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WASHINGTON UNIVERSITY IN ST. LOUIS

George Warren Brown School of Social Work

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Risk and Protective Factors for Bullying Victimization among Sexual Minority Youths

by

Paul R. Sterzing

A dissertation presented to the
Graduate School of Arts and Sciences
of Washington University in
partial fulfillment of the
requirements for the degree
of Doctor of Philosophy

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2012

ABSTRACT OF THE DISSERTATION

Risk and Protective Factors for Bullying Victimization among Sexual Minority Youths

by

Paul R. Sterzing

Washington University in St. Louis, 2012

Professor Wendy Auslander, Chair

Sexual minority youths (SMY) suffer higher rates of bullying victimization and related mental health and academic problems compared to their heterosexual peers (D'Augelli, 2006; Kosciw, Diaz, & Greytak, 2008; Rivers, 2001; Williams, Bowen, & Horvath, 2005). At present, little research has investigated the modifiable and non-modifiable risk and protective factors that are associated with lower frequencies of bullying victimization and victim distress for SMY. This study utilized a risk and resilience theoretical framework (Garmezy, 1990; Rutter, 1990) and addressed the following research questions among a community-based sample of SMY: 1) What are the associations between risk and protective factors and the frequencies of total and four types (i.e., verbal, relational, electronic, and physical) of bullying victimization? 2) What are the associations between the frequencies of total and four types of bullying victimization and mental health problems and academic outcomes? and 3) To what extent do *modifiable* risk and protective factors (MRPF) moderate the association between total bullying victimization and mental health problems and academic outcomes?

A cross-sectional, quantitative design was utilized for this study. Structured, face-to-face interviews were conducted with SMY (N = 125) aged 15 to 19 years old and recruited from two Midwest, community-based organizations. Bivariate analyses were performed to identify associations between (1) risk and protective factors and bullying victimization (total and type) and (2) bullying victimization (total and type) and mental health problems and academic outcomes. Multiple regression analyses were performed to explore the potential moderating influence of MRPF on the relationship between total bullying victimization and mental health problems and academic outcomes.

For research question 1, SMY who reported higher levels of classmate support and positive school climate experienced significantly lower frequencies of bullying victimization. Older SMY reported significantly lower levels of physical and verbal bullying victimization than their younger counterparts. Similarly, African American and Caucasian SMY reported lower levels of physical and verbal bullying victimization compared to their Hispanic, Native American, and multiracial counterparts. Emotional, physical, and sexual child abuse were identified as significant risk factors for bullying victimization.

For research question 2, SMY who experienced higher frequencies of bullying victimization (total and type) reported significantly higher levels of psychological distress, anxiety, and depression. Further, those who experienced higher frequencies of bullying victimization (total and type) had significantly higher odds of having seriously considered suicide, attempted suicide, and experienced disciplinary actions in school. SMY who reported higher frequencies of bullying victimization also had significantly lower grade performance. Overall, physical bullying victimization had the strongest

associations with mental health problems and academic outcomes, while electronic bullying victimization consistently had the weakest associations.

For research question 3, classmate support was found to be a significant moderator of total bullying victimization and grade performance, such that SMY with higher levels of classmate support experienced less of a decline in grades as the frequency of total bullying victimization increased compared to SMY with lower levels of classmate support. Last, parent support was found to be a significant moderator of total bullying victimization and psychological distress. High levels of parent support had a protective effect on psychological distress only at a low frequency of total bullying victimization. Parent support appeared to be unable to protect SMY from poorer psychological distress as the frequency of total bullying victimization increased.

This study is one of the first to examine the protective factors present in the lives of SMY and contributes to the bullying literature for SMY by identifying the modifiable and non-modifiable risk and protective factors that may be used to inform multi-level, anti-bullying interventions. Individual-level intervention components may include provision or referral to mental health services to address the high levels of mental health problems and histories of child abuse and neglect often present in the lives of SMY. In addition, peer-level intervention components may include the adoption of peer mentoring programs that foster classmate support and increase the rates at which classmates intervene to stop incidents of bullying victimization at school. Last, school-level intervention components may include strategies that promote positive school climates for SMY through the adoption of anti-bullying and anti-discrimination policies that provide specific protections for sexual minority students, teachers, and staff.

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I am sincerely grateful for the wise and patient mentorship of my Dissertation Chair, Wendy Auslander. Dr. Auslander personally recruited me into the doctoral program and has been my advisor, area statement committee chair, and dissertation chair. My research and writing skills have vastly improved from her exacting standards and careful tutelage. Dr. Auslander has been a tireless advocate of mine in the program and on the job market. Her commitment to my success has never wavered and for that I am eternally grateful. I also want to express a special thanks to the other members of my dissertation committee: Renee M. Cunningham-Williams, Melissa Jonson-Reid, Ramesh Raghavan, Paul Shattuck, and Ed Spitznagel.

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I also want to personally thank the 125 sexual minority youths who participated in this study. They took an hour out of their lives often on a Friday night where they could have hung out with their friends. Instead, they spent that time with me and honestly shared about some painful experiences they had had with bullying victimization, suicidal ideation, and child abuse and neglect. I strive for excellence in my research on their behalf and to work towards a future where youth are no longer targeted for bullying because of their actual or perceived sexual orientation.

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LIST OF ABBREVIATIONS

BSI	Brief Symptom Inventory
CASSS	Child and Adolescent Social Support Scale
CDC	Centers for Disease Control and Prevention
CMMFS	Circumplex Model of Marital and Family Systems
CS	Classmate Support
CTQ	Childhood Trauma Questionnaire
FACES IV	Family Adaptability and Cohesion Evaluations Scales IV
FS	Friend Support
GAY	Growing American Youth
GLSEN	Gay, Lesbian and Straight Education Network
GSI	Global Severity Index
HNAM	Hispanic, Native American, and Multiracial
IYG	Indiana Youth Group
LHC	Life History Calendar
PS	Parent Support
QQPO	Queer, Questioning, Pansexual, and Other
MRPF	Modifiable Risk and Protective Factors
SBS	Swearer Bullying Survey
SMY	Sexual Minority Youths
TAS	Thoughts About School

TS	Teacher Support
TBV	Total Bullying Victimization
YRBS	Youth Risk Behavior Survey

We've got to dispel the myth that bullying is just a normal rite of passage – that it's some inevitable part of growing up. It's not. We have an obligation to ensure that our schools are safe for all of our kids.

President Obama, *It Gets Better*, October 21, 2010

CHAPTER 1: INTRODUCTION

Background and Significance

Bullying is a serious public health problem for school-aged youths, profoundly impacting their mental health and educational experience (Poteat & Espelage, 2007). Bullying is defined as negative actions that are directed at a student or group of students that is repetitive and chronic, and is characterized by a power imbalance between the aggressor and victim (Olweus, 1993a, 1993b). Approximately one-third of middle and high school students report frequent involvement in bullying either as the bully, the victim, or both (Nansel et al., 2001).

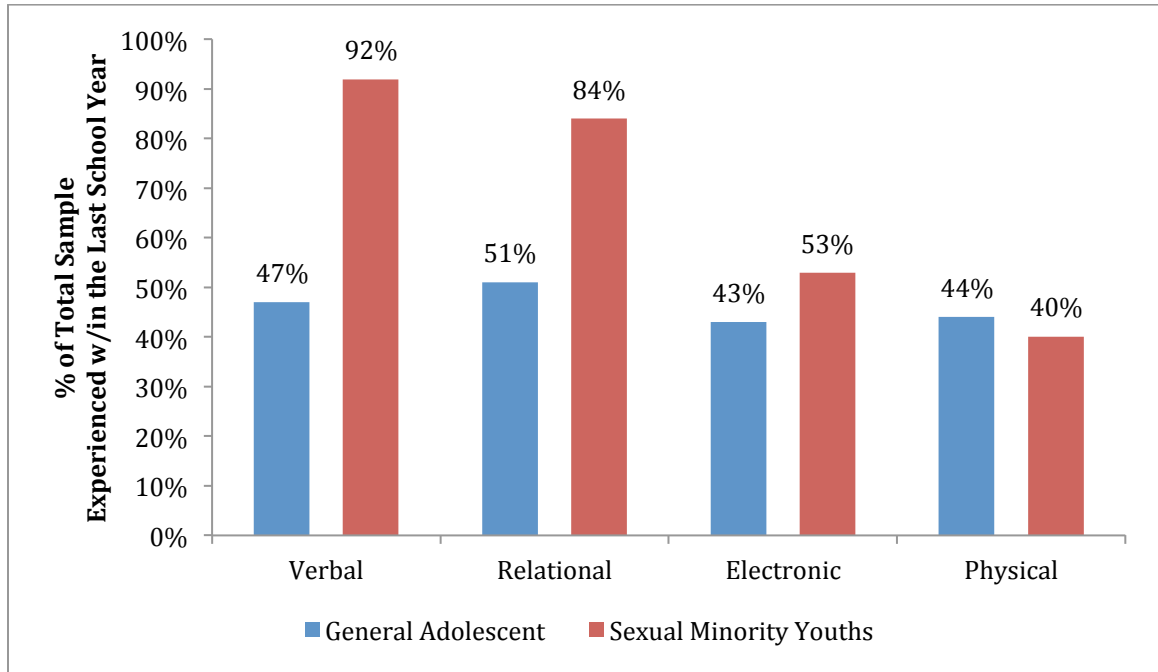
Bullying victimization, however, is not equally distributed across all adolescent populations (Olweus, 1978; Perry, Hodges, & Egan, 2001), with sexual minority youths (SMY) among the most frequently targeted (D'Augelli, Grossman, & Starks, 2006; D'Augelli, Pilkington, & Hershberger, 2002; Hershberger & D'Augelli, 1995; Kosciw, Diaz, Greytak, 2008; Pilkington & D'Augelli, 1995; Williams, Connolly, Pepler, & Craig, 2005). National-level prevalence data indicate that SMY experience profoundly higher rates of verbal and relational bullying victimization in comparison to their heterosexual peers (Figure 1).¹

SMY also appear to suffer worse mental health and academic problems than their heterosexual counterparts even when both groups experience the same type and rate of victimization (Bontempo & D'Augelli, 2002). Research has consistently shown that SMY have higher rates of depression, anxiety, academic failure, and suicide compared to

¹ The national-level study conducted by the Gay, Lesbian and Straight Education Network (GLSEN) in 2008 could not be used to answer the research questions for this dissertation study, as it did not include measures of individual, family, peer, and school-level risk and protective factors for bullying victimization among SMY.

heterosexual peers (D'Augelli, 2002; D'Augelli et al., 2002; Eisenberg & Resnick, 2006; Faulkner & Cranston, 1998; Williams et al., 2005).

