	2.0%	9=no response
			56.8%	1=no
			42.0%	2=yes
			1.2%	9=no response

Factor	M^a	N^b	Frequency	Scale
Cocaine Use	1.08	24591	90.9% 7.5% 1.6%	1=no 2=yes 9=no response
Hallucinogen Use	1.12	24599	87.0% 11.4% 1.6%	1=no 2=yes 9=no response
Mushroom Use	1.18	24590	80.5% 17.9% 1.6%	1=no 2=yes 9=no response
Bindro Use	1.01	24476	97.2% .7% 2.1%	1=no 2=yes 9=no response
Inhalant Use	1.07	24531	91.7% 6.4% 1.9%	1=no 2=yes 9=no response
Amphetamine Use	1.05	24555	93.2% 5.0% 1.8%	1=no 2=yes 9=no response
Heroin Use	1.02	24538	96.3% 1.8% 1.9%	1=no 2=yes 9=no response
Injected Drug Use	1.01	24574	97.2% 1.1% 1.7%	1=no 2=yes 9=no response
Steroid Use	1.02	24561	96.7% 1.6% 1.8%	1=no 2=yes 9=no response
Non-Prescribed Prescription Medication Use	1.11	24602	88.0% 10.4% 1.6%	1=no 2=yes 9=no response
Weight Management Goals	2.50	24791	36.1% 14.2% 12.5% 36.4% .8%	1=lose weight 2=gain weight 3=stay the same 4=not trying anything 9=no response
Eating Disorder	.3763	23000	57.4% 34.6% 8.0%	0=no 1=yes 9=no response
Dieted	1.72	2005	25.5% 66.5% 8.0%	1=yes 2=no 9=no response
Exercise	1.55	23305	41.5% 51.7% 6.8%	1=yes 2=no 9=no response
Use of Diet Pills	1.99	22453	1.3% 88.5% 10.2%	1=yes 2=no 9=no response
Use of Laxitives	1.99	22418	.8% 88.8% 10.3%	1=yes 2=no 9=no response
Binging	.68	24606	31.5% 66.9% 1.6%	0=yes 1=no 9=no response
Purging	.93	24662	6.8% 91.9% 1.4%	0=yes 1=no 9=no response

Factor	<i>M</i> ^a	<i>N</i> ^b	Frequency	Scale
Academic Aspirations	3.91	24804	.6%	1=not High School
			6.8%	2=High School
			16.6%	3=College
			56.6%	4=University
			14.2%	5=don't know
			4.5%	6=other
			.8%	9= no response

^a Mean

^b Size of data set (number of respondents)

Appendix AA: Descriptive Statistics for Continuous Outcome Variables

Factor	<i>M^a</i>	<i>SD^b</i>	Kurtosis	Skewness	<i>N^c</i>	Frequency	Scale
Feeling Low	3.72	1.248	-.485	-.744	24617	7.6% 11.0% 16.3% 30.6% 33.0% 1.5%	1=most days 2=>1day/wk 3=1day/wk 4=1x/mo 5=seldom 9=no response
Feeling Hopeless	3.90	1.287	-.404	-.912	24743	6.8% 11.3% 12.5% 22.5% 45.8% 1.0%	1=extremely 2=quite a bit 3=some 4=a little 5=not at all 9= no response
Attempted Suicide	1.12	.492	30.844	5.244	24806	92.4% 3.8% 2.0% .4% .6% .8%	1=did not 2=1 attempt 3=2-3 attempts 4=4-5 attempts 5=6+ attempts 9= no response
Anxiety/Stress	8.7223	2.29419	-.296	-.613	24292		Continuous
Physical Health	1.79	.697	.217	.599	24863	35.5% 51.3% 11.1% 1.6% .6%	1=excellent 2=good 3=fair 4=poor 9= no response
Recent Illness	3.98	1.081	.262	-.961	24773	3.5% 6.9% 17.2% 32.3% 39.2% .9%	1=all of the time 2=most of the time 3=some of the time 4=little of the time 5=none of the time 9= no response
Headache	3.73	1.225	-.463	-.722	24783	6.8% 10.6% 18.7% 29.5% 33.6% .9%	1=most/days 2=>1/wk 3=1/wk 4=1/mo 5=seldom 9= no response
Stomachache	3.92	1.076	.315	-.963	24717	3.8% 7.9% 15.1% 37.6% 34.5% 1.1%	1=most/days 2=>1/wk 3=1/wk 4=1/mo 5=seldom 9= no response

