VICTIMIZATION AND INTERNALIZING DIFFICULTIES:

THE MODERATING ROLE OF SOCIAL SUPPORT

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Human Development, Learning and Culture)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

December, 2017

Abstract

Children and adolescents who are targets of peer victimization experience many negative developmental outcomes, including depression and anxiety, which can have lasting effects throughout their lives. Researchers have sought to identify protective factors that lessen the negative impact of peer victimization on wellbeing. Social support has been identified as one of the most significant protective factors. Studies that examine the effect of social support from multiple sources on the wellbeing of students who are victimized by their peers have reported mixed results. The present research addressed these inconsistent findings by extending the aspects of social support that are measured to include both source and type. This study sought to answer three questions: (1) Does overall social support (regardless of type) from a) parents, b) teachers, c) classmates and d) close friends moderate the relation between overall victimization and depression and/or anxiety? (2) Does the type of social support provided (emotional, informational, appraisal and/or instrumental support) moderate the relation between victimization and depression and/or anxiety? (3) Does overall social support (regardless of type) from a) parents, b) teachers, c) classmates and/or d) close friends moderate the relation between different forms of victimization (verbal, social, physical and cyber) and depression and/or anxiety? Participants were 720 students in grades 4-7 who completed self-report measures of victimization experiences at school, perceived social support, and a screening index for depression and anxiety. Multiple regression analyses with predictors entered in blocks were run to explore the moderating role of social support in the relation between victimization and depression and/or anxiety. Results indicate that certain sources and types of social support moderate the relation between victimization and depression/anxiety, while other sources and types of social support are associated with higher depression/anxiety among 4th-7th

graders. This held true when considering both overall victimization and various forms of victimization. Results suggest that the moderating role of social support in the relation between victimization-depression and victimization-anxiety are distinct; when exploring the impact of social support from peers at school, classmates and close friends should be treated as distinct groups; social support from parents can have a positive impact on 4th-7th graders.

Lay Summary

Children and adolescents who are victimized by their peers can experience many negative health outcomes including depression and anxiety. There is evidence in research that certain factors, including social support, can lessen the negative impact of bullying on victims. It is not clear, however, which individuals in a victim's network and which types of support are most helpful to early adolescent who are bullied. The present study set out to identify the sources and types of support that can lessen the negative impact of bullying on middle school students. Findings suggest that parents can play an important role in lessening the negative impact of victimization; that depression and anxiety are distinct and should be treated as thus in studies looking at the impact of bullying on middle school students; and finally that classmates and close friends are distinct groups that influence students differently and should therefore be treated as such in research.

Preface

This thesis is an original work of the author, Maryam Mahboubi.

Data for this study was collected as part of a larger, ongoing research project carried out by the Social Emotional Education and Development research group and supervised by Dr. Shelley Hymel. The UBC Behavioural Research Ethics Board (BREB) granted ethical approval for this research [UBC BREB #H15-03336].

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Acknowledgments

I would like to express my deepest gratitude to Dr. Shelley Hymel for her guidance, support and belief in my capacity to complete this thesis, without which I may not have had the courage to do so. Also to Dr. Amery Wu for her support. I would like to express my appreciation to my husband Sabba, my parents, my friends for their support and encouragement, to Farzin for his wise guidance and finally to Christian.

Introduction

Being the target of peer victimization is humiliating and painful, and can have lifelong consequences. "It is a fundamental democratic right for a child to feel safe in school and to be spared the oppression and repeated, intentional humiliation implied in bullying" (Olweus, 1999). Over the past ten years, statements expressing similar sentiments to this have become more and more prevalent worldwide - in the media, among education authorities, global organizations, political figures and concerned citizens (Pepler, 2014; "UN Envoy Calls for," 2015; Stopbullying.gov, 2015). In fact, efforts to eliminate or reduce bullying have been ongoing for decades. Despite such efforts, there are mixed results and conflicting opinions on whether levels of bullying have changed over the years. In a review of studies that took place in 27 countries in intervals between 1990 and 2009, Rigby and Smith (2011) reported that the general level of bullying among youth has decreased in some but not all countries.

Often, education authorities rely on research to inform the legislations that are put in place to address bullying in schools (Pepler, 2014). One primary concern within the bullying literature is the plight of children who are victimized through bullying. As is demonstrated in the review to follow, victims of bullies are at increased risk for a number of mental health difficulties, including anxiety and depression (McDougall & Vaillancourt, 2015). Among other things, one factor that has been found to be a buffer the link between peer victimization and depression and anxiety is the availability of social support. Of interest in the present study was which sources and types of social support best moderated the levels of depression and anxiety in victims of bullying.

<center>**Literature Review**</center>

Bullying Definition, Prevalence and Stability

Bullying is a form of interpersonal violence characterized by an imbalance of strength or power, repetition, and the intentional infliction of harm. That is, bullying occurs when a person(s) is exposed over time to repeated, intentional infliction or attempted infliction of injury or discomfort in a relationship marked by a disparity of power (Olweus, 1993). The reported prevalence rates of victimization differ across countries, studies and age groups, ranging from 8% - 31% (Cassidy, 2008; Dulmus, Sowers, & Theriot, 2006; Hazemba, Siziya, Muula, & Rudatsikira, 2008; Juvonen, Graham, & Schuster, 2003; Kochenderfer, & Ladd, 1996; Perkins, Craig & Perkins, 2011; Seals & Young, 2003; Wolke, Woods, Stanford & Schulz, 2001). Although peer victimization is generally considered a stable experience, stability varies as a function of data collection methodology (e.g. self-report, peer-report, teacher report etc.), duration of study and age of victim (Hymel & Swearer, 2015). While peer victimization is a less stable experience among younger children (Kochenderfer-Ladd & Wardrop, 2001), it becomes a stable experience by middle elementary school over both shorter periods of 4 to 5 months (Ostrov, 2008), and longer periods of 1 to 2 years (Pouwels, Souren, Lansu, & Cillessen, 2016; Yeaung & Leadbeater, 2010). Drawing on adolescent and pre-adolescent reports of bullying and harassment on the Canadian National Longitudinal Survey, Beran (2008) found that roughly 50% of students who reported bullying or harassment in one school year, also reported bullying or harassment in the subsequent school year.

Outcomes of Peer Victimization

The negative developmental outcomes experienced by victims of bullying are well documented (see McDougall & Vaillancourt, 2015, for a review). They include detrimental

effects on academic functioning (e.g., Esbensen & Carson, 2009; Juvonen, Wang, & Espinoza, 2011; Kochenderfer, & Ladd, 1996; Smith et al., 2004) , physical health (e.g., Gini, Pozzoli, Lenzi, & Vieno, 2014; Goldbaum, Craig, Pepler, & Connolly, 2007; Rigby, 1999; Vaillancourt, Hymel, & McDougall, 2013), social relationships (e.g., Hanish & Guerra, 2002; Hodges & Perry, 1999; Scholte, Engels, Overbeek, de Kemp, & Haselager, 2007; Smith et al. 2004), and self-perceptions (Boulton, Smith, & Cowie, 2010; Esbensen, & Carson, 2009; Graham & Juvonen, 1998; Juvonen, Nishina, & Graham, 2000; Paul & Cillesen, 2003).

Peer victimization has also been linked to mental health difficulties. Specifically, victimized children and youth are at greater risk for externalizing problems (e.g., Haltigan & Vaillancourt, 2014; Hanish & Guerra, 2002; Reijntjes et al., 2011; Smith et al., 2004), including aggression, delinquency, misconduct, and attention problems (Reijntjes et al., 2011), conduct problems (Smith et al., 2004), and bullying others (Haltigan & Vaillancourt, 2014; Smith et al., 2004). Victimization is also associated with negative behavior towards self, including self-harm (Lereya et al., 2013), suicidal ideation and attempted suicide (Bonanno & Hymel, 2010; Brunstein, Sourander, & Gould, 2010). Some of these problems can continue to manifest years later (Hanish & Guerra, 2002).

Peer victimized children and adolescents also demonstrate greater internalizing difficulties (Reijntjes, Kamphius, Prinzie & Telch, 2010). Specifically, children who were victimized in elementary school have reported greater feelings of loneliness (Juvonen, Nishina, & Graham, 2000), more negative affect (Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004) and greater anxiety (Averdijk, Muller, Eisner & Ribeaud, 2011). As with children, adolescents experiencing stable victimization also reported greater anxiety and withdrawal (Bond, Carlin, Thomas, Rubin, & Patton, 2001). In fact, Averdijk et al. (2011) found that victimization can

predict anxiety up to four years later, when children experience more frequent victimization or victimization in multiple forms.

Depression is also an observed correlate of victimization (McDougall & Vaillancourt, 2015) and the experience of depression can be long-term (Hanish & Guerra, 2002). In a systematic review and meta-analysis of 29 longitudinal studies of children and adolescents, Ttofi, Farrington, Lösel and Loeber, (2011) found that the probability of experiencing depression up to 36 years later is much higher for victims of bullying than for non-involved students. This relationship held true even after controlling for a great number of pre-existing risk factors. Moreover, the relationship between victimization and depression later in life was stronger the younger children were when they experienced victimization.

Protective Factors

In addition to seeking to understand the negative outcomes of victimization, researchers have sought to identify possible protective factors that can lessen the negative impact of victimization. The trajectories to maladaptive (or adaptive) outcomes followed by victims are not homogenous. In addition to the stability and repetitiveness of victimization, which influences the extent to which certain outcomes manifest themselves (Hanish & Guerra, 2002; Smith et al. 2004), other factors and conditions in the victims' lives can influence the way in which victims of bullying are impacted. Examples of protective factors that may exist in the victims' life and which can affect their trajectory include high achievement in school, good social skills, stable family structure, and good parental monitoring (Ttofi, Bowes, Farrington & Losel, 2014). Moreover, research suggests that the impact of victimization may be lessened when contextual factors allow problem behaviors such as victimization to be interpreted as normative within that context (Bellmore, Witkow, Graham, & Juvonen, 2004; Graham &

Juvonen, 2002). One of the most significant protective factors for victimized youth, however, is the availability of social support from parents, teachers, siblings, and close friends (Ttofi et al., 2014), the focus of the present study.

Social support. Social support has been positively and causally associated with mental health, physical health and longevity (Thoits, 2011). For decades, researchers have studied the effect of social support on the wellbeing of individuals faced with life stressors (Thoits, 1995, 2011). More recently, the influence of social support on the outcomes of specific life stressors has been explored, including peer victimization. While definitions and measures of social support vary across studies, the majority of studies assess perceived social support, as opposed to actual social support, owing in large part to evidence that perceived social support is more strongly associated with wellbeing (Chu, Saucier & Hafner, 2010) and has a greater impact on mental health than the receipt of social support (Thoits, 1995).

A number of studies have examined whether social support buffers the relation between peer victimization and negative health outcomes. Of relevance to the present study is research examining the role of social support in the link between peer victimization and internalizing difficulties, specifically depression and anxiety. Studies investigating the moderating role of social support on the association between peer victimization and depression have yielded mixed results. Thus far, these studies have explored the differential influence of social support received from various sources. Some studies have shown that social support from parents is associated with a decrease in reported depression among victimized children (Averdijk, Eisner & Ribeaud, 2014), pre-adolescents (Conner-Burrow et al., 2009), particularly pre-adolescent girls (Davidson & Demaray, 2007) and adolescents (Conner-Burrow et al., 2009; Yeung & Leadbeater, 2010; Holt & Espelage, 2007). However, other studies have found no buffering influence of parent

social support (Bilsky et al., 2013; Rigby, 2000; Viviano, 2014) or buffering influence in the opposite direction, where social support from parents is associated with an increase in victims' reported depression (Desjardins & Leadbeater, 2011; Yeung & Leadbeater 2013).

Equally unclear have been the results from studies looking at peer social support. Whereas high peer support has been associated with decreased reported depression among victimized pre-adolescents (Papafratzeskakou, Kim, Longo, & Riser, 2011) and adolescents (Cooley, Fite, Rubens, & Tunno, 2015), other studies have found no moderating influence of peer support on depression among victims of peer harassment (Rigby, 2000; Viviano, 2014). Still other studies have found high emotional peer support to be associated with *increases* in reported depression among victimized adolescents (Desjardins & Leadbeater, 2011; Holt & Espelage, 2007; Yeung & Leadbeater, 2013). Inconsistent outcomes have also been observed across studies examining the links between victimization and teacher social support (Averdijk, Eisner & Ribeaud, 2014; Davidson & Demaray, 2007; Rigby, 2000; Yeung, & Leadbeater, 2010; Viviano, 2014).

Similarly, studies examining the moderating influence of social support on the link between victimization and anxiety have also yielded mixed outcomes. For children, parent and teacher social support and the mere presence of siblings have been found to have a moderating influence (Averdijk, Eisner, & Ribeaud, 2014) associated with less severe anxiety. For pre-adolescent girls, parental social support buffered the association between victimization and anxiety, predicting lower levels of anxiety (Baldry, 2004; Davidson & Demaray, 2007), whereas for pre-adolescent boys, teacher, classmate and school support were associated with less anxiety among victimized youth (Davidson & Demaray, 2007). For adolescents, one study found that greater peer social support was associated with higher, not lower, reported anxiety (Holt &

Espelage, 2007). Other studies found no moderating influence of peer support on the association

between victimization and anxiety among adolescents (Rigby, 2000; Viviano, 2014).

Interestingly, of the five studies reported above that found no moderating influence or a

negative moderating influence of social support on the link between victimization and depression

or anxiety, three of the studies reported limited internal consistency for one or more measures of

social support that they used. Specifically, Holt and Espelage (2007) reported Cronbach's alpha

of 0.66 for their measure of peer social support among middle schoolers, Desjardins and

Leadbeater (2011) reported coefficient alphas ranging from 0.66 – 0.70 for their peer support

measure and, Rigby (2000) reported alphas of 0.69 for all five source of social support. The

moderate internal consistency of the measures may have weakened the power of the tests to

detect a true interaction and may therefore be partially responsible for the outcomes observed.

Perhaps more importantly, the *type* of social support assessed has varied across the

studies reviewed above. For example, Papafratzeskakou, Kim, Longo and Riser (2011) appear to

measure emotional and informational support, while Holt and Espelage (2007) measure

emotional and instrumental support. Papafratzeskakou et al. found peer social support was

associated with decreased reported depression among adolescents, whereas Holt and Espelage

found the opposite to be true for adolescents, with peer social support associated with increases

in reported depression. At the same time, Holt and Espelage found that social support from

parents was associated with decreased reported depression among adolescents, whereas Bilsky et

al., (2013) found no buffering effects of parent support on the relationship between victimization

and depression. Bilsky et al. state that they are measuring emotional support, but the items in

their measure reflect aspects of emotional, instrumental, appraisal and informational support.

These different conceptualizations of social support potentially tap into different aspects of

support, which may relate to wellbeing differently (Chu, Saucier & Hafner, 2010). Indeed, it may not be only the source of social support that matters but also the *type* of support provided by significant others. Therefore, it is important for studies of social support to use measures that distinguish the types of social support tapped. More recent studies have begun to consider types of social support provided, with particular focus on emotional support, as described in more detail below.

To date only three research papers have explored the buffering effects of emotional support on the link between victimization and internalizing problems. All three papers drew from the same larger data set. Yeung and Leadbeater (2010; 2013) and Desjardins and Leadbeater (2011) investigated the influence that various sources of emotional support have on negative emotional outcome(s) in victimized adolescents, concurrently and across time in a sample containing both pre-adolescent and adolescents, aged 12 to 18 at the time of the first data collection. Yeung and Leadbeater (2010) examined emotional support from mothers, fathers and teachers at two time points that were two years apart, whereas Desjardins and Leadbeater (2011) and Yeung and Leadbeater (2013) compared emotional support from mothers, fathers and peers at three time points, each two years apart. While all three research papers examined depression in relationally victimized adolescents, Yeung and Leadbeater's (2010; 2013) samples also included physically victimized adolescents. Further, they assessed anxiety as well as depression as an emotional outcome, henceforth referred to as internalizing symptoms. Results of each study are described below.

Using multiple linear regression analyses, Desjardins and Leadbeater (2011) found that (1) low or average levels of father emotional support resulted in increased depressive symptoms in relationally victimized adolescents two years after victimization, whereas high levels of father

emotional support buffered this relationship and prevented an increase in depressive symptoms after two years, and (2) average or high levels of mother and peer emotional support was associated with increased levels of depression two years later among relationally victimized adolescents, whereas low levels of mother and peer emotional support was not associated with increased levels of depression after a two-year period.

Using hierarchical regression analyses, Yeung and Leadbeater (2010) found that (1) emotional support from teachers, at both high or low levels, buffered the association between relational victimization and internalizing symptoms after two years, predicting lower levels of reported depression and anxiety in relationally victimized students, and (2) high levels of mother emotional support moderated the relation between physical victimization and internalizing symptoms concurrently, predicting lower levels of depression and anxiety among physically victimized students. Unlike Desjardins and Leadbeater, Yeung and Leadbeater found no moderating influence of father or mother emotional support on relational victimization and internalizing symptoms. While the two studies used the same dataset, for the assessment of internalizing problems Desjardins and Leadbeater used only a depression subscale of the emotional problems scale for their paper, while Yeung and Leadbeater used both the depression and anxiety subscales of the emotional problems scale. Considering that the buffering influence of parental support on the relation between victimization and anxiety in adolescents has not been demonstrated empirically, one possible explanation for the inconsistency across the two research papers is that parental emotional support had the greatest influence on depression and that the inclusion of anxiety in the measure of emotional problems in the Yeung and Leadbeater study neutralized the effect of parental emotional support on depression in the outcome. This may account for the fact that Yeung and Leadbeater did not replicate Desjardins and Leadbeater's

finding demonstrating the moderating role of mother and father emotional support on the association between relational victimization and internalizing symptoms.