Figure 1. Prevalence of Bullying Victimization among Sexual Minority Youths and General Adolescents²



Costs of Bullying Victimization

The Centers for Disease Control and Prevention (CDC) have identified youth violence as an important public health problem with bullying and school-related violence as critical subtypes of this larger concept. Youth violence costs society more than \$158 billion a year in medical expenditures, lost productivity, and quality of life impairment (Children's Safety Network Economics & Data Analysis Resource Center, 2000; Mercy, Butchart, Farrington, & Cerdá, 2002). More specifically, the financial impact of bullying may cost individual schools more than 2 million annually related to increases in

² Harris Interactive, 2007 (N=821); Harris Interactive & GLSEN, 2005 (N=3450); Kosciw, et al., 2010 (N=7261); Nansel et al., 2001 (N=15684)

absenteeism, suspensions, expulsions, drop outs, alternative education placements, and vandalism (Phillips, Linney, & Pack, 2008). Bullying victimization seriously impacts a student's sense of safety and ability to thrive academically. The CDC found 6% of high school students reported not attending school on one or more days in the previous 30, because they felt unsafe at school or when traveling to and from school (CDC, 2006). In an effort to address this problem, the US Department of Health and Human Services (2011) has made bullying prevention a national priority through its Healthy People 2020 initiative, which aims to increase school safety and the adoption of anti-bullying policies over the coming decade.

Purpose of the Study

Little is currently known about the modifiable and non-modifiable risk and protective factors that help explain why some SMY are bullied more consistently than others, and why some bullied SMY are less likely to develop mental health and academic problems. For example, the general adolescent literature has identified child abuse and neglect as non-modifiable risk factors for bullying victimization (Duncan, 1999a; Duncan, 1999b). At present, child abuse and neglect as risk factors for bullying victimization remain largely unexplored with SMY. This is an important gap given the higher rates of physical and sexual child abuse reported by SMY compared to their heterosexual peers (Friedman et al., 2011).

In studies with the general adolescent population, modifiable protective factors—forms of situational coping, family functioning, social support (parent, close friend, classmate, and teacher) and positive school climate—have been shown to differentially

influence the relationships between bullying victimization and mental health problems and academic outcomes (Graham & Juvonen, 2001; Kochenderfer-Ladd & Ladd, 2001; Perry et al., 2001). These modifiable factors also remain unexplored with SMY. Furthermore, research is needed to elucidate the relationships between the types of bullying victimization and mental health problems and academic outcomes among SMY (Kochenderfer-Ladd & Ladd, 2001).

This strengths-based, cross-sectional, quantitative study utilized a social ecological perspective, specifically a risk and resilience theoretical framework, and involved conducting structured interviews among a convenience sample of 125 SMY who attended two community organizations designed to serve the social needs of non-heterosexual youths. This study did not test causal pathways between modifiable and non-modifiable risk and protective factors, bullying victimization, mental health problems, and academic outcomes because of its cross-sectional research design. The primary sample size was determined through a power analysis that is presented in Chapter 3. Figure 2 provides a visual representation of the study's research questions and variables. Further, non-modifiable risk and protective factors (e.g., demographics, gender-role conformity, sexuality disclosure, and child abuse and neglect) were not examined under research question 3.

Significance for Social Work Research and Practice

The primary contribution of this study is the identification of modifiable and non-modifiable risk and protective factors. Modifiable risk and protective factors (MRPF) are individual, family, peer, and school-level factors that can be modified by intervention to

reduce the probability of bullying victimization and related victim distress (Last, 2001). The identification of MRPF may lead to reductions in bullying victimization for SMY and the development of tailored individual, family, and school interventions. The identification of MRPF is a necessary first step to the development of ecologically focused interventions (Fraser, Kirby, & Smokowski, 2004).

Results from this study may inform future research, policy, and the development of individual- and school-level interventions. This study may help inform future federal-level and state-level policies pertaining to the adoption of school-based, anti-bullying interventions that provide specific protections and content relevant to sexual minority students. In addition, individual-level interventions may include educational instruction, role-playing, and behavioral modification strategies to promote more active coping skills that facilitate greater problem-solving, seeking of social support, and reporting of bullying victimization incidents. Organization-specific strategies may include the implementation of social support mechanisms at the school-level that promote peer and teacher relationships (i.e., peer and teacher mentoring programs) with SMY.

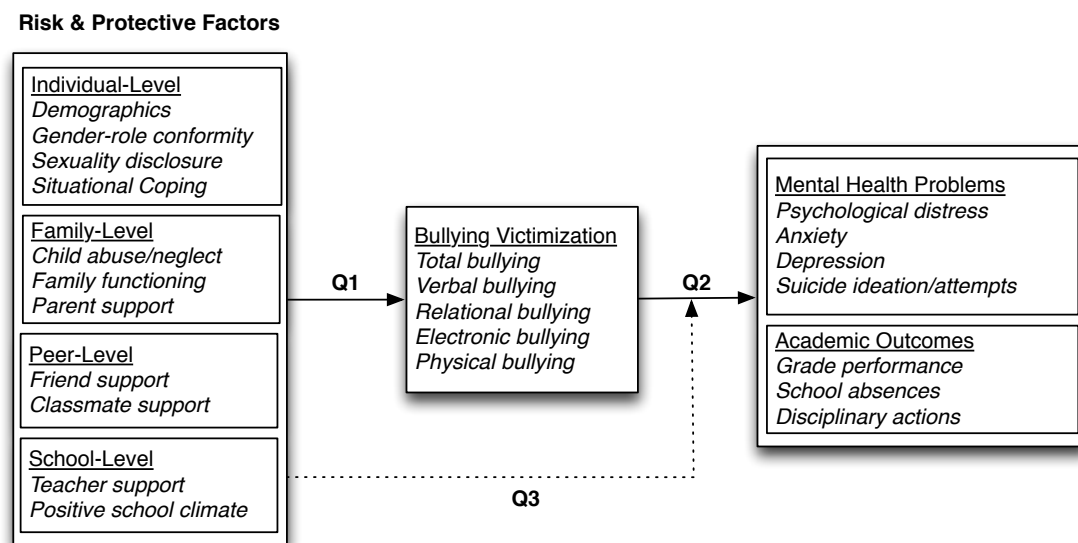
Research Questions

The following research questions were addressed:

1. What are the associations between risk and protective factors (i.e., demographics, gender-role conformity, sexuality disclosure, forms of situational coping, child abuse and neglect, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) and the frequencies of total and four types (i.e., verbal, relational, electronic, and physical) of bullying victimization?

2. What are the associations between the frequencies of total and four types of bullying victimization and mental health problems (i.e., psychological distress, anxiety, depression, seriously considered suicide, made a suicide plan, and attempted suicide) and academic outcomes (i.e., grade performance, school absences, and disciplinary actions)?
3. To what extent do *modifiable* risk and protective factors (i.e., forms of situational coping, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) moderate the association between total bullying victimization and mental health problems and academic outcomes?

Figure 2. Research Questions and Variables for the Proposed Study^{3, 4}



³ This study is cross-sectional and did not test causal pathways.

⁴ Demographics, gender-role conformity, sexuality disclosure, and child abuse and neglect are non-modifiable risk and protective factors and were not examined in research question 3.

CHAPTER 2: REVIEW OF LITERATURE

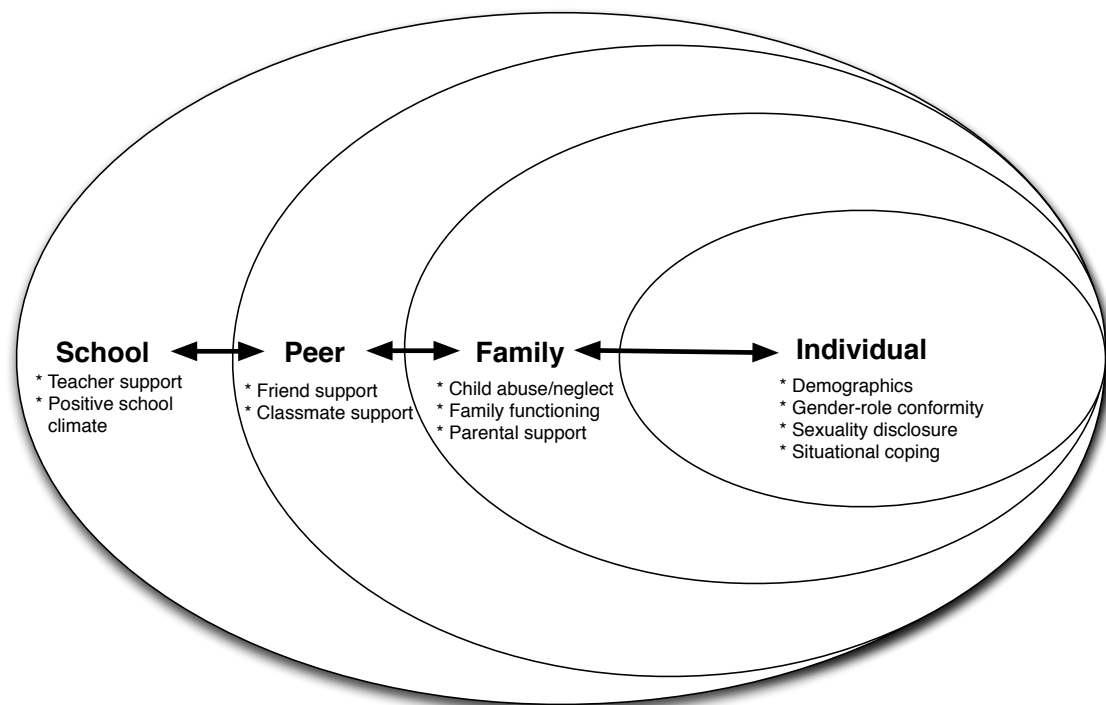
This chapter presents the theoretical framework and the empirical literature that guided the development of this study. The theoretical framework is presented first followed by the review of the empirical literature. The review of the empirical literature is divided into two sections: 1) bullying victimization rates and related mental health problems and academic outcomes and 2) an exploration of potential, modifiable and non-modifiable risk and protective factors for bullying victimization. The first section details the prevalence of bullying victimization and related mental health problems and academic outcomes for SMY. This includes a discussion of the characteristics of bullying victimization (type and frequency) that may influence the development of future mental health and academic problems. The influences of bullying victimization type (i.e., verbal, relational, electronic, and physical) and frequency (i.e., intensity) on mental health problems and academic outcomes are relatively unexplored factors among SMY. The second section on modifiable and non-modifiable risk and protective factors examines factors across the individual, family, peer, and school-levels levels that may also influence the frequency of bullying victimization and the related development of future mental health and academic problems.

Theoretical Framework

A risk and resilience framework was the primary theoretical framework that guided the development and selection of the proposed study's research questions and variables. This framework emphasizes the four primary levels that comprise the social ecology of childhood: individual, family, peer, and school-level risk and protective

factors (Fraser, 2004a; Fraser et al., 2004). Bullying victimization is an ecological phenomenon that is established and maintained through the complex interactions of these four domains (Swearer & Doll, 2001). Figure 3 illustrates the interactive nature of bullying victimization where the individual is nested within the larger contexts of families, peer groups, and schools. The arrows in the figure are emphasizing the bidirectional influences among the various social ecological levels.