Factor	M^a	SD^b	Kurtosis	Skewness	N^c	Frequency	Scale
Backache	3.82	1.321	-.438	-.883	24539	9.0% 9.4% 13.3% 24.3% 42.0% 1.8%	1=most/days 2=>1/wk 3=1/wk 4=1/mo 5=seldom 9= no response
Dizziness	4.21	1.153	.903	-1.393	24655	4.5% 7.0% 9.8% 19.9% 57.5% 1.4%	1=most/days 2=>1/wk 3=1/wk 4=1/mo 5=seldom 9= no response
Skin Irritations	4.45	1.113	3.427	-2.128	24755	5.9% 3.1% 4.2% 13.3% 72.5% 1.0%	1=most/days 2=>1/wk 3=1/wk 4=1/mo 5=seldom 9= no response
Cigarette Use – Frequency	1.99	1.975	1.588	1.800	24738	73.2% 6.3% 2.8% 1.9% 2.4% 3.2% 9.2% 1.1 %	1=0days 2=1-2 3=3-5 4=6-9 5=10-19 6=20-29 7=30 9= no response
Alcohol Use – Frequency	1.86	1.209	1.505	1.447	24697	54.6% 21.0% 11.3% 7.2% 3.8% .6% .3% 1.2%	1=0days 2=1-2 3=3-5 4=6-9 5=10-19 6=20-29 7=30 9= no response
Marijuana Use – Frequency	1.50	1.132	5.986	2.558	24688	76.8% 9.0% 5.6% 2.8% 2.1% 2.4% 1.3%	1=0x 2=1-2x 3=3-9 4=10-19 5=20-39x 6=40+ 9= no response
Cocaine Use – Frequency	1.12	.472	21.840	4.568	24591	90.9% 4.7% 1.3% 1.5% 1.6%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Hallucinogen Use – Frequency	1.20	.616	10.610	3.335	24599	87.0% 5.7% 3.1% 2.6% 1.6%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response

Factor	M^a	SD^b	Kurtosis	Skewness	N^c	Frequency	Scale
Mushroom Use – Frequency	1.30	.716	5.294	2.474	24590	80.5% 9.3% 5.5% 3.1% 1.6%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Bindro Use – Frequency	1.01	.145	277.904	15.767	24476	97.2% .5% .1% .1% 2.1%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Inhalant Use – Frequency	1.09	.394	27.969	5.035	24531	91.7% 4.5% 1.2% .8% 1.9%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Amphetamine Use – Frequency	1.08	.375	35.282	5.704	24555	93.2% 3.2% 1.0% .8% 1.8%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Heroin Use – Frequency	1.03	.242	101.033	9.608	24538	96.3% 1.1% .3% .4% 1.9%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Injected Drug Use – Frequency	1.02	.203	159.621	12.188	24574	97.2% .6% .2% .3% 1.7%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Steroid Use – Frequency	1.03	.232	114.646	10.285	24561	96.7% .9% .3% .4% 1.8%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Non-Prescribed Prescription Medication Use – Frequency	1.17	.568	13.168	3.642	24602	88.0% 5.9% 2.4% 2.1% 1.6%	1=0 2=1-2x 3=3-9x 4=10+x 9=no response
Body Satisfaction	4.66	1.497	-.020	-.639	24702	4.6% 4.9% 10.2% 18.3% 30.4% 22.0% 8.4% 1.2%	1=not at all satisfied 2=2 3=3 4=4 5=5 6=6 7=very satisfied 9=no response