Drawing from the same larger data set as the two Leadbeater studies cited above, in a later paper Yeung and Leadbeater (2013) made a distinction between early adolescents (12 – 15 year olds) and late adolescents (16 – 18 year olds) in their sample and treated each group as a separate population for the analyses. In addition to this, they explored sex differences in the relationships observed. Yeung and Leadbeater (2013) found that: (1) For early and late adolescent boys, higher levels of friend emotional support buffered the positive relationship of both physical and relational victimization with depression and anxiety, predicting lower levels of reported depression and anxiety in victimized male adolescents. (2) For early adolescent girls, higher levels of friend emotional support increased the influence of physical victimization on depression and anxiety, predicting higher levels of depression and anxiety. (3) For early adolescent girls, higher levels of mother emotional support buffered the positive link between physical victimization and depression and anxiety, predicting lower levels of depression and anxiety. (4) For early adolescent boys, higher levels of father emotional support increased the influence of relational victimization on internalizing symptoms, predicting higher levels of reported depression and anxiety whereas, for late adolescent boys, higher levels of father emotional support buffered the positive link between physical victimization and internalizing symptoms, predicting lower levels of reported depression and anxiety.

Although the findings reported in these three papers are complex, they point to the need to look at differences across sex, age groups (pre-adolescents and adolescents), form of victimization, source of social support, and type of social support. These three research papers were the first to consider both *source* and *type* of social support as a moderator of the link

between victimization and indices of wellbeing. To build on these findings the present study considered four different types of support: emotional, instrumental, informational, and appraisal support. Emotional support refers to expressions of empathy, love and trust; instrumental support reflects in helping behaviors; informational support takes the form of offering advice and appraisal support refers to evaluative feedback. As demonstrated in the review above, if measures of social support do not distinguish the types of support provided, they risk tapping into different aspects of support which may relate to wellbeing differently and paint a confusing picture of the role of social support in buffering the effects of victimization on wellbeing.

To address the need for a measure that clearly distinguishes types of social support, the present study assessed social support using the *Child and Adolescent Social Support Scale* (CASSS; Malecki, Demaray, Elliot, 2000), a multidimensional measure that applies a definition of social support tied to the five primary elements of social support identified theoretically by Tardy (1985). Tardy proposed that, rather than coming to an agreement on a single conceptualization of social support, researchers should recognize and discuss the issues involved in defining the concept of social support. To this end, Tardy identified several primary elements of social support that merit consideration: direction, description and evaluation, disposition, content, and network. *Direction* refers to giving versus receiving social support; researchers must decide to investigate one or both of these. *Disposition* refers to the availability of support versus the utilization of support. For the element of *description vs. evaluation*, the former describes social support available, the latter involves an evaluation of one's satisfaction with social support. Tardy groups these two aspects together to highlight their distinction. With regard to *content*, Tardy distinguishes four types of support: emotional (empathy, love, trust), instrumental (helping behaviors), informational (advice) and appraisal (evaluative feedback).

According to Tardy, these four types of support account for most support content. *Network* refers to the individuals providing and receiving support. Tardy lists the following as possible members of a network: family, close friends, neighbours, co-workers, community and professionals. When discussing receipt of support, the term "source of support" is often used to refer to those from whom support is received or available. Of primary interest in the present study is the source and type or form of social support that students perceive to be available to them.

The CASSS measures perceived informational, instrumental, appraisal and emotional support available from parents, teachers, classmates, close friends and people in my school. Cronbach's alpha coefficient scores range from 0.88 to 0.96 for each of the subscales of the CASSS. While there are a fair number of peer victimization studies that have used the CASSS to measure social support (Conner-Burrow et al. 2009; Davidson & Demaray, 2007; Johnson, Whitedise, Mansell, McKelvey, & Gargus 2009; Tennant, Demaray, Coyle & Malecki, 2013), none of these studies have investigated the differential moderating role of emotional, instrumental, informational *and/or* appraisal support on the links between victimization and depression or anxiety. Malecki and Demaray (2003) have, however, examined which of these types of support students most frequently perceived from their parents, teachers, classmates and close friends. They found that, of the four types of support, students perceived teachers as most likely to provide informational support, and parents as most likely to provide both emotional and informational support, whereas peers (classmates and friends) were perceived as providing primarily emotional and instrumental support. A study conducted with adolescents in Spain found similar results (Hombrados-Mendieta, Gomez-Jacinto, Dominguez-Fuentes, Garcia-Leiva, & Castro-Travé, 2012). Of interest in the present study was whether and how these different

types and sources of support influence the links between peer victimization and reports of

anxiety and/or depression.

The Present Study

The primary goal of the present research was to extend existing literature by examining, in one study, the buffering effects of *various types* of social support and the social support available from *multiple sources* in the social networks of pre-adolescent students. Pre-adolescents were the focus of the present study in light of evidence showing that peer victimization peaks during the middle school years (see Hymel & Swearer, 2015, for a review) putting this age group at the highest risk for experiencing the negative consequences of victimization.

Specifically, the present study first explored student perceptions of support available from parents, teachers and peers as possible buffers of the impact of victimization on both anxiety and depression. Peer support was examined by measuring both classmate and close friend support. This distinction among peer subgroups is important, given research by Malecki and Elliot (1999) suggesting that classmates and close friends are distinct groups, offering different levels of support across the age span of a student.

The present study also examined the buffering effect of each of the four sources of social support on the links between *various forms of victimization* and depression and anxiety. Specifically, the study evaluated the potential buffering effect of parent, teacher, classmate and close friend support on the links between anxiety/depression and verbal, social, physical and cyber victimization, each considered separately. Although previous research has considered the buffering effect of social support on various forms of victimization and wellbeing (Yeung & Leadbeater, 2010, 2013), these studies considered only relational and physical victimization, the present study extended previous research by considering the four forms of victimization prevalent in the bullying literature (see Hymel & Swearer, 2015 for a review).

Subsequent analyses examined variations in the *type* of support provided, considering emotional, informational, appraisal and instrumental support. Although previous research has considered more global indices of support (e.g., Averdijk, Eisner & Ribeaud, 2014; Conner-Burrow et al., 2009) or have focused on emotional support (Desjardins & Leadbeater, 2011; Yeung & Leadbeater, 2010, 2013), the present study extended previous research by considering each of the four types of support identified by Tardy (1985) – emotional, informational, instrumental and appraisal support.

It is beyond the scope of this study to examine at the same time the differential effect of various *sources* and *types* of social support, and different *forms* of victimization, given the limits of sample size. Therefore, initial analyses explored the moderating effect of different *sources* of social support on overall victimization and on each *form of victimization* and their links to depression and anxiety. Subsequent analyses explored whether different *types* of social support moderated the link between victimization and depression and anxiety, as detailed below. In this connection, the research questions for the present study include the following:

1. Does overall social support (regardless of type of support) from a) parents, b) teachers, c) classmates and d) close friends moderate the relation between overall victimization (operationalized as a composite of different forms of victimization) and depression and/or anxiety?

2. Does social support from a) parents, b) teachers, c) classmates and d) close friends moderate the relation between different forms of victimization (verbal, social, physical and cyber) and depression and/or anxiety?

3. Do a) emotional, b) informational, c) instrumental and d) appraisal support (regardless of source) moderate the relation between overall victimization (operationalized as a composite of different forms of victimization) and depression and/or anxiety?

Hypotheses

Most previous studies of social support, peer victimization and wellbeing have looked at pre-adolescents and adolescents as one group. However, Yeung and Leadbeater's (2013) treatment of these two age groups as distinct brought to light the differential effect of social support on the wellbeing of victims of peer harassment in each age group. A clearer picture of the role of social support in the mental wellbeing of targets of peer victimization begins to emerge when the studies that consider early adolescents only are examined. Specifically, social support from parents, peers, teachers and the school was found to buffer the effects of peer victimization on depression and anxiety in early adolescents (Baldry, 2004; Davidson & Demaray, 2007; Papafratzeskakou, Kim, Longo & Riser, 2011; Yeung & Leadbeater, 2013). While some studies found the buffering effects to differ between boys and girls (Davidson & Demaray, 2007; Yeung & Leadbeater, 2013), other studies found no differences based on sex (Baldry, 2004; Papafratzeskakou, Kim, Longo & Riser, 2011). It is hypothesized, therefore, that the initial analyses will demonstrate that parent, teacher and peer support each serve as a moderator between victimization and depression and anxiety in pre-adolescents..

Considering that to date only the Leadbeater and colleagues study (2010/2011/2013) has explored the moderating effect of *type* and *source* of social support on the wellbeing of victimized pre-adolescents, but focused on emotional support only, the data available does not

allow for any sound hypothesis to be put forth regarding the type of social support that may act as a moderator for victimization and depression and anxiety.

Subsequent analyses, examining the impact of various sources of social support across different forms of victimization and depression and anxiety, were exploratory, with no differential hypotheses specified. Although a number of the studies reviewed above included assessments of multiple forms of victimization, with the exception of Yeung and Leadbeater (2013) and Papafratzeskakou, Kim, Longo and Riser (2011), all other studies of pre-adolescents used a composite score of victimization for their analyses. No clear pattern emerges from the two studies that do examine various forms of victimization. This question too remains exploratory.

Method

Data for the proposed study were collected in the spring of 2016 as part of the School

Climate and Bullying Research Project, an ongoing, collaborative research project looking at the

relationships between bullying and school climate in schools across the lower mainland of

British Columbia, Canada. Dr. Shelley Hymel and her research team at the Social Emotional

Education and Development Research lab initiated this research in the 2009/2010 school year.

As part of this ongoing research, students in participating schools are asked to complete self-

report measures of school climate, school bonding, and bullying and victimization (as described

below) each year. Of interest in the proposed research are the student reports of peer

victimization. In addition, in the 2016 data collection, students were also asked to complete self-

report measures of perceived social support, as well as a screening index of depression and

anxiety, as described below.

The research was approved by the UBC Behavioral Ethics Board as well as the Burnaby

school district of the lower mainland of British Columbia, and principals in participating schools.

A copy of the approval certificate from the UBC Behavioral Ethics Board is provided in

Appendix A.

Participants

The sample for the present study consists of 720 students enrolled in six elementary

schools in the Burnaby district in British Columbia, Canada. The participants were students

from grades 4-7 (age 10-13), with 367 boys and 353 girls. The sample was predominantly Asian

(43%), followed by Caucasian (17%), South Asian (15%), of mixed descent (13%), Middle

Eastern (3%), Latin American (3%), Aboriginal (2%), African/Caribbean (2%), and other (2%).

Procedure

As part of the ongoing 2016 School Climate and Bullying Research Project participant in the present study completed measures of (a) bullying/victimization, (b) school climate, (c) school bonding, (d) social support, and (e) depression and anxiety. The proposed study explores the relations among reported victimization, perceived social support, and self-reported levels of depression and anxiety. Each of the measures included in the proposed study is described in detail below

At the request of administrators in the Burnaby School District, and with approval from the UBC Behavioral Ethics Committee, passive consent procedures were used, given that the findings from the larger School Climate and Bullying study were considered part of the schools' own self-evaluation. Parents were informed of the research and were given the option of requesting that their child not participate in the study. Informed assent was obtained from all participating students. Students were informed that their participation was voluntary and that they could withdraw from the study at any time without penalty.

Trained research assistants administered paper-and-pencil surveys in the classroom setting at a time arranged with teachers. Completion of the survey required approximately 60 minutes of school time.

Measures

As in previous years of this research project, paper-and-pencil self-report instruments which had been developed specifically for use with this age group were used to assess all proposed constructs (variables). Each measure is described in detail below and a copy of the full survey is provided in Appendix B.

Demographic information. The demographic information collected included school name, grade level, age (in years), sex, years residing in Canada, and ethnic or cultural background. Information on sex and grade level of participants will be used for the preliminary analysis.

Victimization. The frequency with which students were victimized by peers was assessed using a four-item self-report measure, tapping four different forms of bullying. Specifically, students were given a definition of each of four different forms of peer victimization (physical, verbal, social, cyber) and asked to indicate how often they have been victimized by each form over the present school year (e.g., How *often have you been* <u>*physically*</u> *bullied….when someone: hit, kicked, punched, pushed you; physically hurt you; damaged or stole your property)*. Responses were made on a 5-point, Likert scale (1= *never*; 2= *once or a few times*; 3= *every month*; 4= *every week*; 5= *several times a week*). As targets of peer victimization often experience multiple forms of bullying (Bradshaw, Waasdorp and O'Brannan, 2013; Wang, Iannotti, Luk, Nansel, 2010), for the initial analyses a composite score was computed to create two dummy variables; high victim and low victim groups, as described below.

In consideration of Yeung and Leadbeater's (2010, 2013) studies that found differential effects of social support depending on whether physical victimization or relational victimization and wellbeing were considered, for the secondary analysis, one score were computed for each form of victimization (social, verbal, physical and cyber) using the item from the measure that pertains to it. The various forms of victimization were not considered in the initial analyses for two reasons. First, the high number of analysis that would be needed to evaluate source of support (4), type of support (4) and form of victimization (4) simultaneously makes for a complex analysis for which the present sample size of 720 would not allow for sufficient power. Second, the fact that single-item measures of victimization are being used to determine the level of each form of victimization does not make for a

very strong measure. Accordingly, this secondary analysis was conducted as an initial exploration in order to shed some light for follow-up studies.

In order to address the challenge faced when students with qualitatively different experiences generate the same total score or mean score, dummy variables were computed. To illustrate this challenge, a student who selected "never" (score of 1) for three forms of victimization, and "several times a week" (score of 5) for one form of victimization, would end up with a total score of 8 or a mean score of 2. Similarly, a student who selected "once or a few times" (score of 2) for all four forms of victimization, or a student who selected "never" (Score of 1) for two forms of victimization and "every month" (score of 3) for two forms of victimization, will both also end up with a total score of 8 or mean score of 2. One of these students is being victimized several times a week, while another is being victimized a few times in the year and yet another is being victimized every month. To consider all three students as experiencing similar levels of victimization and stress when analyzing the effects of social support on varying levels of victimization and depression and/or anxiety would compromise the validity of the analyses in the present study. While there is no full-proof solution to this challenge, the use of dummy variables at least allows for an awareness around what is being considered high victimization and what is being considered low victimization.

To create the dummy variables, the data on victimization were considered. For the 85%-98% of responses to each question on form of victimization (e.g. how often have you been physically bullied) that fell under the category of "never" or "once or a few times", the participants were given a score of 1. For answers that fell under the categories of "every month", "every week", or "several times a week" for any one of the different forms of victimization,

participants were given a score of 2. For each form of victimization, students who scored 1 were categorized as "low victim" and those who scored 2 were categorized as "high victim".

To create the composite high victim and composite low victim groups, the dummy scores for each form of victimization were added together, providing total scores ranging from four to eight. Students scoring five or higher were categorized as "high victim" whereas those scoring four were categorized as "low victim". Students in the high victim group, at the very minimum, reported being victimized once a month. Any student reporting victimization less than this would be categorized as low victim. Although this means that students with qualitatively different experiences were categorized as "high victim", (those experiencing victimization once a month with those experiencing victimization several times a week) as mentioned above, creating the dummy variables allowed for some awareness of what is being considered high and low victimization.

Social support. Student perceptions of both the type and source of social support available to them was assessed using the Child and Adolescent Social Support Scale (Malecki, Demaray, Elliot, 2000). This 60-item measure assesses five different sources of social support - parent, teacher, close friend, classmate and people in my school and, for each source, assesses four different types of social support – emotional, informational, appraisal, and instrumental – in terms of both frequency (i.e., How often?...never, almost never, some of the time, most of the time, almost always, or always) and importance (i.e., Important?....not important, important or very important). While the frequency rating is always assessed, the importance rating is optional. Previous research has documented the high reliability and validity of the scale (Malecki, Demaray, & Elliot, 2014), with Cronbach alphas for each of the frequency subscales being quite high: parents (.88-.96), teacher (.90-.96), classmate (.91-.96), close friend (.93-.97),

and people in my school (.95-.96). Acceptable reliability for *type* of support within each frequency subscale has also been documented in previous research (Malecki & Demaray, 2003), with Cronbach's alpha ranging from .73 to .82 for the parent subscale, .81 to .82 for the teacher subscale, .80 to .87 for the classmate subscale, and .83 to .88 for the close friend subscale.

For the present research, given limited time available, only frequency of social support was assessed (not importance) and only four (instead of five) sources of support were evaluated: parent (or guardian), teachers (or other adult at school), classmates, and close friends, as these represent the sources of support believed to confer resilience against victimization (Ttofi et al., 2014). For each source of social support, 12 items were used to assess four types of perceived social support: emotional (3 items, e.g., *My parents understand me* and *My teacher treats me fairly.*), informational (3 items, e.g., *My classmates give me good advice* and *My close friend explains things that I don't understand.*), appraisal (3 items, e.g., *My teachers nicely tell me when I make mistakes* and *My close friend nicely tells me the truth about how I do on things*) and instrumental (3 items, e.g., *My parents take time to help me decide things* and *My classmates ask me to join activities*) (see Appendix B for a full description of the items included in the scale). Participants rated each item in terms of how often they received that type of support. Frequency was rated on a 6-point scale (1=*never*; 2=*almost never*; 3=*some of the time*; 4=*most of the time*; 5=*almost always*; 6=*always*). The average of responses to each subscale were computed as a composite of each source of support, with higher scores reflecting more social support from each source. The twelve items across the four subscale corresponding to each type of support (emotional, informational, instrumental and appraisal) were averaged to provide four type scores, with higher scores reflecting more of the given type of support.