Figure 3. Social Ecological Framework of Bullying Among Youth⁵



A risk and resilience framework fits within an ecological systems approach that describes human behavior as emerging from the interaction between these multiple

⁵ Adapted from Bronfenbrenner (1979), Swearer & Doll (2001), and Swearer & Espelage (2004)

systems (Bronfenbrenner, 1979; Fraser, 2004a). The youth is the center of his or her social ecology, and may possess individual factors that support or inhibit the occurrence of bullying victimization and the related development of mental health and academic problems. These individual factors may include one's sex, gender-role conformity, and coping skills. Males, for example, are often at greater risk for physical and verbal types of bullying victimization, while females are often at greater risk for relational types of bullying victimization (D'Augelli, 2002). Family-level factors may include child abuse and neglect, family functioning, and parental support (Espelage & Swearer, 2004). In general adolescent studies, bullied youths are more likely to report being victims of child abuse (e.g., emotional, physical, and sexual) in comparison to non-bullied youths (Duncan, 1999a, 1999b). The peer and school-levels are comprised of peer groups and the school environment. Across the peer and school-levels, high levels of peer and teacher support may inhibit the occurrence of bullying victimization and the development of mental health and academic problems (Espelage & Swearer, 2004). The possibility for social support exists across the family, peer, and school-levels, and may lead to reductions in bullying victimization and/or prevent the development (i.e., stress-buffering role) of future mental health and academic problems.

Resilience is a “dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar, Cicchetti, & Becker, 2000b p. 543). Further, this definition contains two key elements: 1) exposure to a substantial threat or acute adversity and 2) the achievement of positive adaptation in the face of such exposure (Garmezy, 1990; Luthar et al., 2000b; Rutter, 1990). Resilience is the result of the interplay between risk and protective factors. A risk factor is any aspect that increases the

likelihood of harm occurring to the adolescent, while contributing to the development of mental, psychosocial, and behavioral dysfunction or maintaining a problem condition (Fraser, 2004b; Richman & Fraser, 2001). Protective factors are internal or external resources that promote positive development and/or ameliorate risk, helping youths to successfully cope with high levels of adversity (Luthar, Cicchetti, & Becker, 2000a; Richman & Fraser, 2001; Rutter, 1987). Overall, three broad sets of protective factors have been identified: personality features, family functioning, and the availability of external supports (i.e., social support) that encourage and reinforce effective coping (Garmezy, 1985).

As stated previously, modifiable risk and protective factors (MRPF) are individual, family, peer, and school-level determinants that can be modified by intervention to reduce the probability of bullying victimization and related victim distress (Last, 2001). MRPF are conceptualized as having a direct (i.e., main) effect on the occurrence of bullying victimization and the development of mental health and academic problems. One of the main benefits of MRPF is their ability to be modified through interventions to reduce the probability of bullying victimization and related victim distress (Last, 2011). Fraser et al. (2004a) postulate the identification of MRPF is a necessary first step to the development of ecologically focused interventions. For example, individual-level factors such as active forms of situational coping for bullying victimization (e.g., problem-focused, seeking social support) could be modified through interventions to reduce the occurrence of future bullying victimization incidents. Further, interventions could also target the modifiable factors of family functioning and parent support to increase their potentially protective influence against bullying victimization

and related mental health problems and academic outcomes (Friedman, Koeske, Silvestre, Korr, Sites, 2006; Graham & Juvonen, 2001; Kochenderfer-Ladd & Ladd, 2001).

Bullying victimization is also conceptualized as a risk factor to the development of mental health and academic problems with the type and frequency of bullying victimization influencing the victim's level of distress. Risk and protective factors may also function as buffers by interacting with bullying victimization and influencing the development of subsequent mental health and academic problems. Social support (parent, friend, classmate, and teacher), for example, may interact with bullying victimization to ameliorate the development of negative outcomes after the youth is bullied (Frazer, Galinsky, & Richman, 1999).

Bullying Victimization Rates and Mental Health Problems and Academic

Outcomes: Empirical Findings

Bullying is defined as negative actions that are directed at a student or group of students that is repetitive and chronic, and is characterized by a power imbalance between the aggressor and victim (Olweus, 1993a, 1993b). The general adolescent literature has identified the type (i.e., verbal, relational, electronic, and physical) and frequency (i.e., intensity) of bullying victimization as important factors in explaining the emergence and severity for certain mental health and academic problems (Kochenderfer-Ladd & Ladd, 2001). Because SMY are known to experience higher rates of bullying victimization (Kosciw et al., 2008), it is imperative to acquire a greater understanding on how the influences of type and frequency impact their mental health and academic well-being.

At present, the literature on SMY and bullying victimization is in its infancy. Empirical research, however, suggests SMY are exposed to higher rates of verbal and physical bullying victimization compared to their heterosexual peers, but few studies have examined relational and electronic bullying victimization among this population. Research on bullying victimization with SMY currently lacks precise data on the frequency of these four types of bullying victimization and how each type may uniquely impact mental health problems and academic outcomes.

Verbal bullying victimization is the most common type of bullying with 59-92% of SMY reporting experiencing verbal bullying victimization because of their known or perceived sexual orientation (D'Augelli et al., 2002; Hershberger & D'Augelli, 1995; Kosciw et al., 2008, Rivers, 2001). In comparison, 47.0% of a general adolescent sample reported experiencing verbal bullying victimization within the last school year (Harris Interactive & GLSEN, 2005). Research has indicated that sexual minority males are more likely to report being publically ridiculed and called names in comparison to their female counterparts (D'Augelli et al., 2002; Rivers, 2001). Verbal bullying victimization also begins, on average, at the age of 13 with sexual minority males reporting a significantly earlier onset than females (D'Augelli et al., 2002). In addition to sex and age differences, one study suggests white SMY are more likely to experience verbal bullying victimization in comparison to SMY of color (Pilkington & D'Augelli, 1995). Although researchers agree that race/ethnicity is an important demographic factor potentially influencing the occurrence of bullying victimization, few studies to date have explored the bullying victimization experiences of non-white SMY. This study will help address this gap.

Physical bullying victimization is also a common occurrence with 11-68% of SMY reporting some form of physical bullying victimization (D'Augelli et al., 2002; D'Augelli et al., 2006; Kosciw, et al., 2010; Williams et al., 2005). In comparison, Nansel et al. (2001) found 44% of a general adolescent sample experienced some form of physical bullying victimization within the last school term. Among SMY, Hershberger and D'Augelli (1995) found 33% reported having objects thrown at their person, 31% were chased or followed, 13% were spat upon, and 10% experienced assault with a weapon. Furthermore, nearly 25% of SMY reported being physically assaulted (e.g., punched, kicked, or injured with a weapon) at school within the last year because of their known or perceived sexual orientation (Kosciw et al., 2008). Similar to verbal bullying victimization, sexual minority males are more likely to report prior incidents of physical bullying victimization compared to their female counterparts (D'Augelli et al., 2002; Rivers, 2001; Russell & Joyner, 2001). However, Pilkington and D'Augelli (1995) found contradictory evidence where sexual minority females were physically victimized at a significantly higher rate than their male peers. The authors attributed this finding to the higher levels of sexuality disclosure—a known risk factor for bullying victimization for SMY—reported by sexual minority females in the study.

Preliminary findings suggest *relational bullying victimization* may also be common, and include acts of aggression that cause or threaten to cause damage to one's peer relationships (Crick & Bigbee, 1998). In a recent study, approximately 84% of SMY reported having rumors or lies spread about them or being deliberately excluded by other students (Kosciw, et al., 2010). In comparison, Harris Interactive & GLSEN (2005) found 51% of a general adolescent sample reported relational bullying victimization within the

last school year. Specifically, D'Augelli et al., (2002) found that 20% of SMY were threatened with disclosure of their sexual orientation. Although the authors did not conceptualize forced disclosure as a form of relational bullying victimization, it appears to function in a similar manner. Forced disclosure profoundly impacts friendships and peer acceptance, and may lead to increased incidents of physical and verbal bullying victimization (D'Augelli, 2002). For example, 39% of SMY reported the loss of friendships because of their sexual orientation, with significantly more females reporting the loss of friends compared to their male peers (D'Augelli, 2002). Rivers (2001) also found an association between sex and relational bullying victimization such that sexual minority females were more likely to report incidents of social exclusion from peers than their male counterparts. Overall, sexual minority females appear to be at greater risk for relational bullying victimization, but this requires further study and confirmatory evidence.

Electronic bullying victimization (i.e., cyberbullying) is a new and growing phenomenon that often extends beyond the physical school environment. Recent studies found that approximately 53% of SMY reported experiencing some form of electronic bullying victimization in the past year via text messages, instant messaging, and social networking websites (Kosciw et al., 2008; Kosciw, et al., 2010). In comparison, a recent study found 43% of a general adolescent sample experienced electronic bullying victimization within the last school year (Harris Interactive, 2007). Few studies have examined this new form of bullying and how it may uniquely impact the mental health problems and academic outcomes of SMY. With the proliferation of social networking (e.g., Facebook, FourSquare, Google+, and Twitter) more research is needed in this area

to understand how they are being used to bully others and the impact they may have on their well-being.

These high rates of bullying victimization may impact mental health problems and academic outcomes including one's overall level of psychological distress, depression, anxiety, suicidal ideation, suicide attempts, grade performance, school absences, and disciplinary actions at school (Kosciw & Diaz, 2006). For example, SMY are five times more likely than the general population to have missed a day of school in the past month (Kosciw & Diaz, 2006). In addition, SMY are twice as likely in comparison to the general population to say they were not planning to complete high school or attend college (Kosciw & Diaz, 2006).

Research also indicates SMY who experience bullying victimization exhibit higher levels of depression and anxiety compared to their heterosexual peers (Faulkner & Cranston, 1998; Williams et al., 2005). For example, Rivers (2001) found depressive affect to be one of the long-term effects of bullying victimization among a sample of sexual minority adults. Sexual minority adults who had been bullied during adolescence were more likely to exhibit symptoms associated with depressive disorders when compared to a sample of non-bullied sexual minority adults (Rivers, 2001). The strong association between bullying victimization and depression is also seen in the general adolescent literature (Hawker & Boulton, 2000). Bontempo and D'Augelli (2002) also found higher rates of bullying victimization were predictive of suicide attempts among SMY. Suicide attempters were more likely to report prior incidents of verbal insults, property damage, and physical assaults than non-attempters (Bontempo & D'Augelli, 2002; Hershberger & D'Augelli, 1995).