Factor	M^a	SD^b	Kurtosis	Skewness	N^c	Frequency	Scale
Binging Frequency	1.53	.954	3.988	2.089	24606	66.9% 19.8% 5.7% 3.1% 2.9% 1.6%	1=never 2=1x/mo 3=2-3/mo 4=1/wk 5=2+/wk 9=no response
Purging Frequency	1.11	.498	35.722	5.661	24662	91.9% 4.5% 1.0% .5% .8% 1.4%	1=never 2=1x/mo 3=2-3/mo 4=1/wk 5=2+/wk 9=no response
Current Academic Achievement	3.03	1.304	.072	.443	24764	12.0% 24.4% 27.9% 23.0% 8.6% 1.7% 1.5% .9%	1=best 2=far> middle 3=little>middle 4=middle 5=little< middle 6=far< middle 7=bottom 9=no response
Feel About School	3.06	1.035	-.385	-.208	24818	8.7% 17.6% 39.6% 26.5% 6.9% .7%	1=hate school 2=don't like 3=like some 4=like quite a bit 5=like very much 9=no response
Happy at School	3.59	1.097	-.059	-.712	24785	6.3% 9.3% 22.8% 41.3% 19.4% .9%	1=strongly disagree 2=disagree 3=neither 4=agree 5=strongly disagree 9=no response
Cutting Class	1.48	.860	4.371	2.088	24827	68.2% 20.1% 6.9% 2.4% 1.7% .7%	1=never 2=1or2x 3=3-5x 4=6-10x 5=11+x 9=no response
School Connectedness	22.4835	4.59688	.613	-.643	24277		4-32 (min-max)

^a Mean

^b Standard deviation (measure of dispersion)

^c Size of data set (number of respondents)

**Appendix AB: Pearson Product Moment Correlations and
ANOVA's for Drug Use and Peer Victimization Composite Score
– Rank Ordered from Largest to Smallest Effect Sizes**

Factor	Statistic	F ^a	P ^b	K ^c	Omega ^{2d}	Scale
Inhalant Use – Frequency	ANOVA	11.035	.000	K=4	.026	1=0 2=1-2x 3=3-9x 4=10+x
Heroin Use – Frequency	ANOVA	9.737	.000	K=4	.023	1=0 2=1-2x 3=3-9x 4=10+x
Injected Drug Use	ANOVA	9.324	.000	K=2	.022	1=no 2=yes
Injected Drug Use - Frequency	ANOVA	9.278	.000	K=4	.022	1=0 2=1-2x 3=3-9x 4=10+x
Inhalant Use	ANOVA	9.146	.000	K=2	.022	1=no 2=yes
Heroin Use	ANOVA	8.956	.000	K=2	.021	1=no 2=yes
Non-Prescribed Prescription Medication Use – Frequency	ANOVA	8.639	.000	K=4	.020	1=0 2=1-2x 3=3-9x 4=10+x
Steroids Use – Frequency	ANOVA	8.516	.000	K=4	.020	1=0 2=1-2x 3=3-9x 4=10+x
Steroid Use	ANOVA	8.049	.000	K=2	.019	1=no 2=yes
Non-Prescribed Prescription Medication Use	ANOVA	7.930	.000	K=2	.019	1=no 2=yes
Alcohol Use	ANOVA	7.598	.000	K=2	.018	1=no 2=yes
Bindro Use	ANOVA	7.285	.000	K=2	.017	1=no 2=yes
Bindro Use – Frequency	ANOVA	7.555	.000	K=4	.017	1=0 2=1-2x 3=3-9x 4=10+x
Cigarette Use	ANOVA	6.715	.000	K=2	.016	1=yes 2=no