Depression and anxiety. Depression and anxiety were measured using the 25-item, Revised Child's Anxiety and Depression Scale, shortened version (RCADS-25; Ebesutani et al. 2012). The RCADS-25 provides general indicators of overall levels of worry and sadness among subjects. The results generated through use of the scale cannot be used to diagnose clinically significant anxiety or depression. Previous research has documented the validity of the Revised Child's Anxiety and Depression Scale (RCADS; Chorpita, Moffitt & Gray, 2005) and the reliability of the RCADS-25 (Ebesutani et al. 2012). The alphas for the RCADS-25 subscales range between .79-.80 (depression) and .86-.91 (anxiety). The depression subscale is made of 10 items (e.g., *I feel sad or empty* or, *Nothing is much fun anymore*), the anxiety subscale is made up of 15 items (e.g., *I worry what other people think of me* or, *I feel scared if I have to sleep on my own*). Participants were asked to indicate, on a 4-point scale (1=*never;* 2=*sometimes*; 3=*often*; 4=*always*) how often each of 25 statements happen to them. The total score for the anxiety subscale can range between 0 and 45, and the total score for the depression subscale can range between 0 and 30, with higher scores reflecting greater depression/anxiety. For this study, responses to each subscale were averaged to create one score for depression and one score for anxiety.

Results

Plan of Analysis

The aim of the proposed study was to explore whether certain types and sources of social support moderate levels of depression and anxiety in students between the ages of 10 and 13, including those who are physically, verbally, relationally and/or cyber victimized by their peers and whether these effects vary for pre-adolescent boys and girls. As a first step, the data were cleaned, and descriptive statistics were generated. Following this, preliminary analyses were conducted to evaluate the reliability (internal consistency) of each measure, to test assumptions of normality, non-linearity, multicollinearity, and homoscedasticity, to asses age and sex differences for each of the variables and finally, to examine the relations among social support type and source variables (moderator variables), victimization (independent variable), and depression and anxiety (dependent variables) measures and to verify expected relations among these variables. The primary analyses were conducted using multiple regression with predictors entered in blocks to explore whether and how social support moderates the relationship between victimization, and depression and anxiety.

Descriptive Statistics

Table 1, below, contains descriptive statistics for the independent, moderator and dependent variables. Skewness values and visual inspection revealed that none of the variables were normally distributed. Depression, anxiety and victimization were positively skewed, whereas parent support, teacher support, classmate support and close friend support were negatively skewed. Skewness values less than -2 and greater than 2 were used as cut-offs, all values fell within the acceptable range.

Table 1. Descriptive Statistics for Independent, Moderator and Dependent Variables

Variable	Mean	Standard deviation	Skewness
Victimization	1.52	.56	1.80
Parent Social Support	4.64	1.00	-.63
Teacher Social Support	4.71	.95	-.69
Classmate Social Support	4.10	1.11	-.11
Close Friend Social Support	5.11	1.10	-.11
Emotional Support	4.62	.82	-.45
Informational Support	4.63	.87	-.60
Appraisal Support	4.42	.90	-.37
Instrumental Support	4.46	.91	-.49
Depression	.64	.46	1.09
Anxiety	.70	.46	.997

Depression, anxiety, social support and victimization scores were transformed to Z scores.

Preliminary Analyses

   Sex and grade differences in all variables. To assess sex, grade and sex x grade

differences for each variable, a series of 2 (sex) by 4 (grade) univariate analyses of variance

(ANOVA) were conducted. Significant main effects of sex were found for depression, $F(1,704)$

= 4.93, $p<.03$, with girls ($M=.68$, $SD=.45$) reporting higher levels of depression than boys

($M=.60$, $SD=.46$). Grade level differences were non-significant for depression. Significant main

effects of both sex, $F(1,703)=23.45$, $p<.001$, and grade, $F(3,703)=3.94$, $p<.01$ were observed for

anxiety. Girls reported higher levels of anxiety ($M=.79$, $SD=.49$) than boys ($M=.62$, $SD=.41$).

According to post hoc analyses, Grade 4 students reported feeling higher levels of anxiety (M=.83, SD=.55) than students in Grade 5 (M=.66, SD=.42), Grade 6(M=.67, SD=.41) and Grade 7 (M=.69, SD=.45). The grade by sex interactions for both depression, $F(3,704)$=1.76, p>.05, and anxiety, $F(3,703)$=1.05, p>.05, were nonsignificant, indicating that levels of self-reported depression and anxiety in each grade level did not differ significantly by sex.

Significant main effects were observed for each source of social support. According to post hoc analyses, for parent social support, $F(3,702)$=5.64, p=.001, it was observed that students in Grade 4 (M=4.81, SD=.97) and Grade 5(M=4.77, SD=.91) reported significantly higher levels of parent support than students in Grade 6 (M=4.41, SD=1.02). For Classmate support, $F(3,699)$=3.86, p<.01, students in Grade 5 (M=4.27, SD=1.09) reported significantly higher levels of classmate support than their peers in Grade 6 (M=3.87, SD=1.10). There were no significant differences between girls and boys in perceived parent support, $F(1,702)$=1.27, p>.05 or self-reported classmate support, $F(1,699)$=.98, p>.05, indicating that both sexes reported similar levels of parent support and classmate support. For teacher social support, student reports indicated significant sex differences, $F(1,699)$=4.00, p<.05, and grade differences, $F(3,699)$=7.75, p<.001. Girls (M=4.80, SD=.89) reported significantly higher levels of teacher support than boys (M=4.63, SD=.99), and, according to post hoc analyses, students in Grade 4 (M=4.86, SD=.87) and Grade 5 (M=4.88, SD=.91) reported significantly higher levels of teacher support than their peers in Grade 6 (M=4.44, SD=.97). The grade by sex interaction, $F(3,699)$=.38, p>.05 was nonsignificant, indicating that levels of teacher support in each grade did not differ significantly by sex. For close friend support, however, significant sex, $F(1,708)$=6.52, p<.02 differences as well as grade by sex interactions, $F(3,708)$=3.09, p<.03 were observed. Overall, girls (M=5.22, SD=1.05) reported higher levels of close friend support

than boys (*M*=4.99, *SD*=1.14). According to post hoc analyses, in Grade 6 (girls, *M*=5.27, *SD*=.96; boys, *M*=4.68, *SD*=1.24) and Grade 7(girls, *M*=5.24, *SD*=.96; boys, *M*=4.96, *SD*=1.01), girls reported significantly higher levels of close friend support than boys, while in Grade 4 (girls, *M*=5.12, *SD*=1.20; boys, *M*=5.27, *SD*=1.31) and Grade 5 (girls, *M*=5.23, *SD*=.1.21; boys, *M*=5.11, *SD*=.98), sex differences were non-significant, indicating that boys and girls reported similar levels of close friend support. No significant differences were observed between grades 4, 5, 6, and 7 for close friend support, $F(3,708)$=1.25, p>.05, indicating that students across the grade levels reported similar levels of close friend support.

Significant main effects were observed for each type of social support. For emotional support, $F(3,703)$=5.68, p=.001, results of post hoc analyses indicated that students in Grade 4 (*M*=4.71, *SD*=.07) and Grade 5(*M*=4.77, *SD*=.06) reported significantly higher levels of emotional support than students in Grade 6 (*M*=4.44, *SD*=.06). Similarly, for informational support, $F(3,703)$=4.44, p=.004, results of post hoc analyses indicated that students in Grade 4 (*M*=4.72, *SD*=.07) and Grade 5(*M*=4.75, *SD*=.06) reported significantly higher levels of informational support than students in Grade 6 (*M*=4.44, *SD*=.07). Again, for appraisal support, $F(3,703)$=6.44, p=.001, students in Grade 4 (*M*=4.55, *SD*=.08) and Grade 5(*M*=4.58, *SD*=.06) report significantly higher levels of appraisal support than students in Grade 6 (*M*=4.20, *SD*=.07), according to post hoc analyses. For instrumental support, $F(3,703)$=5.77, p=.001, post hoc analyses indicated that students in Grade 4 (*M*=4.55, *SD*=.08), Grade 5(*M*=4.58, *SD*=.07) and Grade 7(*M*=4.47, *SD*=.06), report significantly higher levels of instrumental support than students in Grade 6 (*M*=4.21, *SD*=.07). There were no significant differences between girls and boys in emotional support, $F(1,703)$=.87, p>.05 or informational support, $F(1,703)$=.89, p>.05 or appraisal support, $F(1,703)$=2.42, p>.05 or instrumental support, $F(1,703)$=.18, p>.05, indicating

that both sexes reported similar levels of all four types of support. The grade by sex interactions for emotional support, $F(3,703)=1.11$, $p>.05$, informational support, $F(3,703)=1.63$, $p>.05$, appraisal support, $F(3,703)=1.72$, $p>.05$, and instrumental support, $F(3,703)=1.25$, $p>.05$, were nonsignificant, indicating that levels of each type of support in each grade did not differ significantly by sex.

Finally, for victimization, no significant effects were observed for sex, $F(1,708)=1.14$, $p>.05$, or grade, $F(3,708)=1.18$, $p>.05$, or sex by grade interactions, $F(3,708)=2.33$, $p>.05$, indicating that the levels of victimization were not significantly different between girls and boys or among students in grades 4, 5, 6 and 7.

Correlational analyses. One-tailed, Pearson Product Moment Correlations were computed to explore the relationships among the independent, moderator and dependent variables. The relationships observed between the independent and moderator variables and victimization (dependent variable) were significant at the .01 level, as shown in Table 2 below. Higher levels of victimization were associated with higher levels of depression and anxiety, and with lower levels of parent, teacher, classmate and close friend social support.

Table 2. Bivariate Correlations Among Independent, Moderator and Dependent Variables.

Variable	1	2	3	4	5	6	7	8	9	10
1: Victimization										
2: Depression	.43									
3: Anxiety	.39	.70								
4: Parent Support	-.20	-.40	-.25							
5: Teacher Support	-.17	-.29	-.14	.51						
6: Friend Support	-.22	-.30	-.17	.45	.50					
7: Classmate Sup	-.32	-.38	-.26	.42	.53	.55				
8: Emotional Sup	-.33	-.48	-.28	.72	.76	.71	.73			
9: Informational Sup	-.27	-.39	-.20	.71	.75	.71	.77	.84		
10: Appraisal Sup	-.28	-.40	-.21	.70	.76	.72	.78	.85	.85	
11: Instrumental Sup	-.27	-.43	-.25	.71	.75	.72	.78	.84	.88	.87

Note. N=709 to 720. All correlations reported in Table 2 were significant at the .01 level (1-tailed).

Testing Assumptions

Multicollinearity. The assumption of multicollinearity is that the independent variables are not highly correlated. Moderator variables are also treated as independent variables therefore in the present study, there are five independent variables. The Tolerance Index and the Variance Inflation Factor (VIF) for the independent and moderator variables indicate that the assumption of multicollinearity was satisfied.

Independence of errors. The assumption of independence of errors is that the residuals are independent of one another. A visual examination of the residual plots indicated that this assumption had been met.

Normality. The assumption of normality is the assumption that the residuals are normally distributed. A visual examination of the normal P-P plot and histogram of residuals confirmed that the assumption was met.

Homoscedasticity. The assumption of homoscedasticity is that the variance of the residuals is constant. A visual examination of the standardized residual-standardized predicted value scatterplot as well as the residual plot indicated that this assumption was met.

Primary Analyses

Significant source of social support. To investigate whether and how each of the four sources of support (parents, teachers, close friends, classmates) moderate the relation between victimization and depression and/or anxiety, eight multiple regression analyses were run; two for each source of support, with either depression or anxiety serving as the outcome variable. For all eight analyses, the predictors were entered in the model in three sequential blocks. In order to control for the effects of grade, this variable was entered in step one, sex and victimization (composite) were entered in step two, the source of support, and four interaction terms (Source of support × Victimization; Source of support × Sex; Sex × Victimization; Source of support × Sex × Victimization) were entered in step three. These interaction terms were entered to account for the joint influence of victimization, social support and sex as well as the influence of combinations of these variables.

Table 3. Regression Analysis Predicting Depression from Sex, Victimization and Parent Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.001	.001				
Constant				.191	.194	.982
Grade			-.038	-.034	.034	-1.014
Step 2:	.136	.132**				
Constant				-1.16**	.233	-4.993
Grade			-.038	-.034	.031	-1.094
Sex			.105	.208**	.069	3.005
Victimization			.353	.866**	.086	10.080
Step 3:	.265	.129**				
Constant				-.691	.367	-1.883
Grade			-.078	-.070*	.029	-2.377
Sex			.081	.161	.209	.772
Victimization			.282	.693**	.264	2.618
Parent Support			-.903	-.897**	.320	-2.806
Parent Support × Victimization			.648	.479^T	.239	2.008
Parent Support × Sex			.740	.466*	.202	2.311
Sex × Victimization			.003	.004	.167	.023
Parent Support × Victimization × Sex			-.846	-.402**	.152	-2.647

*p<.05; **p<.01

Note. R^2= percentage of variance in dependent variable accounted for by predictor variables entered in model; ΔR^2=change in R^2 when additional predictor variables were entered in the given step of the model*;* β=standardized beta coefficient*;* b=unstandardized beta coefficient;

SE(b)=standard error of *b; t*=t-value. Standardized Z-Score means used for support variables and dependent variables (depression and anxiety).

Depression. As shown in Table 3 above, when predicting depression from grade, sex, victimization, parent social support, Parent support × Victimization, Parent support × Sex, Sex × Victimization, Parent support × Sex × Victimization, grade on its own did not account for significant variance in depression, *F-change (*1,708)=1.03, *p>*.05. The addition of sex and victimization in step two of the model was, however, significant, *F-change* (3,706)=54.93, *p<.001,* accounting for 13% of variance in depression. The addition of the interaction terms in step three of the model was also significant, *F-change (*8,701)=24.52, *p<*.001, accounting for an additional 13% of variance in depression.

In the above regression analysis, the influence of victimization on reported depression is a function of two parts; victimization, and the interaction of victimization, sex and social support. Victimization significantly predicted variance in depression, *b*=.282, *t*(701)=2.618, *p<*.01, with higher levels of victimization associated with higher levels of depression. Social support also significantly predicted variance in depression in the opposite direction, *b*=-.897, *t*(701)=-2.806, *p<*.01. That is, higher levels of parent support were associated with lower levels of depression. The association between parent support and sex interacted to predict depression, *b*=.466, *t*(701)=2.311, *p<*.05, indicating that the parent support-depression relationship is different for girls and boys. Finally, the interaction of victimization, social support and sex was significant, *b*=-.402 *t*(701)=-2.647, *p<*.01, indicating that the joint influence of social support and victimization on depression depends in part on whether you are a girl or boy.

As demonstrated in Figure 1 below, both boys and girls in the high and low victim groups were better off when they reported higher levels of parent support than were their peers who

reported lower levels of parent support. For girls, the positive effect of higher parent support on depression was most evident for the high victim group.

Figure 1. Parent Support and Victimization as Predictors of Depression for Male and Female 10-13-Year-Old Students
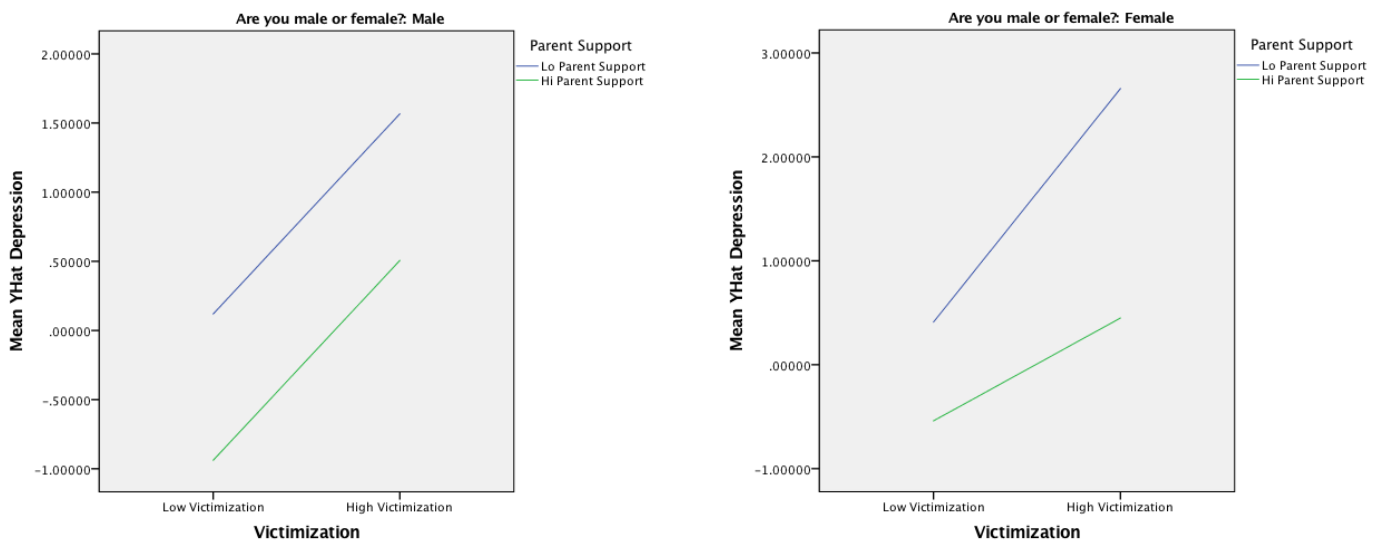
When predicting depression from grade, sex, victimization, teacher social support, Teacher support × Victimization, Teacher support × Sex, Sex × Victimization, Teacher support × Sex × Victimization, grade on its own did not account for significant variance in depression, *F-change (*1,705)=1.18, *p*>.05. The addition of sex and victimization in step two of the model, however, was significant, *F-change* (3,703)=55.76, *p<.001,* accounting for 14% of variance in depression. The addition of the interaction terms in step three of the model was also significant, *F-change (*8,698)=10.52, *p*<.001, accounting for an additional 6% of variance in depression.