Sexual minority females and males do not exhibit the same adjustment outcomes. Sexual minority males appear to have higher levels of suicidal ideation and suicide attempts compared to sexual minority females (Bontempo and D'Augelli, 2002). However, sexual minority females report more trauma-related symptomology (e.g., anxiety) than their male counterparts (D'Augelli et al., 2006). As discussed previously, sexual minority males are more likely to report higher incidents of physical and verbal forms of bullying victimization (D'Augelli et al., 2002; Pilkington & D'Augelli, 1995; Rivers, 2001; Russell & Joyner, 2001), while sexual minority females appear to be at greater risk for relational forms of bullying (Rivers, 2001; Saewyc, Skay, Pettingell, Reis, Bearinger, Resnick, et al., 2006). These sex-related differences in bullying victimization may help explain the disparity in adjustment outcomes for sexual minority females and males.

Modifiable and Non-Modifiable Risk and Protective Factors: Empirical Findings

Little is known about the modifiable and non-modifiable risk and protective factors that SMY possess that influence the occurrence of bullying victimization and related mental health problems and academic outcomes (Varjas, Dew, Marshall, Graybill, Singh, & Meyers, 2008). As discussed above, MRPF are individual, family, peer, and school-level factors that can be modified by intervention to reduce or prevent bullying victimization and related victim distress (Last, 2001). MRPF may include forms of situational coping, family functioning, social support (i.e., parent, friend, classmate, teacher) and positive school climate. In addition, non-modifiable risk and protective factors include demographic characteristics, gender-role conformity, level of sexuality

disclosure, and past exposure to child abuse and neglect. Although some empirical data exist on the non-modifiable risk factors for bullying victimization for SMY (e.g., gender-role conformity, high levels of sexuality disclosure), almost no research has been conducted identifying the modifiable protective factors that may buffer this population from bullying victimization and mental health and academic problems (Pilkington & D'Augelli, 1995).

Individual-Level Risk and Protective Factors

Empirical evidence from both the sexual minority and general adolescent literatures suggest individual-level characteristics—age, sex, race/ethnicity, sexual identity, level of gender conformity, level of sexuality disclosure, and different forms of situational coping—are important in understanding who is targeted for bullying victimization, and who is more likely to develop mental health and academic problems (Birkett, Espelage, & Koenig, 2009; Olweus, 1978; Perry et al., 2001; Pilkington & D'Augelli, 1995). Previous research suggests physical and verbal bullying victimization for general adolescent populations peaks during middle childhood with the highest rates among those 6 to 9 years old (Finkelhor, Turner, Ormrod, & Hamby, 2009). Electronic bullying victimization, however, appears to peak between 14 to 17 years of age (Finkelhor et al., 2009). Comparable information is not currently available regarding the age at which bullying victimization peaks and begins to decline on average for SMY. However, older SMY have been shown to report lower frequencies of bullying victimization compared to their younger counterparts (Kosciw et al., 2010).

In the sexual minority literature, Birkett et al. (2009) found youths who identified as bisexual or questioning were significantly more likely to report higher levels of bullying victimization, truancy, and feelings of depression and suicidality compared to youths who identify their sexuality as gay/lesbian and heterosexual. This is one of the first studies to examine the differences in bullying victimization rates and adjustment for SMY by the category of sexual identity. This study investigated this gap by examining bisexual and questioning youths and comparing their frequency of bullying victimization and mental health problems and academic outcomes to their gay and lesbian identified counterparts.

In addition, SMY who reported being more open about their sexual orientation (i.e., high levels of sexuality disclosure) were more likely to be victimized than non-disclosed youths (Pilkington & D'Augelli, 1995). Risk of bullying victimization may increase when peers know or suspect the adolescent is not heterosexual. Being more visible, may allow potential bullies to more easily target SMY for bullying victimization. Overall, SMY who are self-disclosed over a longer period of time report greater levels of bullying victimization (D'Augelli, et al., 2006).

Higher levels of gender-role conformity (i.e., adherence to traditional gender roles) are also associated with lower frequencies of bullying victimization and suicidality (Friedman et al., 2006). For sexual minority males, gender-role conformity may decrease one's level of bullying victimization, while gender atypical behaviors such as disliking sports, social withdrawal, or shyness may be perceived as feminine or "gay" and increase the risk for bullying victimization (Waldo, Hesson-McInnis, and D'Augelli, 1998). SMY who are low in gender-role conformity are verbally and physically victimized at an

earlier age and experience more physical aggression over their lifetime (D'Augelli et al., 2006). The role of gender-role conformity for sexual minority females and non-white SMY is less well understood and requires further research. For example, Pilkington and D'Augelli (1995) found non-white SMY reported a lower frequency of bullying victimization than their white counterparts. The authors attributed this finding to non-white SMY being more gender-role conforming and less open with others about their sexual orientation in comparison to their white counterparts. Again, more research is needed to understand the relationship between bullying victimization and gender-role conformity for sexual minority females and youths of color.

The general adolescent literature has identified MRPF that remain unexplored with sexual minority youth samples. Forms of situational coping, for example, may influence the occurrence of bullying victimization such that youths who utilize active forms of coping by problem-solving or seeking out social support from peers may be less likely to experience future occurrences of bullying victimization compared to youths who utilize passive forms of coping by withdrawing or ignoring the situation (Graham & Juvonen, 2001; Kochenderfer-Ladd & Ladd, 2001). As far as the author is aware, active and passive situational coping skills have not been examined as a possible moderator among SMY.

Family-Level Risk and Protective Factors

Family relationships are among the most critical in influencing health-risk behaviors and psychosocial adjustment for all adolescents regardless of sexual orientation (Resnick, Bearman, Blum, Bauman, Harris, Jones, et al., 1997). Few SMY studies have

examined the risk and protective factors of child abuse and neglect, family functioning, and parent support for bullying victimization and related mental health problems and academic outcomes (Russell, 2005). In the general adolescent literature, family functioning has been shown to be associated with bullying victimization, with female bullying victims reporting poorer family functioning in comparison to non-victims (Rigby, 1993, 1994). Moreover, bullying victims have families that can be described as enmeshed, and may include an overcontrolling and restrictive parent (Berdondini & Smith, 1996; Bowers, Smith, & Binney, 1994; Olweus, 1993a). Bullying victims, in comparison to non-victims, are also more likely to be victims of child abuse including emotional, physical, and sexual abuse (Duncan, 1999a, 1999b). For example, bullying victims compared to non-victims reported a significantly higher frequency of physical (i.e., slapping, kicking) and emotional maltreatment (i.e., yelling, insulting, criticizing, making feel guilty, ridiculing or humiliating; Duncan, 1999a, 1999b). The influences of family functioning and child abuse and neglect on bullying victimization and mental health problems and academic outcomes are important gaps that remain to be addressed in the SMY literature.

In addition to family functioning and child abuse and neglect, parental support has been shown to be associated with lower levels of psychosocial problems, such as suicidality among samples of SMY (Friedman et al., 2006). Hershberger and D'Augelli (1995) found parental support (i.e., acceptance, protection, and positive relations) moderated the relationship between bullying victimization and mental health, but only for low levels of bullying victimization. Unfortunately, the authors confounded frequency (i.e., low level) and type of bullying victimization in this study, as a low level of bullying

victimization was defined as experiencing verbal bullying, while a high level of bullying victimization was defined as experiencing physical or sexual assault. Clearly, more research is required to explore the relationships between family-level risk and protective factors and the frequency and type of bullying victimization for SMY.

Peer-Level Risk and Protective Factors

The general adolescent literature has identified peer social support as a modifiable protective factor that is associated with reductions in bullying victimization and victim distress (Hodges, Malone, & Perry, 1997). According to Hodges et al. (1997), the quality of one's friendships is an important protective factor for adolescents such that bullies are more likely to target ostracized youth. High quality friendships have been shown to provide support and feelings of connectedness and security (Bukowski, Hoza, & Boivin, 1994). Furthermore, high quality friendships are also associated with higher levels of self-esteem and social competence (Buhrmester, 1998). Close friendships may also protect adolescents from peer rejection in larger social groups (Bukowski, et al., 1994). This is an important gap in the sexual minority youth literature that remains to be explored. Furthermore, peer-related protective factors may function as "neutralizing experiences" against bullying victimization (Rutter, 2001). Research indicates that positive experiences that occur within the same domain as the risk factor (i.e., bullying victimization) may directly counter or compensate for the adverse condition (Rutter, 2001). In other words, peer social support may more strongly counteract the negative effects of bullying victimization than support from one's parents or teachers.

School-Level Risk and Protective Factors

The school environment also plays an important role in influencing bullying victimization behaviors. Modifiable protective factors at the school-level include positive school climate and teacher support. They may help prevent or reduce bullying victimization in schools. Goodenow, Szalacha, and Westheimer (2006), for example, found SMY who attend schools with a gay straight alliance (GSA) were able to identify supportive teachers or staff members, and were more likely to report incidents of bullying victimization than their peers without a GSA. SMY with a GSA also reported significantly lower levels of absenteeism compared to their counterparts without a GSA (Goodenow et al., 2006). The presence of a GSA was significantly associated with greater school safety after controlling for student demographics and school characteristics (Goodenow et al., 2006). SMY with a GSA were found to be half as likely to report dating violence, bullying victimization, and skipping school due to fear.

Summary and Implications for Present Study

SMY are at greater risk for bullying victimization and related mental health and academic problems compared to their heterosexual peers (Bontempo & D'Augelli, 2002; Kosciw et al., 2008, 2010). The field currently lacks basic information about the full range of bullying victimization characteristics (i.e., type and frequency) experienced by this population, and the relationships that exist between these characteristics and mental health problems and academic outcomes. Furthermore, the proposed study investigated modifiable and non-modifiable risk and protective factors identified in the general adolescent literature, which have been shown to influence rates of bullying victimization

and related mental health problems and academic outcomes. These modifiable risk and protective factors have not been explored among samples of SMY.

In an effort to address this gap, the proposed study had an exploratory aim to investigate the moderating influences of MRPF on the relationship between bullying victimization and mental health problems and academic outcomes. These preliminary findings will be used to guide the development of future research. Overall, the information from this study and future research has the potential to help school and community-based agency personnel target their existing services to youths at the greatest risk, and to create new programs and policies that foster the development of potential protective factors (i.e., family functioning, peer support, and teacher support). This work is vital as the identification of MRPF are the building blocks of effective interventions (Richman & Fraser, 2001).

Research Questions and Hypotheses

Based on the review of the general adolescent and sexual minority specific literatures, hypotheses were proposed for each research question. The following factors were derived from a review of the general adolescent literature as opposed to literature specific to SMY, and shaped this study's hypotheses: forms of situational coping, child abuse and neglect, family functioning, and social support (parent, friend, classmate, and teacher). Directional hypotheses were provided where sufficient empirical literature existed to support their inclusion. No hypotheses were provided for racial/ethnic group differences in the frequency of bullying victimization by total and type due to the lack of

sufficient empirical data. The remaining hypotheses were non-directional and exploratory in nature.