Factor	Statistic	F ^a	P ^b	K ^c	Omega ^{2d}	Scale
Amphetamine Use	ANOVA	5.975	.000	K=2	.014	1=no 2=yes
Marijuana Use – Frequency	ANOVA	5.770	.000	K=6	.013	1=0x 2=1-2x 3=3-9 4=10-19 5=20-39x 6=40+
Amphetamine Use – Frequency	ANOVA	5.689	.000	K=4	.013	1=0 2=1-2x 3=3-9x 4=10+x
Alcohol Use – Frequency	ANOVA	5.588	.000	K=6	.013	1=0days 2=1-2 3=3-5 4=6-9 5=10-19 6=20-29 7=30
Marijuana Use	ANOVA	4.745	.000	K=2	.011	1=no 2=yes
Mushroom Use – Frequency	ANOVA	4.516	.000	K=4	.011	1=0 2=1-2x 3=3-9x 4=10+x
Cocaine Use	ANOVA	4.222	.000	K=2	.010	1=no 2=yes
Cocaine Use – Frequency	ANOVA	4.164	.000	K=4	.010	1=0 2=1-2x 3=3-9x 4=10+x
Hallucinogen Use	ANOVA	3.366	.000	K=2	.008	1=no 2=yes
Mushroom Use	ANOVA	3.281	.000	K=2	.008	1=no 2=yes
Hallucinogen Use – Frequency	ANOVA	2.860	.000	K=4	.007	1=0 2=1-2x 3=3-9x 4=10+x

^a Ratio of between variance to within variance

^b p observed, the level of significance

^c Number of levels of the independent variable

^d Proportion of variance accounted for by the independent variable when an ANOVA was conducted

Appendix AC: Moderators between Selected Outcome Factors and Peer Victimization

Risk Factor	Proposed Moderator	$p_{\text{obs}} - \text{Model}^a$	t - Product Term ^b	$p_{\text{obs}} - \text{Product Term}^c$	$R^2 - \text{Model}^d$	Incremental R^2 ^e
Feeling Low	Gender	.000	9.335	.000	.091	.003
	Grade	.000	8.529	.000	.084	.003
	Family Connectedness	.000	-1.149	.251	.086	.000
	Teacher Relationships	.000	3.050	.002	.099	.000
	Peer Relationships	.000	5.914	.000	.193	.001
	School Connectedness	.000	7.250	.000	.138	.002
	Current Academic Achievement	.000	1.263	.207	.075	.000
Feeling Hopeless	Gender	.000	6.839	.000	.087	.002
	Grade	.000	12.254	.000	.087	.006
	Family Connectedness	.000	-2.213	.027	.083	.000
	Teacher Relationships	.000	3.219	.001	.097	.000
	Peer Relationships	.000	5.034	.000	.199	.001
	School Connectedness	.000	6.783	.000	.138	.002
	Current Academic Achievement	.000	-.401	.689	.072	.000
Considered Suicide	Gender	.000	6.058	.000	.058	.001
	Grade	.000	6.984	.000	.055	.002
	Family Connectedness	.000	-2.108	.035	.066	.000
	Teacher Relationships	.000	.415	.678	.077	.000
	Peer Relationships	.000	3.284	.001	.185	.000
	School Connectedness	.000	3.779	.000	.124	.001
	Current Academic Achievement	.000	1.508	.132	.049	.000
Attempted Suicide	Gender	.000	2.920	.004	.037	.000
	Grade	.000	-1.999	.046	.035	.000
	Family Connectedness	.000	1.332	.183	.005	.000
	Teacher Relationships	.000	2.778	.005	.064	.000
	Peer Relationships	.000	1.680	.093	.173	.000
	School Connectedness	.000	.764	.445	.115	.000
	Current Academic Achievement	.000	-1.429	.0153	.032	.000
Anxiety/Stress	Gender	.000	8.110	.000	.095	.002
	Grade	.000	14.374	.000	.104	.008
	Family Connectedness	.000	.046	.964	.089	.000
	Teacher Relationships	.000	6.213	.000	.104	.001
	Peer Relationships	.000	8.548	.000	.207	.002
	School Connectedness	.000	9.707	.000	.147	.003
	Current Academic Achievement	.000	-2.144	.032	.079	.000
Physical Health	Gender	.000	-.371	.711	.024	.000
	Grade	.000	-3.767	.000	.022	.001
	Family Connectedness	.000	-.471	.638	.043	.000
	Teacher Relationships	.000	-1.491	.136	.052	.000
	Peer Relationships	.000	-1.025	.305	.162	.000
	School Connectedness	.000	-3.161	.002	.104	.000
	Current Academic Achievement	.000	.202	.840	.017	.000
Recent Illness	Gender	.000	2.797	.005	.058	.000
	Grade	.000	10.884	.000	.063	.004
	Family Connectedness	.000	-.702	.483	.068	.000
	Teacher Relationships	.000	2.608	.009	.078	.000
	Peer Relationships	.000	6.786	.000	.186	.002
	School Connectedness	.000	5.420	.000	.127	.001
	Current Academic Achievement	.000	.500	.617	.050	.000