Table 4. Regression Analysis Predicting Depression from Victimization, Sex and Teacher Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.002	.002				
Constant				.208	.195	1.066
Grade			-.041	-.037	.034	-1.085
Step 2:	.138	.137**				
Constant				-1.153**	.233	-4.950
Grade			-.042	-.038	.031	-1.207
Sex			.106	.211**	.069	3.040
Victimization			.356	.876**	.086	10.165
Step 3:	.199	.060**				
Constant				-1.101**	.383	-2.875
Grade			-.069	-.062 ^{T}	.031	-2.007
Sex			.168	.334	.220	1.516
Victimization			.381	.938**	.279	3.363
Teacher Support			-1.019	-1.01**	.322	-3.139
Teacher Support × Victimization			.838	.615*	.242	2.541
Teacher Support × Sex			.714	.467*	.212	2.201
Sex × Victimization			-.082	-.095	.176	-.537
Teacher Support × Victimization × Sex			-.757	-.371*	.160	-2.315

*$p<.05$; **$p<.01$

In the above regression analysis, the influence of victimization on reported depression is a function of three parts; Victimization, Teacher support × Victimization, Teacher support × Victimization × Sex. Victimization significantly predicted variance in depression, $b=.938$,

t(698)=3.363, *p*<.01, with higher levels of victimization associated with higher levels of

depression. Conversely, higher levels of teacher support were associated with lower levels of

depression, *b*=-1.010, *t*(698)=-3.139, *p*<.01. However, this relationship was varied for boys and

girls, *b*=.467, *t*(698)=2.201, *p*<.05. That is to say, the association of teacher support and

depression differed for girls and boys. The positive association between victimization and

depression tended to be higher with higher teacher support, *b*=.615, *t*(698)=-2.541, *p*=.01,

however, to understand the joint influence of victimization and teacher support on depression,

sex must be taken into account, *b*=-.371, *t*(698)=-2.315, *p*<.05. Figure 2 below further elaborates

on this relationship.

As shown in Figure 2, both boys and girls in high and low victim groups benefited from

higher levels of teacher support when compared to their peers who reported lower levels of

teacher support. For girls, the effect of higher teacher support on depression was greater among

those reporting higher victimization. For boys, the opposite was true, where higher teacher

support had a greater effect among those who reported lower victimization.

Figure 2. Teacher Support and Victimization as Predictors of Depression for Male and Female

10-13-Year-Olds Students.
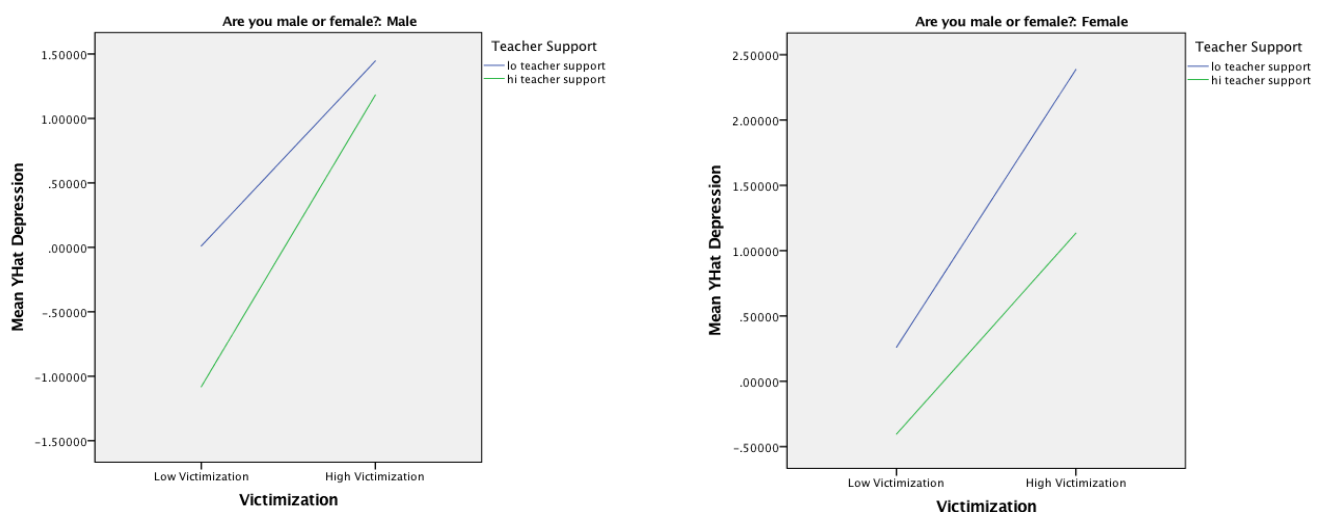
Table 5. Regression Analysis Predicting Depression from Sex, Victimization and Friend Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.002	.002				
Constant				.740**	.090	8.23
Grade			-.044	-.018	.016	-1.17
Step 2:	.131	.130**				
Constant				.131	.108	1.213
Grade			-.045	-.019	.015	-1.274
Sex			.098	.090**	.032	2.792
Victimization			.348	.396**	.040	9.926
Step 3:	.196	.065**				
Constant				.169	.177	.952
Grade			-.051	-.021	.014	-1.503
Sex			.133	.122	.102	1.201
Victimization			.300	.343**	.129	2.647
Friend Support			-.100	-.048	.154	-.311
Friend Support × Victimization			-.100	-.034	.111	-.303
Friend Support × Sex			-.208	-.065	.100	-.645
Sex × Victimization			-.007	-.004	.081	-.045
Friend Support × Victimization × Sex			.148	.032	.072	.452

*p<.05; **p<.01

Table 6. Regression Analysis Predicting Depression from Sex, Victimization and Classmate Support

	R^2	ΔR^2	β	b	$SE(b)$	t
Step 1:	.002	.002				
Constant				.750**	.090	8.302
Grade			-.047	-.020	.016	-1.256
Step 2:	.135	.133**				
Constant				.133	.108	1.235
Grade			-.050	-.021	.015	-1.432
Sex			.102	.094**	.032	2.908
Victimization			.352	.402**	.040	10.020
Step 3:	.220	.085**				
Constant				.393*	.184	2.139
Grade			-.069	-.029*	.014	-2.041
Sex			.023	.021	.106	.196
Victimization			.199	.228	.137	1.666
Classmate Support			-.011	-.005	.155	-.034
Classmate Support × Victimization			-.221	-.076	.118	-.640
Classmate Support × Sex			-.384	-.115	.102	-1.128
Sex × Victimization			.109	.058	.087	.671
Classmate Support × Victimization × Sex			.313	.072	.079	.902

*p<.05; **p<.01

As demonstrated in Table 5 and 6, neither close friend support nor classmate support significantly influenced the link between victimization and depression.

  Anxiety. When predicting anxiety from grade, sex, victimization, classmate support, Classmate support × Victimization, Classmate support × Sex, Sex × Victimization, Classmate support × Sex × Victimization, grade accounted for 1% of variance in anxiety, *F-change (1,704)=4.55, p<.05.* The addition of sex and victimization in step two of the model was significant, *F-change* (2,702)=59.20, *p<.001* and accounted for an additional 14% of variance in anxiety. The addition of the interaction terms in step three of the model was also significant, *F-change (5,697)=6.47, p<.001,* accounting for an additional 4% of variance in anxiety.

Table 7. Regression Analysis Predicting Anxiety from Sex, Victimization and Classmate Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.006	.006*				
Constant				.893**	.090	9.938
Grade			-.080	-.033*	.016	-2.133
Step 2:	.150	.143**				
Constant				.189	.107	1.770
Grade			-.084	-.035*	.014	-2.408
Sex			.190	.174**	.032	5.450
Victimization			.332	.378**	.040	9.526
Step 3:	.188	.038**				
Constant				.675**	.187	.091
Grade			-.096	-.040**	.014	-2.787
Sex			-.131	-.120	.108	-1.112
Victimization			-.012	-.014	.139	-.102
Classmate Support			.366	.167	.158	1.059
Classmate Support × Victimization			-.673	-.229	.120	-1.902
Classmate Support × Sex			-.809	-.241*	.103	-2.326
Sex × Victimization			.482	.257**	.088	2.915
Classmate Support × Victimization × Sex			.987	.224**	.081	2.779

*p<.05; **p<.01

In the above regression analysis, the influence of victimization on reported depression is a function of two parts; Sex × Victimization, Classmate support × Victimization × Sex. The effect of victimization on anxiety depends on the sex of the child, $b=.257$, $t(697)=2.915$, $p<.01$. Similarly, the effect of classmate support on anxiety depends on sex, $b=-.241$, $t(697)=-2.326$, $p<.05$. Furthermore, the joint influence of victimization and classmate support depends on sex. $b=.224$, $t(697)=2.779$, $p<.01$. Figure 3 below illustrates these relationships.

As demonstrated in Figure 3, boys in both high and low victim groups who reported higher classmate support also reported lower anxiety when compared to boys who reported lower levels of classmate support. The positive influence of high classmate support was more evident among the high-victim group.

For girls in the low victim group, a higher level of classmate support was also associated with lower anxiety. However, for high-victim girls a higher level of classmate support was associated with *higher* anxiety. That is to say, girls in the high victim group reported less anxiety when they felt lower levels of classmate support.

Figure 3. Classmate Support and Victimization as Predictors of Anxiety for Male and Female 10-13-Year-Old Students.

Table 8. Regression Analysis Predicting Anxiety from Sex, Victimization, and Parent Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.006	.006*				
Constant				.890**	.090	9.936
Grade			-.080	-.033*	.016	-2.123
Step 2:	.148	.142**				
Constant				.187	.107	1.752
Grade			-.081	-.034*	.014	-2.326
Sex			.189	.173**	.032	5.444
Victimization			.328	372**	.039	9.451
Step 3:	.194	.046**				
Constant				.515**	.177	2.905
Grade			-.102	-.043**	.014	-2.995
Sex			.019	.017	.101	.171
Victimization			.142	.162	.128	1.263
Parent Support			-.628	-.288	.155	-1.864
Parent Support × Victimization			.485	.166	.115	1.436
Parent Support × Sex			.430	.125	.097	1.284
Sex × Victimization			.223	.118	.081	1.462
Parent Support × Victimization × Sex			-.492	-.108	.073	-1.472

*p<.05; **p<.01

Table 9. Regression Analysis Predicting Anxiety from Victimization, Sex and Teacher Support.

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.006	.006*				
Constant				.891**	.090	9.918
Grade			-.080	-.033*	.016	-2.128
Step 2:	.148	.142**				
Constant				.189*	.107	1.767
Grade			-.082	-.034**	.014	-2.367
Sex			.189	.173**	.032	5.437
Victimization			.329	.374*	.040	9.453
Step 3:	.167	.018**				
Constant				.401**	.180	2.223
Grade			-.095	-.040	.014	-2.741
Sex			.062	.057	.104	.551
Victimization			.197	.223	.131	1.700
Teacher Support			-.495	-.227	.152	-1.497
Teacher Support × Victimization			.390	.132	.114	1.160
Teacher Support × Sex			.204	.062	.100	.617
Sex × Victimization			.188	.100	.083	1.201
Teacher Support × Victimization × Sex			-.189	-.043	.075	-.568

*p<.05; **p<.01

Table 10. Regression Analysis Predicting Anxiety from Sex, Victimization and Close Friend Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.006	.006*				
Constant				.886**	.090	9.891
Grade			-.078	-.032*	.016	-2.090
Step 2:	.148	.141**				
Constant				.184	.107	1.728
Grade			-.079	-.033*	.014	-2.289
Sex			.187	.171**	.032	5.381
Victimization			.329	.374**	.039	9.472
Step 3:	.176	.029**				
Constant				.353	.179	1.972
Grade			-.079	-.033*	.014	-2.306
Sex			.073	.067	.103	.651
Victimization			.192	.218	.131	1.671
Friend Support			-.391	-.187	.157	-1.188
Friend Support × Victimization			.256	.086	.113	.763
Friend Support × Sex			-.011	-.004	.102	-.035
Sex × Victimization			.189	.100	.082	1.214
Friend Support × Victimization × Sex			.029	.006	.073	.089

*p<.05; **p<.01

As demonstrated in Tables 8, 9 and 10, neither parent support, nor teacher support nor close friend support significantly influenced the link between victimization and anxiety.

Significant types of social support. To explore whether specific *types* of social support moderate the relation between victimization and depression and/or anxiety, eight multiple regression analyses were run; four to predict depression and four to predict anxiety. As with the analyses above, depression or anxiety served as the outcome variable and the predictors were entered in the model in three sequential blocks. In order to control for the effects of grade, this variable was entered in step one, sex and victimization (composite) were entered in step two, the type of support and four interaction terms (Type of support × Victimization; Type of support × Sex; Sex × Victimization; Type of support × Sex × Victimization) were entered in step three.

Anxiety. When predicting anxiety from grade, sex, victimization, emotional support, Emotional support × Victimization, Emotional support × Sex, Sex × Victimization, Emotional support × Sex × Victimization, grade accounted for less than 1% of variance in anxiety, *F-change (*1,708)=4.51, *p*>.05. The addition of sex and victimization in step two of the model was significant, *F-change* (2,706)=58.82, *p*<.001, and accounted for an additional 14% of variance in anxiety. The addition of the interaction terms in step three of the model was also significant, *F-change (*5,701)=10.01, *p*<.001, accounting for an additional 6% of variance in anxiety.

Table 11. Regression Analysis Predicting Anxiety from Sex, Victimization and Emotional Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.006	.006*				
Constant				.890**	.090	9.936
Grade			-.080	-.033*	.016	-2.123
Step 2:	.148	.142**				
Constant				.187	.107	1.752
Grade			-.081	-.034*	.014	-2.326
Sex			.189	.173**	.032	5.444
Victimization			.328	.372**	.039	9.451
Step 3:	.205	.057**				
Constant				.485**	.174	2.791
Grade			-.102	-.042**	.014	-3.019
Sex			.065	.059	.098	.601
Victimization			.152	.172	.125	1.377
Emotional Support			-.413	-.189**	.066	-2.842
Emotional Support × Victimization			.294	.100	.053	1.862
Emotional Support × Sex			.457	.117*	.050	2.343
Sex × Victimization			.184	.097	.078	1.247
Emotional Support × Victimization × Sex			-.524	-.072*	.028	-2.587

*p<.05; **p<.01

In the above regression analysis, emotional support has a significant influence on reported anxiety, $b=-.189$, $t(701)=-2.842$, $p<.01$, but this influence is dependent on the sex of the participant, $b=.117$, $t(701)=2.343$, $p<.05$.   In fact, the joint influence of victimization and emotional support depends on sex of participant, $b=-.072$, $t(701)=-2.587$, $p=.01$. Figure 4 below illustrates these relationships.

As illustrated in Figure 4 below, boys and low-victim girls who reported higher emotional support also reported lower anxiety. However, high-victim girls who reported higher emotional support reported *higher* anxiety. That is to say, in present study's sample, girls in the high victim group were better off with lower levels of emotional support whereas all other students were better off with higher levels of emotional support.

Figure 4. Interaction of Emotional Support, Victimization and Anxiety.
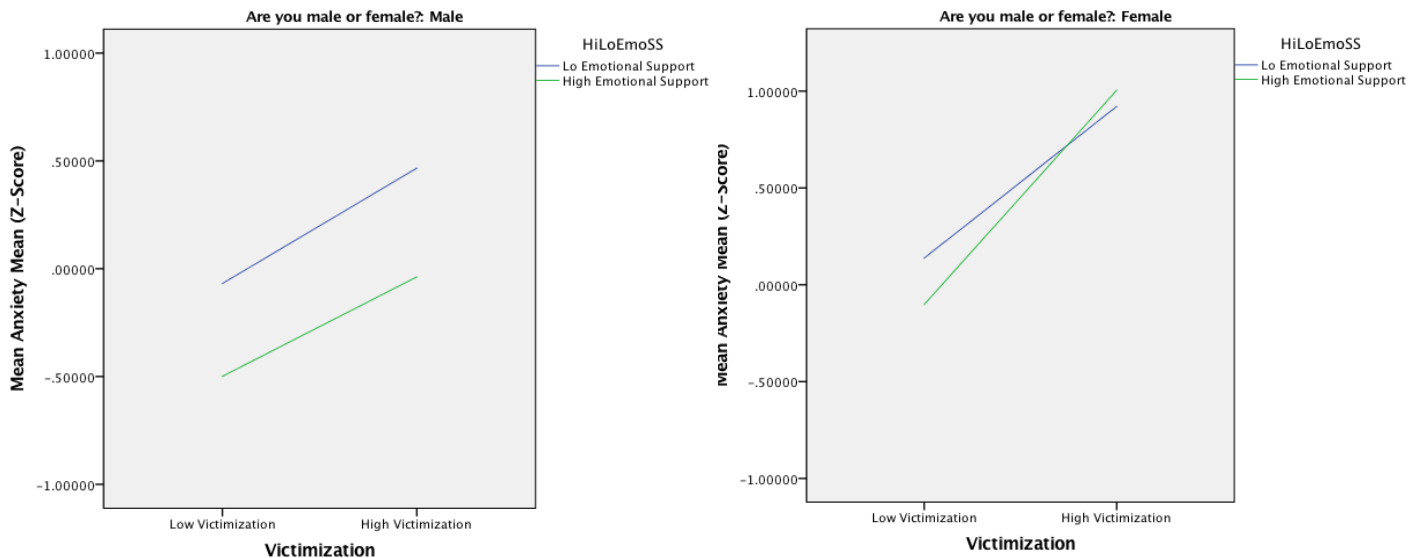
Table 12. Regression Analysis Predicting Anxiety from Sex, Victimization and Appraisal Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.006	.006*				
Constant				.890**	.090	9.936
Grade			-.080	-.033*	.016	-2.123
Step 2:	.148	.142**				
Constant				.187	.107	1.752
Grade			-.081	-.034*	.014	-2.326
Sex			.189	.173**	.032	5.444
Victimization			.328	.372**	.039	9.451
Step 3:	.186	.038**				
Constant				.428*	.177	2.415
Grade			-.098	-.041**	.014	-2.863
Sex			.072	.066	.100	.660
Victimization			.185	.210	.129	1.636
Appraisal Support			-.394	-.180**	.068	-2.644
Appraisal Support × Victimization			.335	.114*	.055	2.062
Appraisal Support × Sex			.410	.115*	.049	2.340
Sex × Victimization			.176	.093	.079	1.167
Appraisal Support × Victimization × Sex			-.468	-.073*	.029	-2.545

*$p<.05$; **$p<.01$

When predicting anxiety from grade, sex, victimization, appraisal support, Appraisal support × Victimization, Appraisal support × Sex, Sex × Victimization, Sppraisal support × Sex

× Victimization, grade accounted for less than 1% of variance in anxiety, *F-change* (1,708)=4.51, *p*<.05. The addition of sex and victimization in step two of the model was significant, *F-change* (2,706)=58.82, *p*<.001, and accounted for an additional 14% of variance in reported anxiety. The addition of the interaction terms in step three of the model was also significant, *F-change* (5,701)=6.58, *p*<.001, accounting for an additional 4% of variance in anxiety.