The proposed study will address the following research questions and hypotheses among a community-based sample of 125 SMY:

1. What are the associations between risk and protective factors (i.e., demographics, gender-role conformity, sexuality disclosure, forms of situational coping, child abuse and neglect, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) and the frequencies of total and four types of bullying victimization (i.e., verbal, relational, electronic, and physical)?
 - H_{1a}: The type and frequencies of bullying victimization will significantly differ by sex, age, race/ethnicity, and sexual identity.
 - Sexual minority males will experience higher frequencies of physical and verbal bullying victimization than sexual minority females.
 - Sexual minority females will experience higher frequencies of relational bullying victimization than sexual minority males.
 - Older SMY will experience lower frequencies of bullying victimization by total and type compared to younger SMY.
 - Bisexual and questioning youths will experience higher frequencies of bullying victimization by total and type compared to gay and lesbian youths.
 - H_{1b}: SMY with higher levels of the following protective factors—gender-role conformity, problem-focused coping, seeking social support coping,

family functioning, parent support, friend support, classmate support, teacher support, and positive school climate—will experience lower frequencies of bullying victimization by total and type.

- H_{1c}: SMY with higher levels of the following risk factors—sexuality disclosure, detachment coping, keeps-to-self coping, wishful thinking coping, and child abuse and neglect—will experience higher frequencies of bullying victimization by total and type.

2. What are the associations between the frequencies of total and four types of bullying victimization and mental health problems (i.e., psychological distress, anxiety, depression, seriously considered suicide, made a suicide plan, and attempted suicide) and academic outcomes (i.e., grade performance, school absences, and disciplinary actions)?

- H_{2a}: SMY with higher frequencies of bullying victimization by total and type will experience higher levels of psychological distress, anxiety, and depression.
- H_{2b}: SMY with higher frequencies of bullying victimization by total and type will have a greater likelihood of having seriously considered suicide, made a suicide plan, and attempted suicide in the last 12 months.
- H_{2c}: SMY with higher frequencies of bullying victimization by total and type will experience poorer academic outcomes.
 - a. SMY with higher frequencies of bullying victimization by total and type will experience lower levels of grade performance, more school absences, and more disciplinary actions.

3. To what extent do *modifiable* risk and protective factors (i.e., forms of situational coping, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) moderate the association between total bullying victimization and mental health problems and academic outcomes?⁶

⁶ No hypotheses were provided for this exploratory research question.

CHAPTER 3: STUDY DESIGN AND METHODS

Overview of Research Design

The proposed study utilized a cross-sectional, quantitative design to identify the modifiable and non-modifiable risk and protective factors that were associated with bullying victimization and related mental health and academic problems among a community-based sample of SMY. Structured, face-to-face interviews were conducted with a convenience sample of 125 participants recruited from two community-based organizations. This sample size was based on a power analysis that is presented later in this chapter.

Collaborating Sites

Participant recruitment occurred at two organizations located in the Midwest. The recruitment sites were chosen based on the following set of criteria: 1) size of client base, 2) prior experience conducting research, 3) sufficient infrastructure to assist with study recruitment and space to accommodate the administration of the interview, and 4) close proximity to St. Louis, MO (< 250 miles) to increase study feasibility. The first recruitment site was Growing American Youth (GAY), which is located in St. Louis, MO and was founded in 1980. GAY provides a variety of programs and events to create social outlets for SMY. GAY holds meetings monthly (Tuesdays and Saturdays) and weekly (Thursdays). GAY serves youths 21 years and younger, and interacts with just over 1000 unique youths per year through its weekly meetings and annual events (e.g., Out in the City Prom and 500 Youth Strong March in the St. Louis Gay Pride Parade).

GAY did not provide exact gender and sexual identity estimates on the youth they serve. It is a fair assessment that of this approximately 1000 youths interacted with on a yearly basis many may (1) only attend the annual events and (2) identify as heterosexual (i.e., straight allies). This study did not capture youths who only attended annual events, and heterosexual youths were not eligible for the study.

The second recruitment site was the Indiana Youth Group (IYG), which is located in Indianapolis, Indiana and was founded in 1987. IYG offers drop-in and social program services for SMY aged 12-20 years old three nights a week, and serves approximately 565 unduplicated youths per year. According to statistics reported by IYG in 2009, the clients were 53% female, 44% male, and 3% transgendered.

Sample Inclusion and Exclusion Criteria

Participants were included in the study if they meet the following criteria: 1) self-identification as gay, lesbian, bisexual, queer, questioning, pansexual, and other (i.e., non-heterosexual), 2) aged 15 to 19 years old, and 3) interested in participating in the study. The age range of 15 to 19 years old for this study was chosen for three reasons. First, youths under the age of 15 represent a very small percentage of the clients serviced by SMY community organizations. Second, adolescents younger than 15 years old are less likely to have adopted a sexual minority identity at this stage in their development. Third, older adolescents or young adults (i.e., 20-24 years old) were excluded to reduce retrospective recall bias related to remembering past bullying incidents from elementary, middle, and high school. This study did not exclude adolescents aged 15-19 years old who had dropped out of school, because previous research has indicated bullied SMY are

more likely to suffer academic consequences including higher dropout rates compared to non-bullied SMY (Eisenberg & Resnick, 2006; Remafedi, 1987; Rivers, 2004; Rivers & Carragher, 2003).

Participant Recruitment and Data Collection

The staff from both organizations actively assisted in participant recruitment by making announcements and placing flyers about an upcoming research opportunity at all youth-oriented meetings and events, beginning approximately two-months prior to the start of data collection. GAY and IYG were also provided one-page informational handouts to disburse during youth-oriented events. The informational handout provided a brief summary of the study including eligibility requirements and its time commitment. The study protocols and advertising materials were approved by Washington University's IRB (201012968).

The recruitment procedures were tailored to each organization. At IYG, the staff made an informal introduction between the youth and interviewer. The interviewer would then provide the youth with a one-page informational handout, and review the purpose of the study, its eligibility requirements, time commitment to complete the survey, and compensation for participation. The interviewer asked the youth if he or she was eligible to be in the study and interested in participating. If eligible and interested, the youth accompanied the interviewer to a private room at IYG. The interviewer confirmed the youth's eligibility by asking about his or her age, sexual identity, and interest in participating in the study. The eligibility screen was conducted prior to the assent/consent process and the start of the survey.

Participant recruitment at GAY was accomplished by the interviewer making an announcement about the study at the weekly Thursday night meeting, describing its purpose, eligibility requirements, time commitment, and compensation for participation. The interviewer then accompanied an interested youth to a private room to (a) assess his or her eligibility, (b) administer the informed assent/consent procedures, and (c) conduct the survey. After the study announcement was made at the weekly Thursday night meeting, GAY staff asked eligible and interested youths to sign up for an available interview time slot held weekly on Saturdays and Sundays. The weekend interviews were held at the office of GAY located two blocks from the Thursday night weekly meeting or at Washington University. In addition to this recruitment strategy, a study announcement was made in GAY's quarterly newsletter directing eligible and interested youths to contact the staff at GAY to sign up for an available interview time slot on Saturdays or Sundays. In total, participant recruitment lasted for approximately seven months (April to November, 2011).

The survey was administered in a paper and pencil format with the participant sitting directly across from the interviewer in a private room. Participants were provided with a response packet that included scales corresponding to different sections of the survey. The interviewer would then read each survey question after directing participants to turn to the required page on their response packet. The participants then chose their answer using the scale on that page. The interview lasted approximately one-hour, and participants were compensated \$15 for participation with a Target (GAY) or Starbucks (IYG) giftcard.

The method of face-to-face interviewing was selected over self-administered, self-report to help ensure the quality and completeness of the structured surveys (i.e., eliminate the possibility of missing data). Further, face-to-face interviewing as compared to other survey methods (e.g., internet, telephone, and self-administered, self-report) allowed the interviewer to establish a rapport with each participant facilitating the disclosure of potentially sensitive information regarding prior victimization experiences in school and at home.

Human Subjects Procedures

Pilot testing of the interview and data collection began after receiving final approval from Washington University's IRB (201012968). The study received a Certificate of Confidentiality (CC-HD-11-25) through the National Institute of Child Health and Human Development, because of the potential risk related to discussing bullying perpetrating behaviors toward other peers. The human subjects committee approved a parental waiver of consent for the study to reduce the risk (e.g., housing insecurity, verbal/physical abuse) of inadvertently disclosing the youth's sexual orientation to his or her parents. The interviewer personally administered the assent (<18 y/o) or consent (≥ 18 y/o) and structured, face-to-face survey to all the participants (N = 125) in a private room.

Written informed assent or consent was obtained from all participants prior to the administration of the structured, face-to-face survey. All participants were informed that study participation was completely voluntary, and that they may refuse to answer any question and/or stop participation at any point without forfeiting the \$15 in

compensation. Furthermore, participation or non-participation in the study would not influence their ability to access services at that organization. All participants were informed of the major risks involved with study participation, which included breach of confidentiality and the elicitation of painful memories and emotions from questions that ask about child abuse and neglect, bullying victimization, and suicide attempts. The interviewer carefully ensured the protection and confidentiality of the study data through the utilization of unique ID numbers on all surveys. Data collection occurred in a private room limiting the risk of breaching confidentiality.

After the interview was conducted, all participants were provided information on how to access local counseling services and a national suicide hotline in case the survey elicited any issues that necessitated seeking professional help. The interviewer stopped the interview on two occasions when participants appeared emotionally distressed (i.e., tears). The interviewer provided the participants a break and reminded them they did not need to complete the interview and could skip any question that made them feel uncomfortable. Both participants reported feeling comfortable to continue after these short breaks, and, subsequently, completed both surveys. No interviews needed to be terminated because of the participant's emotional distress. However, two participants did terminate the interview approximately half way through the survey citing boredom as the reason they wanted to stop.

The completed surveys were stored in a locked briefcase and transported back to Washington University, where they were stored in a locked file cabinet in the Principal Investigator's (PI) office. The data were entered into a Microsoft Excel spreadsheet that was password protected and stored on the secured, password-protected network at the

Brown School of Social Work. The assent and consent forms were secured in a locked desk drawer separate from the completed surveys.

Power Analysis

The sample size (N=125) was determined by the ability to detect significant main effects among MRPF, bullying victimization, and mental health problems and academic outcomes in a multiple regression model. Previous research indicated verbal bullying victimization significantly predicted increased levels of anxiety and depression ($\beta = .30$) for adolescents using the Youth Self Report Anxious/Depressed Subscale (Achenbach, 1991; Poteat & Espelage, 2007). Verbal bullying victimization significantly contributed .08 (ΔR^2) to the overall regression model explaining the variance of anxiety and depression (Poteat & Espelage, 2007).