Risk Factor	Proposed Moderator	$p_{\text{obs}} - \text{Model}^{\text{a}}$	t - Product Term ^b	$p_{\text{obs}} - \text{Product Term}^{\text{c}}$	$R^2 - \text{Model}^{\text{d}}$	Incremental R^2 ^e
Alcohol Use	Gender	.000	6.341	.000	.013	.002
	Grade	.000	-13.823	.000	.028	.008
	Family Connectedness	.000	2.067	.039	.039	.000
	Teacher Relationships	.000	1.865	.062	.043	.000
	Peer Relationships	.000	-2.157	.031	.161	.000
	School Connectedness	.000	1.569	.117	.101	.000
	Current Academic Achievement	.000	.896	.370	.009	.000
Cigarette Use	Gender	.000	5.199	.000	.013	.001
	Grade	.000	-10.863	.000	.018	.005
	Family Connectedness	.000	1.127	.260	.039	.000
	Teacher Relationships	.000	1.445	.149	.044	.000
	Peer Relationships	.000	.886	.375	.159	.000
	School Connectedness	.000	1.089	.276	.101	.000
	Current Academic Achievement	.000	-.094	.925	.009	.000
Marijuana Use	Gender	.000	6.641	.000	.010	.002
	Grade	.000	-11.482	.000	.018	.005
	Family Connectedness	.000	1.188	.235	.038	.000
	Teacher Relationships	.000	2.730	.006	.043	.000
	Peer Relationships	.000	-.222	.825	.158	.000
	School Connectedness	.000	2.907	.004	.102	.000
	Current Academic Achievement	.000	1.186	.236	.006	.000
Body Satisfaction	Gender	.000	7.037	.000	.036	.002
	Grade	.000	4.937	.000	.032	.001
	Family Connectedness	.000	-.875	.382	.049	.000
	Teacher Relationships	.000	4.751	.000	.059	.001
	Peer Relationships	.000	2.837	.005	.168	.000
	School Connectedness	.000	7.970	.000	.110	.002
	Current Academic Achievement	.000	.817	.414	.026	.000
Eating Disorder	Gender	.000	-.656	.512	.029	.000
	Grade	.000	-3.764	.000	.024	.001
	Family Connectedness	.000	-.491	.623	.050	.000
	Teacher Relationships	.000	-1.851	.064	.057	.000
	Peer Relationships	.000	-.168	.866	.166	.000
	School Connectedness	.000	-2.389	.017	.111	.000
	Current Academic Achievement	.000	1.187	.235	.021	.000
Current Academic Achievement	Gender	.000	4.227	.000	.009	.001
	Grade	.000	.387	.699	.009	.000
	Family Connectedness	.000	.126	.900	.038	.000
	Teacher Relationships	.000	1.492	.136	.043	.000
	Peer Relationships	.000	4.748	.000	.157	.001
	School Connectedness	.000	.570	.569	.103	.000
	Current Academic Achievement	.000	1.187	.235	.021	.000
Academic Aspirations	Gender	.000	-1.447	.148	.005	.000
	Grade	.000	2.215	.027	.005	.000
	Family Connectedness	.000	.684	.494	.038	.000
	Teacher Relationships	.000	-1.949	.051	.043	.000
	Peer Relationships	.000	-1.362	.173	.155	.000
	School Connectedness	.000	-1.546	.122	.101	.000
	Current Academic Achievement	.000	-1.818	.069	.004	.000

^a p_{obs} for the model – this is the omnibus test for the model, which includes both predictor variables and the product term

^b t for the product term – this is the t for the product term alone

^c p_{obs} for the product term – this includes only the product term

^d R^2 for the model – this is the R^2 for the model, which includes both predictor variables and the product term

^e this is the change in R^2 with the addition of the product term, and thus indicates the amount of additional variance explained by they product term