In the above regression analysis, the effect of appraisal support on reported anxiety depended on the sex of the participant, *b*=.115, *t*(701)=2.340, *p*<.05, as well as level of victimization, *b*=.114, *t*(701)=2.062, *p*<.05. In fact, the joint influence of victimization and appraisal support depends on sex, *b*=-.073, *t*(701)=-2.545, *p*<.05. This relationship is explored further in Figure 5, below.

As was the case with emotional support, all boys and low-victim girls who reported higher appraisal support also reported lower anxiety. However, high-victim girls who reported higher appraisal support reported *higher* anxiety. That is to say, in the present sample, girls in the high-victim group were better off in terms of reported anxiety with lower levels of appraisal support, whereas all other students were better off with higher levels of appraisal support.

Figure 5. Interaction of Appraisal Support, Victimization and Anxiety.
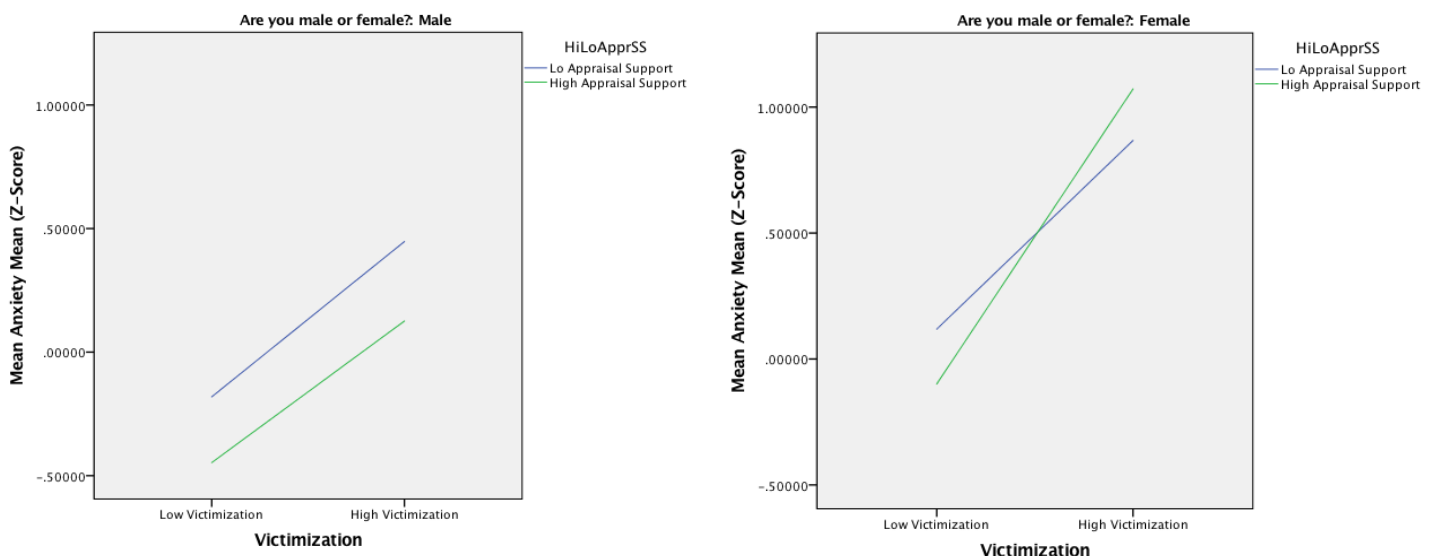
When predicting anxiety from grade, sex, victimization, informational support, Informational support $\times$ Victimization, Informational support $\times$ Sex, Sex $\times$ Victimization, Informational support $\times$ Sex $\times$ Victimization, grade accounted for less than 1% of variance in anxiety, *F-change (*1,708)=4.51, *p*<.05. The addition of sex and victimization in step two of the model was significant, *F-change* (2,706)=58.82, *p*<.001 and accounted for an additional 14% of variance in anxiety. The addition of the interaction terms in step three of the model was also significant, *F-change (*5,701)=5.85, *p*<.001, accounting for an additional 3% of variance in anxiety.

In the regression analysis outlined in Table 13 below, informational support had a significant influence on anxiety, *b*=-.194, *t*(701)=-2.921, *p*<.01. The influence of victimization on anxiety is a function of two parts; Informational support $\times$ Victimization, Informational support $\times$ Victimization $\times$ Sex. Victimization and informational support interacted to influence anxiety, *b*=.123, *t*(701)=2.343, *p*<.05, and this joint influence depended on sex, *b*=-.061, *t*(701)=-2.164, *p*<.05. Figure 6 below illustrates this relationship. Low-victim boys and girls who reported high informational support reported lower anxiety than their peers who reported low informational support. However, the influence was reversed for high-victim girls and boys. When high-victim students reported high informational support, they also reported higher anxiety.

Table 13. Regression Analysis Predicting Anxiety from Sex, Victimization and Informational Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:						
	.006	.006*				
Constant				.890**	.090	9.936
Grade			-.080	-.033*	.016	-2.123
Step 2:	.148	.142**				
Constant				.187	.107	1.752
Grade			-.081	-.034*	.014	-2.326
Sex			.189	.173**	.032	5.444
Victimization			.328	.372**	.039	9.451
Step 3:	.182	.034**				
Constant				.433*	.175	2.474
Grade			-.102	-.041**	.014	-2.849
Sex			.065	.061	.100	.612
Victimization			.152	.207	.126	1.648
Informational Support			-.413	-.194**	.066	-2.921
Informational Support × Victimization			.294	.123*	.052	2.343
Informational Support × Sex			.457	.089	.050	1.788
Sex × Victimization			.184	.094	.079	1.193
Informational Support × Victimization × Sex			-.524	-.061**	.028	-2.164

*$p<.05$; **$p<.01$

Figure 6. Interaction of Informational Support, Victimization and Anxiety.
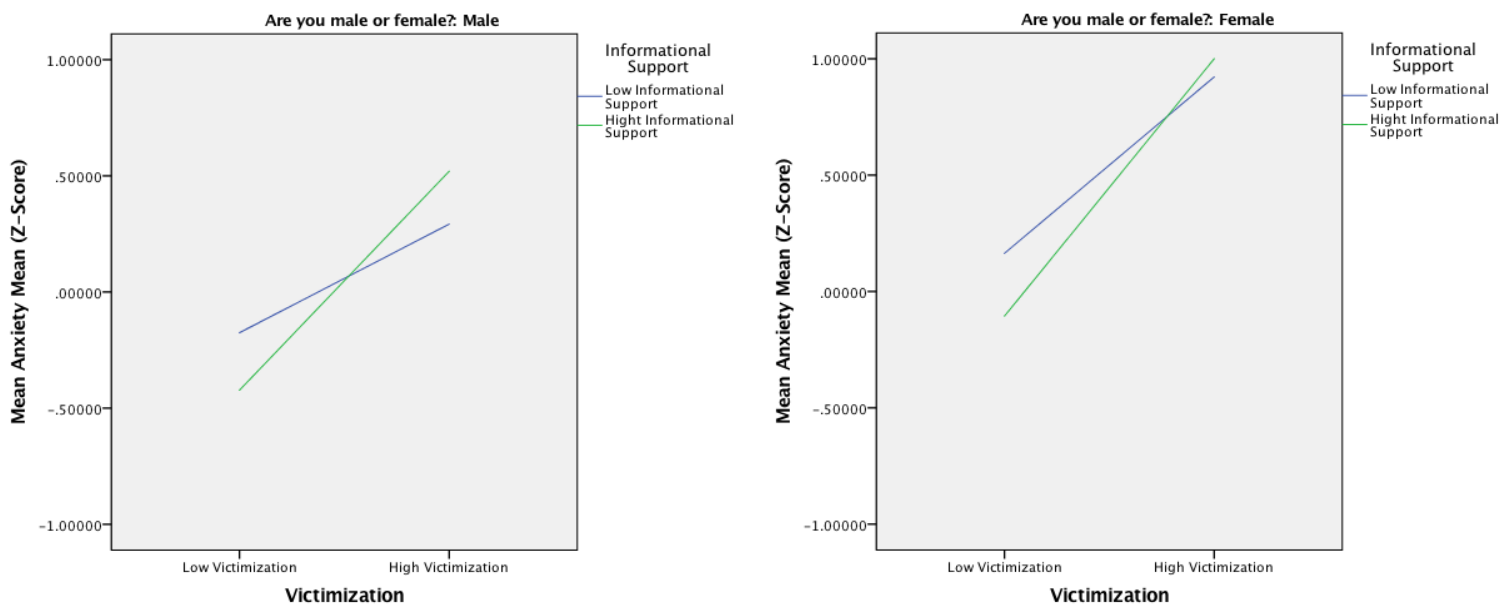
When predicting anxiety from grade, sex, victimization, instrumental support, Instrumental support × Victimization, Instrumental support × Sex, Sex × Victimization, Instrumental support × Sex × Victimization, grade accounted for less than 1% of variance in anxiety, *F-change(*1,708)=4.51, *p*<.05. The addition of sex and victimization in step two of the model was significant, *F-change*(2,706)=58.82, *p*<.001, and accounted for an additional 14% of variance in anxiety. The addition of the interaction terms in step three of the model was also significant, *F-change(*5,701)=7.91, *p*<.001, accounting for an additional 5% of variance in anxiety.

Table 14. Regression Analysis Predicting Anxiety from Sex, Victimization and Instrumental Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.006	.006*				
Constant				.890**	.090	9.936
Grade			-.080	-.033*	.016	-2.123
Step 2:	.148	.142**				
Constant				.187	.107	1.752
Grade			-.081	-.034*	.014	-2.326
Sex			.189	.173**	.032	5.444
Victimization			.328	.372**	.039	9.451
Step 3:	.205	.057**				
Constant				.455**	.174	2.619
Grade			-.097	-.040**	.014	-2.851
Sex			.054	.049	.099	.499
Victimization			.169	.191	.125	1.532
Instrumental Support			-.465	-.215**	.070	-3.079
Instrumental Support × Victimization			.364	.124*	.056	2.203
Instrumental Support × Sex			.299	.082	.049	1.667
Sex × Victimization			.193	.102	.078	1.304
Instrumental Support × Victimization × Sex			-.358	-.054	.029	-1.885

*$p<.05$; **$p<.01$

In the above regression analysis, instrumental support was found to have a significant influence on anxiety, $b=-.215$, $t(701)=-3.079$, $p<.01$. In fact, victimization interacted with

instrumental support to influence anxiety, b=.124, $t(701)$=2.203, p<.05. These relationships were not affected by the sex of the participant. Low-victim students reported lower anxiety when they perceived high levels of instrumental support. For high-victim students, however, there was no difference in reported anxiety based on levels of instrumental support.

Figure 7. Interaction of Instrumental Support, Victimization and Anxiety
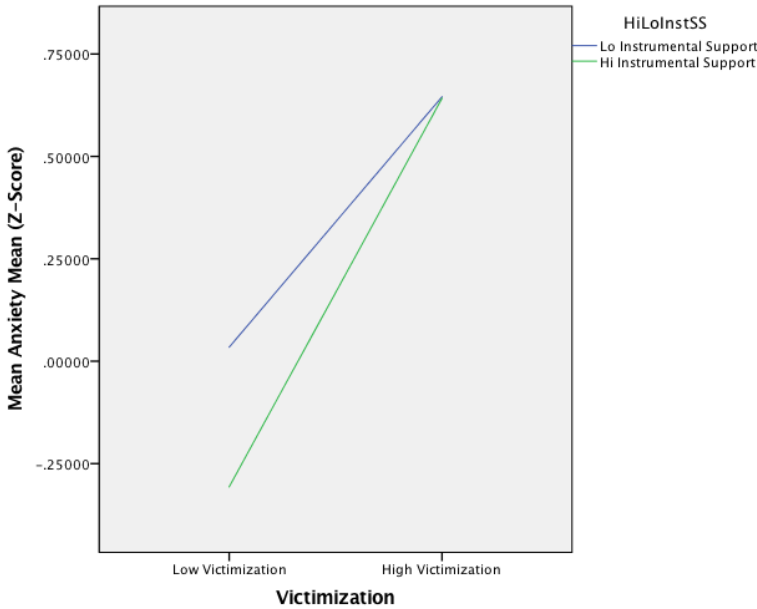
Depression. For all four types of support, when predicting depression from grade, sex, victimization, type of support, Type support × Victimization, Type support × Sex, Sex × Victimization, Type support × Sex × Victimization, grade did not significantly influence variance in depression, *F-change*(1,709)=1.43, p>.05. The addition of sex and victimization in step two of the models was significant, *F-change*(2,707)=52.74, p<.001, and accounted for 13% of variance in depression.

For all four types of support, the addition of the interaction terms in step three of the model was significant. The interaction terms associated with emotional support accounted for 18% of variance in depression, *F-change*(5,702)=37.62, p<.001; those associated with

informational support accounted for 12% of variance in depression, *F-change* (5,702)=22.91, *p*<.001; those associated with appraisal support accounted for 13% of variance in depression, *F-change*(5,702)=23.79, *p*<.001, and those associated with instrumental support accounted for 14% of variance in depression, *F-change*(5,702)=27.35, *p*<.001.

Table 15. Regression Analysis Predicting Depression from Sex, Victimization and Emotional
Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.002	.002*				
Constant				.743**	.090	8.264
Grade			-.045	-.019	.016	-1.196
Step 2:	.132	.130**				
Constant				.133	.108	1.231
Grade			-.046	-.019	.015	-1.301
Sex			.099	.091**	.032	2.837
Victimization			.347	.395**	.040	9.905
Step 3:	.315	.184**				
Constant				.425**	.161	2.631
Grade			-.087	-.036**	.013	-2.766
Sex			.111	.102	.092	1.115
Victimization			.191	.217	.117	1.826
Emotional Support			-.388	-.178**	.062	-2.873
Emotional Support × Victimization			.075	.025	.050	.512
Emotional Support × Sex			.639	.164**	.046	3.530
Sex × Victimization			.001	.001	.073	.018
Emotional Support × Victimization × Sex			-.756	-.104**	.026	-4.022

*p<.05; **p<.01

Table 16. Regression Analysis Predicting Depression from Sex, Victimization and Informational Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.002	.002				
Constant				.743**	.090	8.264
Grade			-.045	-.019	.016	-1.196
Step 2:	.132	.130**				
Constant				.133	.108	1.231
Grade			-.046	-.019	.015	-1.301
Sex			.099	.091**	.032	2.837
Victimization			.347	.395**	.040	9.905
Step 3:	.253	.122**				
Constant				.312	.168	1.859
Grade			-.081	-.034*	.014	-2.470
Sex			.122	.112	.095	1.177
Victimization			.267	.304*	.120	2.528
Informational Support			-.502	-.231**	.063	-3.665
Informational Support × Victimization			.297	.101*	.050	2.017
Informational Support × Sex			.512	.139**	.048	2.919
Sex × Victimization			-.017	-.009	.076	-.119
Informational Support × Victimization × Sex			-.664	-.098**	.027	-3.644

*p<.05; **p<.01

Table 17. Regression Analysis Predicting Depression from Sex, Victimization and Appraisal Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.002	.002				
Constant				.743**	.090	8.264
Grade			-.045	-.019	.016	-1.196
Step 2:	.132	.130**				
Constant				.133	.108	1.231
Grade			-.046	-.019	.015	-1.301
Sex			.099	.091**	.032	2.837
Victimization			.347	.395**	.040	9.905
Step 3:	.257	.126**				
Constant				.348*	.170	2.051
Grade			-.084	-.035*	.014	-2.551
Sex			.108	.100	.096	1.039
Victimization			.239	.272*	.123	2.206
Appraisal Support			-.436	-.200**	.065	-3.063
Appraisal Support × Victimization			.231	.079	.053	1.490
Appraisal Support × Sex			.631	.177**	.047	3.774
Sex × Victimization			.016	.009	.076	.113
Appraisal Support × Victimization × Sex			-.739	-.115**	.027	-4.211

*$p<.05$; **$p<.01$

Table 18. Regression Analysis Predicting Depression from Sex, Victimization and Instrumental Support

	R^2	ΔR^2	β	b	SE(b)	t
Step 1:	.002	.002				
Constant				.743**	.090	8.264
Grade			-.045	-.019	.016	-1.196
Step 2:	.132	.130**				
Constant				.133	.108	1.231
Grade			-.046	-.019	.015	-1.301
Sex			.099	.091**	.032	2.837
Victimization			.347	.395**	.040	9.905
Step 3:	.273	.142**				
Constant				.326*	.165	1.972
Grade			-.075	-.031*	.013	-2.319
Sex			.106	.098	.094	1.035
Victimization			.252	.287*	.119	2.415
Instrumental Support			-.537	-.246**	.066	-3.735
Instrumental Support × Victimization			.285	.097	.054	1.815
Instrumental Support × Sex			.474	.130**	.047	2.789
Sex × Victimization			.000	.000	.075	.001
Instrumental Support × Victimization × Sex			-.589	-.090**	.027	-3.274

*p<.05; **p<.01

In all four analyses, the joint influence of victimization and the given type of support was dependent on sex. Boys and girls who reported high emotional support also reported lower depression than their peers who reported low emotional support. The difference in depression between high and low emotional support was more pronounced among high-victim girls when compared to their low-victim peers.