Power was calculated for a two-sided hypothesis test with a significance level $\alpha = .05$. The power calculations were based on proposing a multiple regression model with a maximum of 6 variables (3 control variables, 3 main predictors). A main predictor that explains 6% of the variance (i.e., $\Delta R^2 = .06$) was considered to be a statistically meaningful increase to the overall model (Cohen, 1988; Poteat & Espelage, 2007). A sample size of 125 yielded 85% power to detect a partial correlation of .25, which is considered a small effect size and equal to a change in R^2 of .06 (Cohen, 1988).

Variables and Measures

This section provides a detailed description of all the variables included in this study (demographics, independent variables, and dependent variables). It begins with a

description of the process—youth advisory panel and pilot testing—that was used to refine the measures in the survey. This is followed by an examination of (a) the dependent variables (Table 1) and (b) the independent variables by social ecological level (Tables 2-4). The modifiable and non-modifiable risk and protective factors that were included in the study cut across the individual-, family-, peer-, and school-level (Fraser, 2004; Fraser et al., 2004). Existing measures were chosen based on their prior use with general adolescent and sexual minority populations, prior bullying studies, and empirical evidence indicating satisfactory validity and reliability.

Refinement of Measures

Youth Advisory Panel

A youth advisory panel reviewed the structured survey for content and language. The panel was comprised of the PI, a GAY Youth Advisor, and five SMY from GAY (aged 15-19 years old). The SMY who participated in the youth advisory panel were excluded from the final sample. The survey and meeting agenda were provided to all members two weeks prior to the meeting of the youth advisory panel. The youth advisory panel met once for two hours to review the survey. The meeting included a detailed discussion regarding the meaning of bullying and what behaviors the youths thought did and did not constitute acts of verbal, relational, electronic, and physical bullying victimization. Further, sexual identity and gender response categories were reviewed to be inclusive of the youths' identities and experiences. The meeting also included a review of the gender-role conformity, sexuality disclosure, and academic outcome variables.

Several changes were made to the survey based on feedback from the youth advisory panel: (1) a response category was added for sexual identity (pansexual), (2) locker rooms was added to the places where bullying victimization occurs, (3) a yes/no question was added to assess transgender status, and (4) more examples of electronic bullying victimization were added to the definition of bullying victimization. These changes were made prior to pilot testing.

Pilot Testing

Pilot testing included administering the survey to four participants. Two participants (one male and one female) were interviewed from each organization. The participants recruited from GAY were between the ages of 18-19, while the participants from IYG were 15-17 years old. The SMY who participated in the pilot testing phase were excluded from the final sample. The pilot participants were asked a series of questions to assess the logical flow and clarity of the questions, cultural appropriateness, and the time-burden of the instrument. The participants were asked to provide detailed feedback in the following areas: 1) language of the survey, 2) identify any questions that were unclear, strange, or offensive, 3) appropriateness of response categories, 4) suggestions to improve the introductions to the survey sections, and 5) overall fatigue level after completing the survey instrument (Bowden, Fox-Rushby, Nyandieka, & Wanjau, 2002; D'Augelli & Grossman, 2006). These youths were compensated \$15 each for their participation. The final version of the survey and response packet incorporated the feedback acquired from pilot testing: (1) reformatting of the response scales to ensure greater consistency and (2) words added to clarify the meaning of sick (i.e., physically or

emotionally), blue (i.e., sad or down), inferior to (i.e., less than) others, and seldom (i.e., infrequently).

Dependent Variables

Bullying Victimization

An adapted version of the Swearer Bullying Survey (SBS; Swearer & Doll, 2001) was used to assess if the youths had ever been bullied in their lifetime and within the last school year. Two binary (yes/no) variables were used to assess bullying victimization in the participant's lifetime and within the last school year. If participant's reported experiencing bullying victimization within the last school year, they were asked a series of 18 questions measuring the frequency of four types of bullying victimization (i.e., verbal, relational, electronic, and physical). The range of the scale to assess frequency was (0) never, (1) once in the last year, (2) two or more times a year, (3) one or more times a month, (4) one or more times a week, and (5) one or more times a day. The SBS has been used extensively with a wide range of school-aged youths, teachers, and parents. The SBS comes in different versions with this study adapting the middle and high school version. For this current study, the SBS demonstrated satisfactory internal reliability on the total scale and all four subscales with alpha coefficients ranging from .79 to .92 (Table 1).

The scale score for each type of bullying victimization (i.e., verbal, relational, electronic, and physical) was calculated by summing the values of the individual items and dividing by the total number of items for that subscale. The scale score for total bullying victimization scale was constructed in a similar manner by adding together the

values from all 18 questions and dividing by the total number of items. Dividing by the total number of items for each scale (total and type), allowed the measures to be placed back on the original scale the participants used to answer each question (Range: 0 to 5).

The SBS is a general measure of bullying victimization, in which the content or perceived motivations (e.g., heterosexism, racism, sexism, ableism) of the bullying victimization are not assessed. The rationale for the use of a general (i.e., “called me names”) as opposed to a sexual orientation specific measure (i.e., “called me names because of my known or perceived sexual orientation”) was that SMY cannot always know the motivations behind being ostracized by a social group or being pushed in the hallway. The use of a general measure helped to ensure the frequency of bullying victimization was not under estimated for this population. One of the limitations of this measure, however, was that it cannot be assumed the participants were bullied solely because of their known or perceived sexual orientation.

Mental Health Problems – Psychological Distress, Anxiety, and Depression

The BSI is a 53-item self-report scale that measures nine dimensions of mental health functioning: 1) Somatization, 2) Obsessive-Compulsive, 3) Interpersonal Sensitivity, 4) Depression, 5) Anxiety, 6) Hostility, 7) Phobic Anxiety, 8) Paranoid Ideation, and 9) Psychoticism. The BSI included a total scale score that combined all nine dimensions of mental health functioning into an indicator of overall psychological distress (i.e., Global Severity Index). To examine the influence of bullying victimization on mental health problems, this study utilized the BSI’s measures of overall psychological distress, anxiety, and depression. Unlike the anxiety and depression

subscales, the other subscales of mental health functioning are not recommended to be used as standalone measures of their corresponding mental health construct (Derogatis, 1993). The BSI measured the experience of symptoms across the past seven days on a 5-point scale from (0) not at all to (4) extremely. For this current study, the BSI demonstrated excellent internal consistency with alphas ranging from 0.84 to 0.97 (Table 1). In addition, this instrument has been shown to have excellent convergent, discriminant, and construct validity (Boulet & Boss, 1991; Derogatis, 1993).

Mental Health Problems – Suicidal Ideation / Suicide Attempts

Three items from the 2009 Youth Risk Behavior Survey (YRBS) were used to measure suicidal ideation and suicide attempts: (1) “During the past twelve months, did you ever seriously consider attempting suicide?”, (2) “During the past 12 months, did you make a plan about how you would attempt suicide?”, and (3) “During the past 12 months, how many times did you actually attempt suicide?” (CDC, 2009). The question assessing the number of suicide attempts was recoded into a binary, yes/no variable for analytic purposes given its positively skewed distribution (Table 1).

Academic Outcomes – Grade Performance, School Absences, and Disciplinary Actions

Two single-item questions were used to measure grade performance (“On your last report card, if you think of all of your subjects, what grades did you get?”) and school absences (“How many absences have you had in the last 90 days”). A two-item scale was used to assess the number of disciplinary actions the youth experienced in the last 90 days: (1) “How many detentions have you had in the last 90 days” and (2) “How many

school suspensions have you had in the last 90 days”. For this current study, disciplinary actions demonstrated satisfactory internal consistency with an alpha of .78 (Table 1).

Table 1. Summary List of Dependent Variables, Measures, and Alpha Coefficients from Current Study

Variables	Measures
Bullying Victimization	Swearer Bullying Survey (Swearer & Doll, 2001) <ul style="list-style-type: none"> • Bullying Victimization – Lifetime and Last School Year (2 items, binary) • Total (18 items; $\alpha = .92$) • Verbal (4 items; $\alpha = .85$) • Relational (7 items; $\alpha = .82$) • Electronic (3 items; $\alpha = .80$) • Physical (4 items; $\alpha = .79$)
Mental Health Problems	Brief Symptom Inventory (Derogatis, 1993) <ul style="list-style-type: none"> • Psychological Distress (Global Severity Index; 53 items; $\alpha = .97$) • Anxiety (6 items; $\alpha = .84$) • Depression (6 items; $\alpha = .87$) Youth Risk Behavior Survey (CDC, 2009) <ul style="list-style-type: none"> • Seriously considered attempting suicide in the past 12 months (1 item, binary) • Made a suicide plan in the past 12 months (1 item, binary) • Number of suicide attempts in the past 12 months (1 item)
Academic Outcomes	Items Created for Current Study <ul style="list-style-type: none"> • Grade performance (1 item) • School absences (1 item) • Disciplinary actions (2 items; $\alpha = .78$)

Individual-Level Risk and Protective Factors

Demographics

The interview items used to measure participant demographic characteristics were adapted from previous SMY studies (Busseri, Willoughby, Chalmers, & Bogaert, 2008;

Diamond & Lucas, 2004). These items include the participant's age, sex, race/ethnicity, and sexual identity (Table 2). Sex was measured with the following response options: female, male, female-to-male, and male-to-female. For analytic purposes (i.e., small group sizes), sex was recoded into a three category variable combining female-to-male and male-to-female into transgender. Sexual identity was measured by asking the participants how they self-identified their sexual orientation: gay, lesbian, bisexual, queer, questioning, pansexual, and other. Sexual identity was recoded into a three-category variable collapsing queer, questioning, pansexual, and other (QQPO) into one group because of small cell sizes. Only one youth identified his sexual orientation as "other" and he referred to himself as "homosexual".

Race/ethnicity was assessed with the following response options: African American, Asian American, Caucasian, Hispanic, Native American, and other. All participants who selected the "other" response category reported being multiracial. For example, these youths reported being "Black and White", "Hispanic and White", and "Pacific Islander and White". Similar to sex and sexual identity, race/ethnicity was recoded into a three-category variable combining Hispanic, Native American, and Multiracial (HNAM) into one group because of small cell sizes. Previous research with the general adolescent population suggests multiracial youths may be more likely to experience bullying victimization compared to their single-race identified counterparts (Stein, Dukes, & Warren, 2007). For this reason, SMY who self-identified as multiracial were not recoded into the race/ethnicity category corresponding to their minority group status (e.g., "Black and White" to "African American" or "Hispanic and White" to "Hispanic").

Gender-Role Conformity

The Gender-Role Conformity Scale (15 total items) was used to assess the participant's level of gender-role conformity (D'Augelli et al., 2006). The participants were asked to recall what they were like as a child (under the age of 13). The 15 items inquired about a range of gender-specific behaviors such as "I preferred rough and tumble play," "I imagined myself as a sports figure," and "I liked dolls." Each item was measured on a 7-point Likert scale ranging from (0) Never to (6) Always. The items were scored and coded such that a high total scale score corresponded with high levels of gender-role conformity. Six items were removed from the scale during reliability analysis to improve the scale's alpha coefficient. The revised scale had good internal consistency with an alpha coefficient of .79 (Table 2).