Figure 8. Interaction of Emotional Support, Victimization and Depression
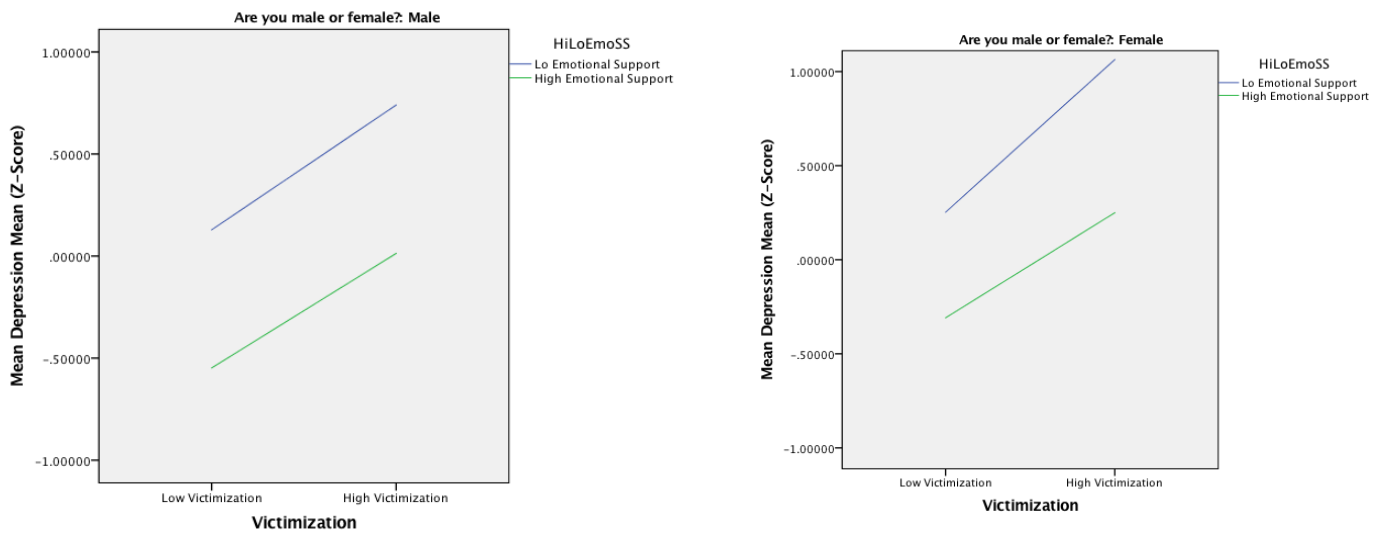
Boys and girls who reported high informational support, reported lower depression than their peers who reported low informational support. The difference in reported depression between high and low informational support was more pronounced among high-victim girls when compared to their low-victim peers. Conversely, the difference in reported depression between high and low informational support was more pronounced among low-victim boys when compared to their high-victim peers.

Figure 9. Interaction of Informational Support, Victimization and Depression
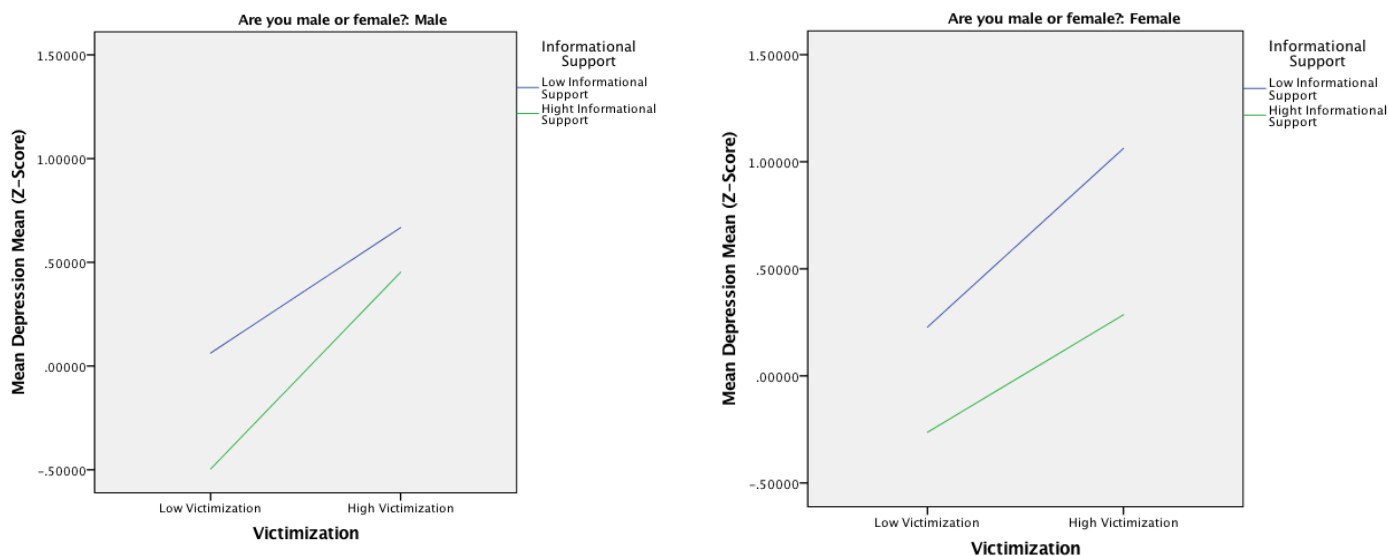
Boys and girls who reported high appraisal support, reported lower depression than their peers who reported low appraisal support. The difference in reported depression between students with high versus low appraisal support was more pronounced among low-victim boys when compared to their high-victim peers. Boys and girls who reported high instrumental support, reported lower depression than their peers who reported low instrumental support.

Figure 10. Interaction of Appraisal Support, Victimization and Depression
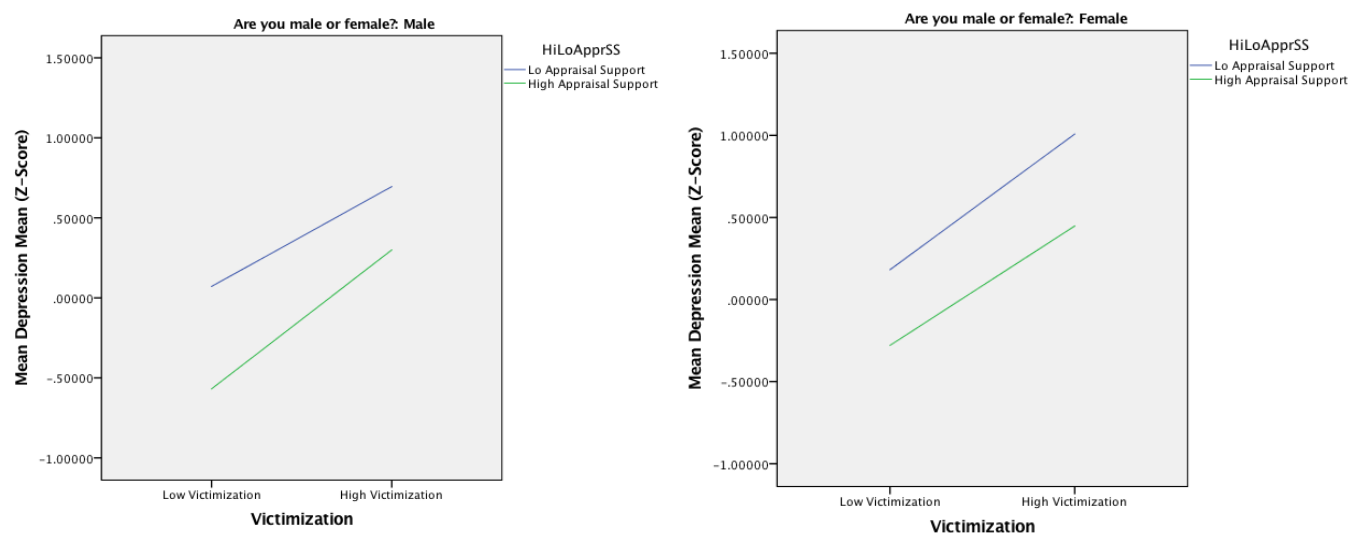
Figure 11. Interaction of Instrumental Support, Victimization and Depression
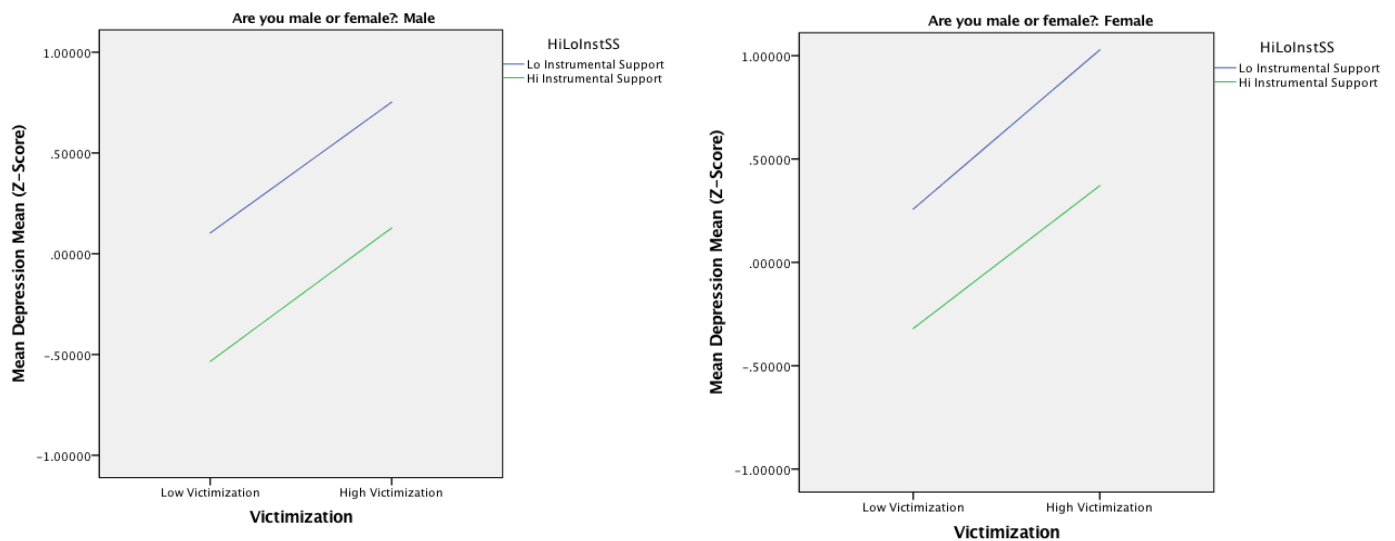
Significant source of support for each form of victimization. To explore whether and how multiple sources of support influence the relation between each form of victimization (physical, social, verbal, cyber) and depression or anxiety, the data was split based on sex (367 boys and 353 girls) and eight multiple regression analyses were conducted on each sub-sample; two for each form of victimization. For these analyses, either depression or anxiety served as the outcome variable and the predictors were entered in the model in three sequential blocks. In order to control for the effects of grade, this variable was entered in step one; the form of victimization (e.g., physical, social, verbal or cyber victimization) was entered in step two, the four sources of support, and the interaction terms (Source of support × Victimization) were entered in step three. Unlike the previous analyses which explored the influence of each source of support on its own, these analyses took into account the influence of all four sources of support simultaneously.

In all eight analyses predicting anxiety, grade did not have a significant influence on anxiety. The addition of a particular form of victimization in step two was significant, and

accounted for 5-9% of variance in anxiety among girls, and 1-9% of variance among boys. The addition of social support and the interaction terms in step three were also significant and accounted for 6-10% of variance in the analyses of anxiety among girls, and 7-12% of variance in the analyses of anxiety among boys.

In the eight analyses predicting depression, grade did not have a significant influence on depression. The addition of a particular form victimization in step two was significant and accounted for 2-11% of variance in depression among girls, and 2-15% of variance among boys. The addition of social support and the interaction terms in step three were also significant and accounted for 20-25% of variance in the analyses of depression among girls, and 16-24% of variance in the analyses of depression among boys.

In the six analyses exploring the influence of physical, verbal and social victimization on depression and anxiety among girls, there was a significant positive relationship between the form of victimization and depression and anxiety. Among girls who reported physical victimization, the source of support that was found to interact with victimization and significantly influence reported anxiety and depression was parent support ($b = -.553$, $t(334) = 2.994$, $p < .01$ for depression; $b = -.624$, $t(334) = -2.545$, $p < .05$ for anxiety). In both cases, the positive association between victimization and the outcome variables tended to be lower with higher parent support. Similarly, among girls who reported social victimization, the sources of support that were found to interact with victimization and significantly influence reported anxiety and depression were parent support, $b = -.846$, $t(334) = -.4.869$, $p < .01$, and classmate support, $b = .530$, $t(334) = 2.124$, $p < .05$, for depression, and parent support, $b = -.637$, $t(334) = -3.311$, $p < .01$, and classmate support, $b = .824$, $t(334) = 2.977$, $p < .01$, for anxiety. Again, for parent support the positive association between victimization and the outcome variables tended

to be lower with higher parent support.   However, for classmate support, the positive association between victimization and the outcome variable tended to be *higher* with higher classmate support. That is, parent support buffered the influence of physical and social victimization on depression and anxiety, whereas classmate support strengthened the negative influence of social victimization on depression and anxiety.   For verbal and cyber victimization among girls, none of the interaction terms for Source of support × Victimization was significant.

Table 19. Regression Analysis Predicting Depression from Four Sources of Support and Physical Victimization for Girls

	R^2	ΔR^2	β	b	$SE(b)$	t
Step 1:	.001	.001				
Constant				.223	.276	.809
Grade			-.024	-.022	.048	-.452
Step 2:	.108	.108**				
Constant				-1.657**	.392	-4.226
Grade			-.003	.003	.045	.062
Physical Victimization			.330	1.674**	.260	6.431
Step 3:	.316	.207**				
Constant				-.672	.398	-1.688
Grade			-.030	-.027	.041	-.647
Physical Victimization			.168	.852**	.284	2.994
Parent Support			.342	.341	.225	1.515
Teacher Support			-.011	-.012	.288	-.041
Friend Support			.427	.495	.537	.921
Classmate Support			-.539	-.560	.691	-.811
Par Support × Physical Victimization			-.615	-.553**	.204	-2.713
Teach Support × Physical Victimization			.018	.018	.266	.069
Friend Support × Physical Victimization			.306	.303	.682	.444
Classmate Support × Physical Victimization			-.520	-.536	.523	-1.025

*p<.05; **p<.01

Table 20. Regression Analysis Predicting Anxiety from Four Sources of Support and Physical Victimization for Girls

	R^2	ΔR^2	β	b	SE(b)	t
Step 1	.010	.010				
Constant				.737*	.294	2.509
Grade			-.102	-.096	.051	-1.897
Step 2	.064	.053**				
Constant				-.677	.429	-1.576
Grade			-.083	-.078	.050	-1.572
Physical Victimization.			.232	1.259**	.285	4.414
Step 3	.135	.072**				
Constant				.005	.478	.011
Grade			-.112	-.106*	.049	-2.146
Physical Victimization			.135	.734*	.342	2.149
Parent Support			.457	.486	.270	1.798
Teacher Support			-.270	-.308	.346	-.891
Friend Support			.675	.836	.645	1.296
Classmate Support			-1.163	-1.292	.830	-1.557
Parent Support × Physical Victimization			-.648	-.624*	.245	-2.545
Teacher Support × Physical Victimization			.272	.290	.320	.906
Friend Support × Physical Victimization			1.118	1.181	.819	1.441
Classmate Support × Physical Victimization			-.776	-.856	.629	-1.361

*p<.05; **p<.01

Table 21. Regression Analysis Predicting Depression from Four Sources of Support and Social Victimization for Girls

	R^2	ΔR^2	β	b	$SE(b)$	t
Step 1	.001	.001				
Constant				.223	.276	.809
Grade			-.024	-.022	.048	-.452
Step 2	.081	.080**				
Constant				-.700*	.315	-2.223
Grade			-.043	-.038	.046	-.831
Social Victimization			.284	.919**	.168	5.457
Step 3	.327	.246**				
Constant				-.357	.287	-1.242
Grade			-.053	-.047	.041	-1.156
Social Victimization			.195	.631**	.163	3.874
Parent Support			.536	.534**	.176	3.031
Teacher Support			.256	.274	.219	1.253
Friend Support			.052	.060	.219	.275
Classmate Support			-.717	-.745**	.247	-3.019
Parent Support × Social Victimization			-.846	-.712**	.146	-4.869
Teacher Support × Social Victimization			-.284	-.252	.187	-1.349
Classmate Support × Social Victimization			.530	.467*	.220	2.124
Friend Support × Social Victimization			-.108	-.099	.176	-.563

*p<.05; **p<.01

Table 22. Regression Analysis Predicting Anxiety from Four Sources of Support and Social Victimization for Girls

	R^2	ΔR^2	β	b	SE(b)	t
Step 1	.010	.010				
Constant				.737*	.294	2.509
Grade			-.102	-.096	.051	-1.897
Step 2	.073	.063**				
Constant				-.136	.338	-.401
Grade			-.119	-.112*	.049	-2.271
Social Victimization			.251	.868**	.181	4.806
Step 3	.173	.100**				
Constant				-.126	.340	-.369
Grade			-.129	-.122*	.048	-2.524
Social Victimization			.266	.921**	.193	4.774
Parent Support			.431	.459*	.209	2.198
Teacher Support			.159	.181	.259	.699
Friend Support			-.084	-.104	.259	-.401
Classmate Support			-.835	-.927**	.293	-3.169
Parent Support × Social Victimization			-.637	-.574**	.173	-3.311
Teacher Support × Social Victimization			-.208	-.197	.221	-.892
Classmate Support × Social Victimization			.824	.776**	.261	2.977
Friend Support × Social Victimization			.080	.079	.209	.378

*$p<.05$; **$p<.01$

In the six analyses exploring the influence of physical, verbal and social victimization on depression and anxiety, and in the analysis exploring the influence of cyber victimization on depression, among boys, there was a significant positive relationship between the given form of

victimization and depression and/or anxiety. Among boys who reported physical victimization, the sources of support that were found to interact with victimization and significantly influence reported anxiety were teacher support, $b = .648$, $t(349) = 2.267$, $p < .05$, and friend support, $b = .621$, $t(349) = 2.239$, $p < .05$. In both cases, the positive association between victimization and anxiety tended to be *higher* with higher teacher support and higher friend support. Similarly, among boys who reported social victimization and verbal victimization, the sources of support that were found to interact with victimization and significantly influence reported depression were teacher support, $b = .665$, $t(349) = 2.737$, $p < .01$, for social victimization, and $b = .437$, $t(349) = 2.219$, $p < .05$, for verbal victimization. Again, for teacher support, the positive association between verbal and social victimization and depression tended to be *higher* with higher teacher support. Interestingly, among boys who reported cyber victimization, the sources of support that were found to interact with victimization and significantly influence reported depression were teacher support, $b = 1.681$, $t(349) = 2.3135$ $p < .01$, and parent support, $b = -2.731$, $t(349) = -1.972$. In the case of cyber victimization, parent support buffered the influence of cyber victimization on depression, whereas teacher support strengthened the negative influence of cyber victimization on depression.