Sexuality Disclosure

Five items proposed by Diamond and Lucas (2004) were used to assess one's level of sexuality disclosure. Four items included yes/no indicators about groups of individuals who are aware the youth is not heterosexual: 1) close friends, 2) casual friends, 3) mother, and 4) father. The fifth item measured how many heterosexual peers were aware of the youth's non-heterosexuality. For this current study, the scale had poor internal consistency with an alpha coefficient of .53 (Table 2). The scale's alpha coefficient was unable to be improved through the removal of any individual items.

Situational Coping

The revised adolescent version of Ways of Coping was used to assess the forms of situational coping that SMY had used in the past to cope with incidents of bullying victimization (Folkman & Lazarus, 1985). This revised version is a 42-item self-report questionnaire with 8 subscales: detachment (6 items), focusing on the positive (4 items), keeps-to-self (3 items), problem-focused (11 items), seeking social support (7 items), self-blame (3 items), tension reduction (3 items), and wishful thinking (5 items). Youths were instructed to remember back to a time in their lives where they experienced being bullied and report how often they used the following strategies to cope with that situation. For youths who reported never experiencing bullying victimization ($n = 8$), they were asked to remember a time in their lives where they experienced a bad argument or fight with a close friend or family member and report how often they used the same strategies to cope with that situation. The instrument is measured on a 4-point Likert scale: (0) not used, (1) used somewhat, (2) used quite a bit, and (3) used a great deal.

Adapting a similar strategy used by Meijer, Sinnema, Bijstra, Mellenbergh, and Wolters (2002), this study used 5 of the 8 subscales (32 items total) to investigate two styles of situational coping: active (i.e., problem-focused and seeking social support) and passive (i.e., detachment, keeps-to-self, and wishful thinking). Detachment and keeps-to-self are distinct passive forms of situational coping with the latter pertaining to forms of social isolation (e.g., “avoided being with people in general”; “kept others from knowing how bad things are”), while the former relates to efforts to mentally avoid or ignore the situation (e.g., “went on as if nothing had happened”; “tried to forget the whole thing”). The current study found adequate levels of internal consistency for the five subscales:

detachment (.64), keeps-to-self (.69), problem-focused (.67), seeking social support (.75), and wishful thinking (.68).

Table 2. Summary List of Individual-Level Risk and Protective Variables, Measures, and Alpha Coefficients from Current Study

Variables	Measures
Demographics	Demographics (Busseri et al., 2008; Diamond & Lucas, 2004) <ul style="list-style-type: none"> • Age (1 item) • Sex (1 item) • Race/Ethnicity (1 item) • Sexual Identity (1 item)
Gender-Role Conformity	Gender-Role Conformity (D’Augelli, 2006; Phillips & Over, 1995) <ul style="list-style-type: none"> • Items were coded and scored such that a high score corresponded with a high level of gender conformity (9 items; $\alpha = .79$)
Sexuality Disclosure	Sexuality Disclosure (Diamond and Lucas, 2004) <ul style="list-style-type: none"> • Items measured the participant’s level of sexuality disclosure (5 items; $\alpha = .53$)
Situational Coping	Ways of Coping (Folkman & Lazarus, 1985) <ul style="list-style-type: none"> • Detachment (6 items; $\alpha = .64$) • Keeps-to-Self (3 items; $\alpha = .69$) • Problem-Focused (11 items; $\alpha = .67$) • Seeking Social Support (7 items; $\alpha = .75$) • Wishful Thinking (5 items; $\alpha = .68$)

Family-Level Risk and Protective Factors

Child Abuse and Neglect

The Childhood Trauma Questionnaire (CTQ) was used to measure the participant’s level of three types of child abuse (i.e., emotional, physical, and sexual) and two types of child neglect (i.e., emotional and physical; Bernstein & Fink 1998). The

CTQ was developed to assess childhood and adolescent experiences of abuse and neglect that they experienced before the age of 15. The subscales each contained five items (25 total items). The participants were asked to rate each item on a 5-point Likert scale ranging from (1) “never true” to (5) “very often true”. For the current study, the subscales had good internal consistency with alpha coefficients that ranged from .72 to .94 (Table 3).

Family Functioning

The total circumplex ratio of the Family Adaptability and Cohesion Evaluations Scales IV (FACES IV) was used to measure overall family functioning (Olson, 2010; Olson, Gorall, & Tiesel, 2006). FACES IV contains 52 items and six subscales (i.e., balanced cohesion, balanced flexibility, chaotic, disengaged, enmeshed, and rigid). Each subscale contains 7 items, and participants were asked to rate each item on a 5-point Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”. For the current study, five of the six subscales demonstrated satisfactory levels of internal reliability: balanced cohesion = .86, balanced flexibility = .79, chaotic = .74, disengaged = .76, rigidity = .73 (Gorall, Szalacha, & Westheimer, 2006). The enmeshed subscale had poor internal consistency with an alpha coefficient of .55 (Table 3).

The six subscales of the FACES IV measure all dimensions of the Circumplex Model of Marital and Family Systems (CMMFS, Gorall et al., 2006). The main hypothesis of CMMFS contends balanced levels of family cohesion and flexibility are conducive to higher levels of family functioning, while unbalanced cohesion and flexibility are associated with lower functioning families (Olson, 2010). The total

circumplex ratio was designed to provide an overall measure of family functioning combining the previous six subscales into one overall score. The total circumplex ratio ranges from 0 to 10, with a score of 1 indicating an equal amount of balance and unbalance in the system. Scores higher than one on the total circumplex ratio indicate a more balanced and healthy level of family functioning.

Parent Support

The Child and Adolescent Social Support Scale (CASSS) was used to assess the frequency of four types of perceived social support: 1) parent, 2) friend, 3) classmate, and 4) teacher (Malecki, Demaray, & Elliot, 2000; Malecki & Demaray, 2002). CASSS is a 48-item self-report measure with each subscale containing 12 items. The participants reported the frequency in which they received each type of social support using a 6-point Likert scale that ranged from (1) never to (6) always. The CASSS was designed for students in grades 3 through 12. For the current study, the CASSS demonstrated excellent reliability across all subscales with alpha coefficients that ranged from .90 to .94 (Table 3).

Table 3. Summary List of Family-Level Risk and Protective Variables, Measures, and Alpha Coefficients from Current Study

Variables	Measures
Child Abuse / Neglect	Childhood Trauma Questionnaire (Bernstein & Fink, 1998) <ul style="list-style-type: none"> • Emotional Abuse (5 items; $\alpha = .87$) • Physical Abuse (5 items; $\alpha = .84$) • Sexual Abuse (5 items; $\alpha = .94$) • Emotional Neglect (5 items; $\alpha = .90$) • Physical Neglect (5 items; $\alpha = .72$)
Family Functioning	Total Circumplex Ratio – Family Adaptability and Cohesion Evaluations Scales IV (Gorall et al., 2006) <ul style="list-style-type: none"> • Balanced Cohesion (7 items; $\alpha = .86$) • Balanced Flexibility (7 items; $\alpha = .79$) • Chaotic (7 items; $\alpha = .74$) • Disengaged 7 items; $\alpha = .76$) • Enmeshed (7 items; $\alpha = .55$) • Rigid (7 items; $\alpha = .73$)
Parent Support	Child and Adolescent Social Support Scale (Malecki & Demaray, 2002) <ul style="list-style-type: none"> • Parent Support (12 items; $\alpha = .94$)

Peer-Level Risk and Protective Factors

Friend Support and Classmate Support

The CASSS was used to measure peer support using the friend and classmate subscales. The subscales each contained 12 items that assessed the frequency of social support derived from friends and classmates. Friend support ($\alpha = .90$) and classmate support ($\alpha = .93$) both had excellent internal reliability (Table 4). Friend support measured social support provided from close friends and included items like “my close friends help me when I need it” and “my close friends help me when I’m lonely”. Classmate support included items like “my classmates ask me to join activities” and “my

classmates help me with projects in class”. Additional information on the CASS can be found under Parent Support.

Table 4. Summary List of Peer-Level Risk and Protective Variables, Measures, and Alpha Coefficients from Current Study

Variables	Measures
Friend Support	Child and Adolescent Social Support Scale (Malecki & Demaray, 2002) <ul style="list-style-type: none"> • Friend Support (12 items; $\alpha = .90$)
Classmate Support	Child and Adolescent Social Support Scale (Malecki & Demaray, 2002) <ul style="list-style-type: none"> • Classmate Support (12 items; $\alpha = .93$)

School-Level Risk and Protective Factors:

Teacher Support

CASSS was used to measure teacher support using the teacher subscale. The subscale included 12 items that measured the frequency of social support derived from teachers. Teacher support ($\alpha = .92$) had excellent internal reliability (Table 5). Teacher support included items that assessed emotional and educational support provided by the participant’s teachers: “my teachers care about me” and “my teachers make time to help me learn to do something well”. Additional information on the CASS can be found under Parent Support.

Positive School Climate

The brief-version of the Thoughts About School (TAS) was used to assess positive school climate (Song & Swearer, 1999). The TAS is a 13-item self-report

measure that provides a total scale score for positive school climate. The total score captures four dimensions of school climate: 1) positive student and teacher interactions, 2) negative student and teacher interactions, 3) bullying support, and 4) vandalism. These four dimensions are hypothesized to be indicators pertinent to the emotional and behavioral development of students (Swearer et al., 2001). Each item was measured on a 4-point Likert scale that ranged from (1) totally false to (4) totally true. The participants rated how much they thought each statement reflected their school climate. Questions about negative student and teacher interactions and vandalism were reverse coded, with higher total scale scores indicating a more positive school climate. For the current study, the TAS had excellent internal reliability with a coefficient alpha of .88 (Table 5).⁷

Table 5. Summary List of School-Level Risk and Protective Variables, Measures, and Alpha Coefficients from Current Study

Variables	Measures
Teacher Support	Child and Adolescent Social Support Scale (Malecki & Demaray, 2002) <ul style="list-style-type: none"> • Teacher Support (12 items; $\alpha = .92$)
Positive School Climate	Thoughts About School (Song & Swearer, 1999) <ul style="list-style-type: none"> • Items were coded and scored such that a higher score corresponded with a more positive school climate (13 items; $\alpha = .88$)

⁷ Classmate support and positive school climate were weakly to moderately correlated with one another ($r = .31, p < .001$) indicating these two constructs were related but distinct from one another. Similarly, teacher support and positive school climate were weakly correlated ($r = .20, p < .05$) with one another suggesting these two constructs were related but also distinct from each other.

Data Management

Data Entry

Data were entered in duplicate into an Excel spreadsheet, first by the PI and then by a master's level research assistant. The spreadsheets were imported into SAS 9.3 and analyzed (i.e., PROC COMPARE) to identify any discrepancies between the two datasets. In total, 150 discrepancies (0.23% total error rate) were found between the two datasets. The results indicated a high-level of reliability between both coders. The PI examined the original paper and pencil surveys to verify and correct all 150 data entry errors.