Table 23. Regression Analysis Predicting Anxiety from Four Sources of Support and Physical Victimization for Boys

	R^2	ΔR^2	β	b	SE(b)	t
Step 1	.004	.004				
Constant				.119	.252	.472
Grade			-.062	-.052	.044	-1.184
Step 2	.058	.054**				
Constant				-1.018**	.352	-2.896
Grade			-.040	-.033	.043	-.771
Physical Victimization			.234	.984**	.217	4.525
Step 3	.177	.119**				
Constant				-1.119**	.390	-2.874
Grade			-.108	-.090*	.042	-2.158
Physical Victimization			.338	1.425**	.292	4.878
Parent Support			-.182	-.164	.245	-.670
Teacher Support			-.577	-.491 ^{T}	.248	-1.977
Friend Support			-.592	-.561*	.270	-2.077
Classmate Support			-.482	-.418 ^{T}	.213	-1.960
Parent Support × Physical Victimization			-.044	-.037	.223	-.164
Teacher Support × Physical Victimization			.648	.512*	.226	2.267
Friend Support × Physical Victimization			.347	.268	.186	1.439
Classmate Support × Physical Victimization			.621	.546*	.244	2.239

*p<.05; **p<.01

Table 24. Regression Analysis Predicting Depression from Four Sources of Support and Verbal Victimization for Boys

	R^2	ΔR^2	β	b	$SE(b)$	t
Step 1	.004	.004				
Constant				.215	.275	.784
Grade			-.061	-.055	.048	-1.156
Step 2	.118	.114**				
Constant				-.752*	.295	-2.545
Grade			-.074	-.067	.045	-1.478
Verbal Victimization			.339	.884**	.130	6.808
Step 3	.284	.166**				
Constant				-.144	.292	-.491
Grade			-.131	-.119**	.042	-2.846
Verbal Victimization			.231	.604**	.146	4.137
Parent Support			.030	.030	.188	.158
Teacher Support			-.421	-.390*	.181	-2.153
Friend Support			-.161	-.166	.193	-.860
Classmate Support			-.048	-.045	.177	-.254
Parent Support × Verbal Victimization			-.300	-.228	.151	-1.512
Teacher Support × Verbal Victimization			.437	.315*	.142	2.219
Friend Support × Verbal Victimization			-.067	-.047	.131	-.357
Classmate Support × Verbal Victimization			.036	.027	.135	.197

*$p<.05$; **$p<.01$

Table 25. Regression Analysis Predicting Depression from Four Sources of Support and Social Victimization for Boys

	R^2	ΔR^2	β	b	SE(b)	t
Step 1	.004	.004				
Constant				.215	.275	.784
Grade			-.061	-.055	.048	-1.156
Step 2	.154	.150**				
Constant				-1.035**	.298	-3.469
Grade			-.085	-.077	.044	-1.735
Social Victimization			.388	1.244**	.156	7.959
Step 3	.317	.163**				
Constant				-.382	.317	-1.205
Grade			-.137	-.124**	.041	-3.038
Social Victimization			.271	.869**	.195	4.460
Parent Support			.091	.090	.210	.429
Teacher Support			-.636	-.589**	.215	-2.736
Friend Support			-.321	-.331	.189	-1.749
Classmate Support			.209	.198	.183	1.078
Parent Support × Social Victimization			-.367	-.293	.182	-1.616
Teacher Support × Social Victimization			.665	.518**	.189	2.737
Friend Support × Social Victimization			-.335	-.246	.147	-1.675
Classmate Support × Social Victimization			.196	.151	.138	1.095

*$p<.05$; **$p<.01$

Table 26. Regression Analysis Predicting Depression from Four Sources of Support and Cyber Victimization for Boys

	R^2	ΔR^2	β	b	SE(b)	t
Step 1	.004	.004				
Constant				.215	.275	.784
Grade			-.061	-.055	.048	-1.156
Step 2	.022	.019*				
Constant				-.732	.455	-1.611
Grade			-.067	-.061	.048	-1.285
Cyber Victimization			.136	.962*	.369	2.605
Step 3	.058	.235**				
Constant				-2.534*	1.154	-2.196
Grade			-.150	-.136**	.043	-3.175
Cyber Victimization			.452	3.188**	1.134	2.812
Parent Support			2.290	2.253	1.288	1.750
Teacher Support			-1.566	-1.450*	.627	-2.312
Friend Support			-1.976	-2.038	1.042	-1.956
Classmate Support			-.125	-.118	.575	-.206
Parent Support × Cyber Victimization			-2.731	-2.531 [T]	1.283	-1.972
Teacher Support × Cyber Victimization			1.681	1.431*	.619	2.313
Friend Support × Cyber Victimization			-.055	-.050	.566	-.088
Classmate Support × Cyber Victimization			2.019	1.920	1.035	1.854

*p<.05; **p<.01

Discussion

The purpose of the current study was to determine which sources of social support (parent, teacher, classmate, or close friend) moderate the link between peer victimization and both depression and anxiety. A second purpose was to explore the type of support (emotional, instrumental, informational, appraisal) that buffers the positive relationship between victimization and depression or anxiety. A third purpose of the study was to explore which sources of social support moderate the link between four forms of victimization (physical, verbal, social, cyber) and both depression and anxiety. A final objective of this study was to determine whether differences between boys and girls exist in these relationships. The following section summarizes and interprets the outcomes of these analyses.

Significant Sources and Types Support.

Consistent with the outcomes of some earlier studies, the current study found that social support influenced girls and boys differently. Further, it found that social support influenced the victimization (composite)-depression and victimization(composite)-anxiety links differently. These observations shed light on some of the inconsistencies found across earlier studies. The addition of social support and its interaction terms in the models accounted for up to 18% of variance in depression but only up to 6% of variance in anxiety. While in both cases this leaves a great portion of variance to be explained, the difference between the two is worthy of note.

Depression. The sets of analyses looking at the influence of both source and type of support on the victimization-depression link found that for boys and girls, various types and sources of support can have a positive influence by lessening the impact of victimization on depression. Specifically, each of the four types of social support, independent of the other three types, significantly influenced levels of depression. Each type of support was associated with

lower depression in both high-victim and low-victim 10-13-year-olds. Similarly, both teacher

support and parent support, independent of each other and the other sources of support,

significantly influenced the victimization-depression link among high and low victim girls and

boys, resulting in lower depression. Interestingly, the positive influence of source and type of

support was more pronounced among high-victim girls and low-victim boys. This suggests that

while social support influences depression in girls and boys differently, the difference lies in the

extent of its influence and not in the direction of influence.

These findings are consistent with the hypothesis of the present study. The positive

influence of parent support is consistent with the results of previous studies (e.g. Baldry, 2004;

Papafratzeskakou, Kim, Longo, & Riser, 2011) as is the influence of parent support on high-

victim girls (e.g. Davidson and Demaray, 2007; Yeung & Leadbeater, 2013). To date, only

Davidson and Demaray (2007) have explored the influence of teacher support on the

victimization and internalizing distress link among early adolescents. Davidson and Demaray

observed the moderating effect of teacher support among victimized boys, but not girls. While

Davidson and Demaray considered a composite for internalizing distress which included both

depression and anxiety, the current study looked at depression and anxiety separately. While the

present study found a moderating effect of teacher support in the victimization-depression link

for boys and girls, a moderating effect of teacher support was not observed in the victimization-

anxiety link for either girls or boys. The differentiating effect of teacher support on depression

and anxiety among pre-adolescent victims may be a reason why the results across the two studies

differed. In fact, it may explain some of the inconsistent findings across previous studies which

used composite scores for emotional outcomes including combinations of depression, anxiety

and, in some cases, other emotional outcomes. For example, as mentioned in the literature

review above, a similar inconsistency was observed in the Desjardins and Leadbeater (2011) and Yeung and Leadbeater (2010) studies in relation to parent support. One of these studies looked at depression only, while the other looked at a composite of depression and anxiety.

The outcomes of the present study are also consistent with studies looking at social support more generally. Such studies have shown that social support is beneficial for the mental wellbeing of boys and girls with both high and low stress levels (e.g. Thoits, 2011). The availability of social support can be especially significant in certain stressful situations (e.g. Thoits, 1995, 2011), as was observed in the present study with the influence of parent support and teacher support on girls who are targets of high peer victimization.

Anxiety. The sets of analyses exploring the influence of both source and type of support on the victimization-anxiety link indicated that while certain sources and types of support had a positive influence on boys, they only had a positive influence on low-victim girls. More specifically, emotional support, appraisal support, and classmate support were found to positively influence anxiety among both high- and low-victim boys and among low-victim girls. However, high-victim girls who reported high appraisal support, high emotional support or high classmate support, reported higher anxiety. Interestingly, the sex differences disappeared when it came to informational and instrumental support, both of which were found to be beneficial for low-victim students. High-victim students reported higher anxiety when they reported high informational support.

The outcomes observed in the influence of classmate support on boys and girls is consistent with previous studies (e.g. Davidson & Demaray, 2007; Yeung & Leadbeater, 2013) and the hypotheses of the present study. Specifically, it was found that high classmate support had a positive influence on high- and low-victim boys and low-victim girls; however, it had a

negative influence on high-victim girls and was associated with higher anxiety. It is interesting to observe that while emotional support, appraisal support and informational support buffered the influence of high- and low-victimization on depression for girls, they increased the influence of high victimization on anxiety. This suggests that the trajectories to depression and anxiety for girls who are targets of peer victimization may be distinct from one another. Also interesting was the finding that instrumental and informational support did not buffer the impact of high victimization on anxiety for either girls or boys, while emotional and appraisal support did buffer the influence of high victimization on anxiety for boys. That is, for high-victim boys, receiving emotional and appraisal support was associated with lower anxiety, while informational and instrumental support did not have such a positive influence on anxiety.

As this is the first study to explore the influence that various *types* of support have on the victimization-anxiety and victimization-depression links, further studies are needed to cross validate these findings. To build on these outcomes, it would be interesting to explore the influence of all four types of support simultaneously and the influence of various types of support from different sources. This would be especially interesting as it may more accurately reflect the reality of early-adolescent students.

The present study was the second study of early adolescence to distinguish between support received from classmates and friends instead of lumping them together as "peers". As was the case with the Davidson and Demaray (2007) study, the present study found the influence of these two groups to be distinct. Specifically, whereas classmate support was found to influence the victimization-anxiety link, close friend support did not have a significant influence on this relationship. One reason for this may be that the way classmates respond to a situation dictates how that situation is viewed in the given social environment of the school or classroom

whereas the way close friends respond does not necessarily extend to the greater social context, only the friend group. This comment is based on the results observed in previous research showing that the negative effects of victimization are less severe when victimization is viewed as normative in a given social context (e.g. Bellmore, Witkow, Graham, & Juvonen, 2004; Graham & Juvonen, 2002) and an assumption that the response of classmates will influence whether a situation is viewed as normative or not.

Social Support and Different Forms of Victimization

The set of analyses carried out to explore the influence of social support on various forms of victimization and depression and anxiety took into account the influence of all four sources of support simultaneously. That is to say, these analyses considered the influence of each source of support *after the effects of all other sources have been taken into account*. Results of these analyses indicated that for girls, parent support positively influenced the link between both physical and social victimization and both depression and anxiety. This is partly consistent with earlier research which found mother support to positively influence the physical victimization-emotional wellbeing link (Yeung & Leadbeater, 2011).

The current set of analyses found that among girls, classmate support *increased* the influence of social victimization on both depression and anxiety. It is interesting to note that such an influence was not observed among girls for any of the other three forms of victimization. It is possible that the negative influence of classmate support on socially victimized girls is related to the higher value girls place on social goals, their endorsement of intimacy and nurturance goals, their adoption of relationship-maintaining goals, goals to resolve peer problems and their concern about peer evaluation, all of which is greater than that of boys (Rose & Rudolph, 2006). When they believe classmate support exists, such concerns may be heightened

as it suggests that their peers are aware of rumors or gossip which is being spread about them and which may pose a threat to their social relationships.

Similarly, for boys, teacher support *strengthened* the physical victimization-anxiety, verbal victimization-depression and cyber victimization-depression links. Further, friend support *strengthened* the physical victimization-anxiety link. It is interesting to note that, after the effects of all other sources have been taken into account, the sources of support that affected and increased the negative influence of victimization on anxiety or depression among boys were the sources of support that are available to the boys at school. One possible explanation for this may be related to the way boys perceive themselves when they are being verbally, physically and cyber victimized, and believe that individuals in their school will support them. In such a situation, the boys are being bullied and it is likely that they believe their teacher and friends are aware of this (since they believe teacher and friend support exists). In such a context, the victimization is not "normal", and although their teachers and close friend(s) support them, they are different from the rest of their peers by virtue of being targets of victimization. As stated above, the negative influence of victimization on wellbeing is attenuated when victimization is normative in a given context. It is possible then, that the clearer it is that victimization is not normative, the more likely that it negatively affects wellbeing. In the case of boys and perceived teacher and close friend support, such support makes it clear that victimization is not normative.

It should be noted that while Yeung and Leadbeater (2010) found high and low levels of teacher support to buffer the negative influence of relational victimization on emotional wellbeing, this influence was observed after two years, whereas the present study observed relationships at one-time point only. It is possible, then, that over time teacher support can act as a buffer in the relationship between social victimization and wellbeing. As Yeung and

Leadbeater point out, the observed effect over time may be due to the fact that over time the victims become more apt at drawing on available support.

Strengths and Limitations

Using carefully chosen, psychometrically valid measures, the present study found that parent support, teacher support and each of the four types of social support (emotional informational, appraisal and instrumental) when considered independently of other types or sources of support, positively influenced the victimization-depression and victimization-anxiety links among 10-13-year-old boys and girls. The influence of a particular source or type of support was in some cases especially strong for a given group (e.g., high-victim girls). However, regardless, parent support, teacher support, emotional support, appraisal support, instrumental support, and informational support resulted in lower depression among 10-13-year-olds. Further, when the effects of all four sources of support were considered simultaneously on each of the four forms of victimization, in some cases parent support was found to buffer the negative effects of victimization and teacher and friend support were found to *increase* the negative influence of victimization.

These outcomes must be interpreted with a consideration of certain limitations with the present study. The schools that participated in the present study were not recruited randomly but rather chose to participate in the study because of an interest among the administration in the types of questions being addressed by the study. Such a school may differ from other schools in which such an awareness or desire does not exist.

Furthermore, in the first two sets of analyses, the present study explored the influence of each source of social support and each type of social support in isolation of other sources and types of support. While the availability of support (source and type) for any given student will

be different, consideration of only one type or only one source of support at a time does not provide an understanding of what happens when multiple sources or multiple types of support are available. Future studies can explore the influence of the four sources and four types of support (or combinations thereof) simultaneously.

Another limitation of the present study is that data were collected at one point in time only. The data is limited in that it does not show how the influence of social support can change over time, as was demonstrated by Yeung and Leadbeater (2013), nor does it take into account the frequency and duration of victimization or the stability of depression and anxiety. In other words, the present study provides a snapshot but does not take into account the influence of time on any of the variables considered. The outcomes of the present study must therefore be considered with this understanding.

A final limitation of the present study is that, for social support, composite scores were used instead of dummy codes. This means that students with qualitatively different experiences could have generated the same total score or mean score which was then used in the analyses. Future studies should consider using principal component analysis to generate dummy codes for social support.

Despite these limitations, the present study added to the small number of studies that have explored the role of social support in lessening the impact of victimization on emotional problems among early adolescents (10-13-year-olds), a group distinct from late adolescents. By using a strong measure of social support, the present study's results were consistent with, and extended the findings of other studies that found differentiating effects of various sources of social support (e.g. Davidson & Demaray, 2007; Yeung & Leadbeater, 2013). Also, by exploring the influence of social support on anxiety and depression separately, the present study

was able to extend previous research by showing that, although depression and anxiety are correlated (Barbee, 1998), they are distinct emotional problems and that various pathways can lead to experiencing either one of them. Further, the present study extended the types of social support that have been considered in studies of social support and wellbeing among victimized students. Finally, by looking at peers and friends as separate groups, the present study was able to reinforce the distinction between these two groups.

Implications and Conclusion

The present study provides some clarification as to the sources and types of support that positively influence the victimization-depression and victimization-anxiety link experienced by targets of peer victimization between the ages of 10 and 13 years. This data is helpful for parents, teachers, school administrators, family and friends of students who are victimized at school as it sheds some light on what steps these individuals can take to support a loved one who is being victimized. In particular, schools can provide spaces for parents, teachers and students to learn about the distinction between the various types of support and those which are particularly effective for the wellbeing of targets of peer victimization.

The varying influences of classmate support observed in the present study (e.g. higher depression and anxiety among socially victimized girls, but not among verbally, physically or cyber victimized girls) points at the complex nature of peer relationships and their impact on middle school students. Considering that students in this age group are in a period of transition from childhood to adolescence, and are experiencing physical, intellectual and emotional changes, they have a higher awareness than they did as children which may foster in them many profound questions about themselves, their talents and abilities, about society and social relationships. With this in mind, it may be appropriate to create spaces where they can think

critically about their social environments and how these environments positively and negatively influence them, to explore the kinds of environments they want to create and to take steps towards creating those environments. In this way, their ideas will not remain in the realm of thought and words and they will be able to see their own capacity and responsibility in contributing towards building positive environments.

Results from the present study reinforce what has been demonstrated by previous studies, which is the many variables that must be considered in studies exploring the buffering influence of social support, and the limitation faced when distinct variables are lumped together and considering as one variable in such studies. The present study suggests that, in addition to the form of victimization, source of social support, type of social support, and sex of the victim, a distinction should be made between various emotional outcomes considered in a study (e.g., depression or anxiety). Further, a comparison of results between the present study and previous studies suggests that time may also be a factor that has an influence on these relationships. The outcomes of the present study continue to underscore the importance of clearly delineating the variables considered in a given study and using psychometrically valid measures.

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Appendix A: 2016 School Climate Survey

Survey of School Experiences

Instructions

All responses on this survey are confidential (private)— do not put your name on it.

Make sure to read every question. <u>**This is not a test and there are no right or wrong answers,**</u> **but it is important to answer honestly. If you are not comfortable answering a question or you don't know what it means, you can ask for help or leave it blank.**

Please do not look at other students' answers.

If there is anything you need help with or you have any questions, please raise your hand and we will come over to help you.

It is important to colour the circles completely, like this: ●

Please DO NOT use ✓, Please DO NOT use X.

Tell us about yourself…

1. What is your ID number? (This number is written on the top of your consent form.)

   _____

2. What is the name of your school? _____

3. What grade are you in? (Choose one)   O 4   O 6
                                           O 5   O 7

4. Are you a boy or a girl? (Choose one)   O Boy   O Girl

5. How long have you lived in Canada? (Choose one) O less than 2 years
                                                    O 2-4 years
                                                    O more than 4 years

6. Is English the main language spoken in your home?   O Yes   O No

7. How old are you (in years)?   O 8   O 10   O 12
                                   O 9   O 11   O 13 or older

8. Although we all live in Canada, people sometimes identify themselves by the racial, ethnic, or cultural group to which their parents, grandparents, or ancestors belong. How do you identify your racial or ethnic background? (Please choose one.)	YES
A) Aboriginal/ Native People (North American Indian, Metis, Inuit, etc.)	O
B) African / Caribbean (Black)	O
C) Asian (Chinese, Korean, Japanese, Taiwanese, etc)	O
D) Caucasian (White, European)	O
E) Latin American (Mexican, South American)	O
F) Middle Eastern (Arabic, Iranian, Kuwaiti, Persian, Israeli, etc)	O
G) South Asian (Indian, Indonesian, Pakistani, Filipino, etc)	O
H) Mixed (more than one of the above)	O

I) Other (tell us) : _____	O
J) I don't know	O

How do you feel about your school?

INSTRUCTIONS: Read each statement and choose the best answer for YOU. For the questions below, please select one of the following answers:

NO: means the sentence is "not at all true" or "almost never true" about you.

no: means that the sentence is "hardly ever" true about you

yes: means that the sentence is "often" true about you

YES: means that the sentence is "almost always true" or "always true" about you.

	NO	*no*	*yes*	**YES**
9. Most mornings I look forward to going to school.	①	②	③	④
10. I feel safe at my school.	①	②	③	④
11. My school is a nice place to be.	①	②	③	④
12. I like to take part in class discussions and activities.	①	②	③	④
13. I feel sure about how to do my work at school.	①	②	③	④
14. Doing well at school is important to me.	①	②	③	④
15. Kids at my school have a good chance to grow up and be successful.	①	②	③	④
16. I like my classes this year.	①	②	③	④

Bullying at your school....

The next few questions ask about bullying at your school. There are lots of different ways to bully someone. A bully might tease or make fun of other students, spread rumours about them, punch or hit them, or use the internet or texting to do this. Bullying is not an accident – a bully <u>wants</u> to hurt the other person, and does so <u>repeatedly and unfairly</u> (bullies have some advantage over the person they hurt). Sometimes a group of students will bully another student.

Think about <u>this school year</u> when you answer the following questions about bullying.

How often have you…	Never	Once or a few times	Every month	Every week	Several times a week
17. been bullied?	①	②	③	④	⑤
18. taken part in bullying others?	①	②	③	④	⑤
19. seen other students being bullied?	①	②	③	④	⑤

How often have you been…	Never	Once or a few times	Every month	Every week	Several times a week
20. <u>physically</u> bullied, when someone: - hit, kicked, punched, pushed you. - physically hurt you. - damaged or stole your property.	①	②	③	④	⑤
21. <u>verbally</u> bullied, when someone: - said mean things to you. - teased you or called you names. - threatened you or tried to hurt your feelings.	①	②	③	④	⑤
22. <u>socially</u> bullied, when someone: - said bad things behind your back. - gossiped or spread rumours about you. - got other students not to like you. - ignored you or refused to play with you.	①	②	③	④	⑤
23. <u>cyber</u>-bullied, when someone: - used the computer, websites, emails, text messages or pictures	①	②	③	④	⑤

online to threaten you, hurt you, make you look bad, or spread rumours about you.

How often have you seen *other students* being…	Never	Once or a few times	Every month	Every week	Several times a week
24. physically bullied?	①	②	③	④	⑤
25. verbally bullied?	①	②	③	④	⑤
26. socially bullied?	①	②	③	④	⑤
27. cyber bullied?	①	②	③	④	⑤

How often have *you* taken part in…	Never	Once or a few times	Every month	Every week	Several times a week
28. physically bullying others?	①	②	③	④	⑤
29. verbally bullying others?	①	②	③	④	⑤
30. socially bullying others?	①	②	③	④	⑤
31. cyber bullying others?	①	②	③	④	⑤

What's it like at your school?

For the next set of statements, choose the answer that you think is best.

    NO: means the sentence is "not at all true" or "almost never true" about you.
    no: means that the sentence is "hardly ever" true about you
    yes: means that the sentence is "often" true about you
    YES: means that the sentence is "almost always true" or "always true" about you.

What's it like at your school?	**NO**	*no*	*yes*	**YES**
32. Teachers go out of their way to help students.	①	②	③	④
33. If students want to talk about something teachers will find time to do it.	①	②	③	④
34. Teachers help students to organize their work.	①	②	③	④
35. Students really enjoy their classes.	①	②	③	④
36. Teachers help students catch up when they return from an absence.	①	②	③	④
37. Teachers take a personal interest in students (i.e., care about you personally).	①	②	③	④
38. If some students are misbehaving in class the teacher will do something about it.	①	②	③	④
39. When teachers make a rule, they mean it.	①	②	③	④
40. Students are given clear instructions about how to do their work in classes.	①	②	③	④
41. Students understand what will happen to them if they break a rule.	①	②	③	④
42. Teachers make a point of sticking to the rules in classes.	①	②	③	④
43. Students work hard for good grades in classes.	①	②	③	④
44. Students try hard to get the best grades they can.	①	②	③	④

45. Grades are very important to students. ① ② ③ ④

46. Students work hard to complete their assignments. ① ② ③ ④

47. Students put a lot of energy into what they do here. ① ② ③ ④

48. Students in this school have trouble getting along with each other. ① ② ③ ④

49. Students in this school are mean to each other. ① ② ③ ④

50. In classes, students find it hard to get along with each other. ① ② ③ ④

51. There are students in this school who pick on other students. ① ② ③ ④

52. Students in this school feel students are too mean to them. ① ② ③ ④

53. Students get to know each other well in classes. ① ② ③ ④

54. Students in this school are very interested in getting to know other students. ① ② ③ ④

55. Students enjoy doing things with each other in school activities. ① ② ③ ④

56. Students in this school get to know each other really well. ① ② ③ ④

57. Students enjoy working together on projects in classes. ① ② ③ ④

58. The rules in this school are too strict. ① ② ③ ④

59. It is easy for a student to get kicked out of class in this school. ① ② ③ ④

60. Students get in trouble for breaking small rules. ① ② ③ ④

61. Teachers are very strict here. ① ② ③ ④

62. Students get in trouble for talking. ① ② ③ ④

63. In our school, students are given the chance to help make decisions. ① ② ③ ④

64. Students in this school have a say in how things work. ① ② ③ ④

65. Students get to help decide some of the rules in this school. ① ② ③ ④

66. Teachers ask students what they want to learn about. ① ② ③ ④

67. Students help decide how class time is spent. ① ② ③ ④

68. New and different ways of teaching are tried in classes. ① ② ③ ④

69. New ideas are tried out here. ① ② ③ ④

70. Teachers like students to try unusual projects. ① ② ③ ④

71. In classes, we are given assignments to help us find out about things outside of school. ① ② ③ ④

72. Your teachers show that they think it is important for students of different races and cultures at your school to get along with each other. ① ② ③ ④

73. Students of many different races and cultures are chosen to participate in important school activities. ① ② ③ ④

74. You get to do something which helps you learn about students of different races and cultures at your school. ① ② ③ ④

75. You work with students of different races and cultures in a school activity. ① ② ③ ④

76. Has anyone at school threatened to beat you up or hurt you if you didn't give them your money or something else that belonged to you? ① ② ③ ④

77. Has anyone actually beaten you up or really hurt you when you were at school? ① ② ③ ④

78. Have you ever brought something to school to protect yourself? ① ② ③ ④

79. Have you ever been afraid that someone will hurt or bother you at school? ① ② ③ ④

80. Has anything worth more than a dollar been stolen from your desk or locker at school when you weren't around? ① ② ③ ④

81. Has anyone offered or tried to sell you drugs at school? ① ② ③ ④

How Do You Feel?

**Mark the answer that shows how often each of these things happen to you.
Choose the answer that is best for you. There are no right or wrong answers.**

		Never	Some times	Often	Always
82.	I feel sad or empty.	①	②	③	④
83.	I worry when I think I have done poorly at something.	①	②	③	④
84.	I would feel afraid of being on my own at home.	①	②	③	④
85.	Nothing is much fun anymore.	①	②	③	④
86.	I worry that something awful will happen to someone in my family.	①	②	③	④
87.	I am afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds).	①	②	③	④
88.	I worry what other people think of me.	①	②	③	④
89.	I have trouble sleeping.	①	②	③	④
90.	I feel scared if I have to sleep on my own.	①	②	③	④
91.	I have problems with my appetite.	①	②	③	④
92.	I suddenly become dizzy or faint when there is no reason for this.	①	②	③	④
93.	I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order).	①	②	③	④
94.	I have no energy for things.	①	②	③	④
95.	I suddenly start to tremble or shake when there is no reason for this.	①	②	③	④
96.	I cannot think clearly.	①	②	③	④

97. I feel worthless.	① ② ③ ④

97. I feel worthless.   ① ② ③ ④

98. I have to think of special thoughts (like numbers or words) to stop bad things from happening.   ① ② ③ ④

99. I think about death.   ① ② ③ ④

100. I feel like I don't want to move.   ① ② ③ ④

101. I worry that I will suddenly get a scared feeling when there is nothing to be afraid of.   ① ② ③ ④

102. I am tired a lot.   ① ② ③ ④

103. I feel afraid that I will make a fool of myself in front of people.   ① ② ③ ④

104. I have to do some things in just the right way to stop bad things from happening.   ① ② ③ ④

105. I feel restless.   ① ② ③ ④

106. I worry that something bad will happen to me.   ① ② ③ ④

What Kinds of Support Do You Get?

On the next few pages, you will be asked to respond to sentences about some form of support or help that you might get from either a parent or guardian, from a teacher (or other adult in your school), from classmates, or from a close friend. Read each sentence carefully and answer honestly. There are no right or wrong answers. **Please read the example below carefully before answering the next few pages.**

How often do…	Never	Almost Never	Some of the time	Most of the time	Almost always	Always
My Classmate(s) help me with projects in class.	①	②	③	④	⑤	⑥

How often do your parent(s) or guardian(s)…	Never	Almost Never	Some of the time	Most of the time	Almost always	Always
107…show they are proud of me.	①	②	③	④	⑤	⑥
108…understand me.	①	②	③	④	⑤	⑥
109…listen to me when I need to talk.	①	②	③	④	⑤	⑥
110…make suggestions when I don't know what to do.	①	②	③	④	⑤	⑥
111…give me good advice.	①	②	③	④	⑤	⑥
112…help me solve problems by giving me information.	①	②	③	④	⑤	⑥
113…tell me I did a good job when I do something well.	①	②	③	④	⑤	⑥
114…nicely tell me when I make mistakes.	①	②	③	④	⑤	⑥
115…reward me when I've done something well.	①	②	③	④	⑤	⑥
116…help me practice my activities.	①	②	③	④	⑤	⑥
117…take time to help me decide things.	①	②	③	④	⑤	⑥
118…get me many of the things I need.	①	②	③	④	⑤	⑥

My teacher(s) (or other adult(s) in my school)….	Never	Almost Never	Some of the time	Most of the time	Almost always	Always
119…cares about me.	①	②	③	④	⑤	⑥
120…treats me fairly.	①	②	③	④	⑤	⑥
121…makes it okay to ask questions.	①	②	③	④	⑤	⑥
122…explains things that I don't understand.	①	②	③	④	⑤	⑥
123…shows me how to do things.	①	②	③	④	⑤	⑥
124…helps me solve problems by giving me information.	①	②	③	④	⑤	⑥
125…tells me I did a good job when I've done something well.	①	②	③	④	⑤	⑥
126…nicely tells me when I make mistakes.	①	②	③	④	⑤	⑥
127…tells me how well I do on tasks.	①	②	③	④	⑤	⑥
128…makes sure I have what I need for school.	①	②	③	④	⑤	⑥
129…takes time to help me learn to do something well.	①	②	③	④	⑤	⑥
130…spends time with me when I need help.	①	②	③	④	⑤	⑥

My Close Friend(s)....	Never	Almost Never	Some of the time	Most of the time	Almost always	Always
131...understands my feelings.	①	②	③	④	⑤	⑥
132...sticks up for me if others are treating me badly.	①	②	③	④	⑤	⑥
133...spends time with me when I'm lonely.	①	②	③	④	⑤	⑥
134...gives me ideas when I don't know what to do.	①	②	③	④	⑤	⑥
135...gives me good advice.	①	②	③	④	⑤	⑥
136...explains things that I don't understand.	①	②	③	④	⑤	⑥
137...tells me he or she likes what I do.	①	②	③	④	⑤	⑥
138...nicely tells me when I make mistakes.	①	②	③	④	⑤	⑥
139...nicely tells me the truth about how I do on things.	①	②	③	④	⑤	⑥
140...helps me when I need it.	①	②	③	④	⑤	⑥
141...shares his or her things with me.	①	②	③	④	⑤	⑥
142...takes time to help me solve problems.	①	②	③	④	⑤	⑥

My Classmates….	Never	Almost Never	Some of the time	Most of the time	Almost always	Always
143…treat me nicely.	①	②	③	④	⑤	⑥
144…like most of my ideas and opinions.	①	②	③	④	⑤	⑥
145…pay attention to me.	①	②	③	④	⑤	⑥
146…give me ideas when I don't know what to do.	①	②	③	④	⑤	⑥
147…give me information so I can learn new things.	①	②	③	④	⑤	⑥
148…give me good advice.	①	②	③	④	⑤	⑥
149…tells me I did a good job when I've done something well.	①	②	③	④	⑤	⑥
150…nicely tell me when I make mistakes.	①	②	③	④	⑤	⑥
151…notice when I have worked hard.	①	②	③	④	⑤	⑥
152…ask me to join activities.	①	②	③	④	⑤	⑥
153…spend time doing things with me.	①	②	③	④	⑤	⑥
154…help me with projects in class.	①	②	③	④	⑤	⑥

Thank You!

If you are having problems with other students at school,
please know that you do not have to face it alone; you can get help.

You can talk to your parents or others family members;
they may have some ideas that you have not yet thought about.
You can talk to any adult that you trust at the school –
a counsellor, a teacher or coach, a custodian, a youth worker, a bus driver, etc.

We want to help…….contact us.

Do you want help with problems you are having with other students?

☐   NO, <u>everything is ok</u>

☐   YES, <u>I would like help</u> – write your name on the line below

_____

Print your name (FIRST NAME, LAST NAME)

If you would like help from someone outside of the school you could call one of the following help lines.

Help Line for Children (24 Hours)	604-310-1234
Kids Help Phone	1-800-668-6868

(*1-800 numbers can be called FREE from payphones, no money needed).

THANK YOU FOR COMPLETING THIS SURVEY!

Your feedback will help us to make this school safe for all students.