The final, corrected dataset was imported into SAS 9.3 and used to conduct all the analyses for research questions 1-3 detailed below. Prior to the start of the data analyses, scales were created in SAS and diagnostics were performed to check for internal reliability (see previous Tables 1-5; pgs. 40, 44, 47-49). Reliability analyses were conducted (1) to examine consistency of existing standardized measures and (2) to improve the coefficient alphas of non-standardized and created scales. As discussed in the preceding section, gender-role conformity was the only measure requiring the removal of items to improve the scale's coefficient alpha.

Data Cleaning

After the data were corrected for any data entry errors, data cleaning procedures were performed to examine the range of all variables and scales. If these values fell outside the preset minimum and maximum range, SAS code was inspected and corrected for any coding errors. Value labels were created for all variables and scales, and, where

appropriate, included the total number of items and the possible range for that variable or scale. This step was done to assist in the data cleaning process.

Missing Data

This study had a low rate of missing data (<1%) on all dependent variables (i.e., bullying victimization, mental health problems, and academic outcomes). Furthermore, no independent variable had a missing rate greater than 2.4%. The majority of the missing data were due to two participants terminating the interview prior to completion. Because of the low rate of missingness, listwise deletion was used for all subsequent analyses as opposed to performing any type of data imputation.

Data Analysis

In preparation for answering the study's research questions, univariate analyses were conducted to provide descriptive data on all variables. Frequency distributions were examined for categorical variables, while measures of central tendency and dispersion were inspected for continuous variables. The descriptive data were used to (1) present participant demographics for the total sample, (2) present the frequency of bullying victimization by total and type, and (3) examine variable distributions for normality and non-normality to determine which variables require transformation, recoding, and/or the use of non-parametric statistical tests.

The majority of variables in the study approximated a normal distribution, but some exhibited a positively skewed distribution (e.g., electronic bullying victimization, physical bullying victimization, disciplinary actions, physical child abuse and neglect,

sexual child abuse, and family functioning). Transformations, recoding, and non-parametric statistical tests (e.g., Spearman rho correlation, Kruskal-Wallis test, Wilcoxon Rank Sum test) were used when appropriate to conduct the required statistical analyses.

Prior to the data analysis for research questions 1-3, bivariate analyses were performed to identify any significant (1) demographic differences by recruitment site (chi-square and t-test), (2) associations between participant demographics and dependent variables (chi-square, Kruskal-Wallis test, simple logistic regression, and Spearman rho correlation), and (3) associations between child abuse and neglect and dependent variables (Spearman rho correlation and simple logistic regression). This study used an alpha-level of .05 to detect significance for all statistical tests. The examination of these bivariate relationships was a necessary step to identify any potential control variables (i.e., recruitment site, demographics, and child abuse and neglect) for research question 3. Emotional child abuse was identified as a control variable for the final multiple regression models in research question 3, with the exception of school absences and disciplinary actions. No other control variables were identified.

Analysis for Research 1

1. What are the associations between risk and protective factors (i.e., demographics, gender-role conformity, sexuality disclosure, forms of situational coping, child abuse and neglect, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) and the frequencies of total and four types (i.e., verbal, relational, electronic, and physical) of bullying victimization?

The first research question examined the associations between risk and protective factors (independent variables) and the frequency of total and four types of bullying victimization (dependent variables). The dependent variables included five measures of bullying victimization that assessed the frequency (i.e., number of occurrences in the last school year) of total, verbal, relational, electronic, and physical bullying victimization. To answer research question one, non-parametric, Spearman rho correlations were performed to identify the presence of any significant bivariate associations between (a) the study's risk and protective factors and (b) the frequency of total and four types of bullying victimization. These relationships were examined by social ecological level, and were presented by the individual-, family-, peer-, and school-levels. For the sake of simplicity and clarity in presenting the results, non-parametric tests were used throughout for research question 1 due to the non-normality of some of the independent and dependent variables. Parametric equivalents were also performed to identify any potential differences in the results from the non-parametric tests. This was done to ensure the potential loss of power from using the non-parametric tests did not influence the ability to detect significant bivariate associations. No differences were found between the non-parametric and parametric tests in regards to significant and non-significant findings.

Analysis for Research 2:

2. What are the associations between the frequencies of total and four types of bullying victimization and mental health problems (i.e., psychological distress, anxiety, depression, seriously considered suicide, made a suicide plan, and attempted suicide)

and academic outcomes (i.e., grade performance, school absences, and disciplinary actions)?

Research question 2 examined the associations between total and four types of bullying victimization and mental health problems (six variables) and academic outcomes (three variables). Prior to conducting bivariate correlations with the continuous independent and dependent variables, a series of multivariate regressions were performed to estimate a single model regressing *multiple* dependent variables (i.e., psychological distress, anxiety, and depression) on each bullying victimization variable (total and type). Multivariate regression was performed prior to the bivariate correlations to help address the concern of making a type 1 error when conducting multiple pairwise tests. If the multivariate regression models were statistically significant indicating the presence of an association between bullying victimization and at least one of the dependent variables, Pearson correlations were performed to identify the significant bivariate relationships within each multivariate regression model.

Similarly, multivariate regression was used to identify the presence of significant associations between bullying victimization (total and type) and academic outcomes (i.e., grade performance and school absences). Again, this technique was used to estimate a single model regressing *multiple* dependent variables (i.e., grade performance and school absences) on each bullying victimization variable (total and type). Pearson correlations were performed to identify any significant bivariate relationships within each multivariate regression model.

Spearman rho correlations were used to assess the direction and magnitude of the associations between bullying victimization (total and type) and disciplinary actions because of the extreme positive skewness of this dependent variable. Last, simple logistic regression was performed to assess the magnitude and direction of the relationships between bullying victimization (total and type) and the binary dependent variables of suicidal ideation and suicide attempts. Simple logistic regression was used because no multivariate equivalent exists to regress multiple binary dependent variables onto one or more independent variables to control for the experimentwise error rate.

Analysis for Research 3:

3. To what extent do *modifiable* risk and protective factors (i.e., forms of situational coping, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) moderate the association between total bullying victimization and mental health problems and academic outcomes?

Research question 3 was exploratory in nature and proposed to examine the potential moderating influences of MRPF on the relationships between total bullying victimization and mental health problems and academic outcomes. This study included a large number of risk and protective factors, types of bullying victimization, mental health problems, and academic outcomes. The purpose of research question 3 was to identify the *modifiable* factors that could be potentially targeted to reduce bullying victimization and/or buffer SMY from some of the related negative consequences of bullying victimization. In agreement with this purpose, *non-modifiable* risk and protective factors

(e.g., gender conformity and sexuality disclosure) were not examined for research question 3. Child abuse and neglect is also a *non-modifiable* risk factor, but previous research has demonstrated its association with bullying victimization and mental health problems and academic outcomes (Friedman et al., 2011; Hawker & Boulton, 2000). As a result, the influence of child abuse and neglect was controlled for in research question 3.

The total bullying victimization scale score was used as the main independent variable for all subsequent multiple regression models in research question 3 for conceptual and pragmatic reasons. Given the exploratory nature of research question 3 and the lack of research in this area, the use of the total bullying victimization scale score was a logical first step to explore and provide an overview of the potential moderating influences of MRPF on bullying victimization and mental health problems and academic outcomes. Furthermore, the smaller number of SMY who experienced physical bullying victimization did not allow for the exploration of all types of bullying victimization. The use of the total bullying victimization scale score also functioned as a data reduction strategy (i.e., reducing the total number of multiple regression models) by providing an overall measure of the youth's experience with bullying victimization. Similarly, psychological distress was utilized as the primary measure of mental health problems excluding anxiety and depression from research question 3. The overall measure of psychological distress encompassed both aspects of anxiety and depression and functioned to reduce the total number of multiple regression models in research question 3.

Multiple regression diagnostics were performed prior to the start of any multiple regression analyses for research question 3. Family functioning needed to be log

transformed due to its positively skewed distribution. Disciplinary actions was recoded into a binary (yes/no) variable to address its extreme positive skewness. Logistic multiple regression was used to analyze disciplinary actions. No other significant problems were found except for multicollinearity between total bullying victimization and the interaction terms. To correct for multicollinearity, total bullying victimization and the MRPF were mean-centered prior to the creation of the interaction terms.

For each dependent variable (i.e., psychological distress, seriously considered suicide, made a suicide plan, attempted suicide, grade performance, school absences, and disciplinary actions), a series of three-variable multiple regression models (total bullying victimization, moderator, and interaction term) were performed to identify any significant interaction terms. For clarity and conciseness, Chapter 4 presents the results only for the three variable multiple regression models that included a significant interaction term. Appendix A presents the results for all the significant and non-significant three variable models.

To visually examine the nature of any significant interactions, a SAS macro entitled “PROCESS” was utilized to probe the interaction effects for both linear and logistic multiple regression models (Hayes, 2012). MRPF were examined at multiple points across their continuous distributions, corresponding to the 10th percentile (low-level), 50th percentile (medium-level), and 90th percentile (high-level). The macro analyzed the moderators in their continuous form without the need for dummy coding.

If the interaction terms were non-significant, a series of two-variable multiple regression models (total bullying victimization and MRPF) were performed to identify any significant main effects across all the dependent variables. The exploratory analyses

led to one final multiple regression model for each dependent variable, which included the significant predictors and interaction terms from the previous aforementioned two- and three-variable models.

Last, the final models for research question 3 controlled for any demographic variables (gender, race/ethnicity, sexual identity, and age) that were significantly associated with both the independent (total bullying victimization) and dependent variables. In addition to demographics, child abuse and neglect was also controlled for in research question 3. Previous research has indicated significant associations between child abuse and neglect and the study's independent (total bullying victimization) and dependent variables (mental health problems and academic outcomes) in general adolescent and sexual minority populations (Friedman et al., 2011; Hawker & Boulton, 2000). To determine the unique effect total bullying victimization and the potential MRPF have on mental health problems and academic outcomes, child abuse and neglect may be an important control variable for research question 3.

CHAPTER 4: RESULTS

Participant Demographics

For the present study, 125 SMY were interviewed at Growing American Youth (St. Louis, MO; n = 40) and the Indiana Youth Group (Indianapolis, IN; n = 85). Table 6 presents participant demographics for the total sample. The sample was comprised of SMY who ranged in age from 15-19 years old with a mean age of 17.2 (SD = 1.3). The gender composition of the sample was 61 females (48.8%), 51 males (40.8%), 9 female-to-males (7.2%), and 4 male-to-females (3.2%). For analytic purposes, gender required recoding to address small cell sizes. Female-to-male and male-to-female were recoded as transgender (n = 13, 10.4%).

The racial/ethnic composition of the sample was 86 Caucasian (68.8%), 18 African American (14.4%), 6 Hispanic/Latino (4.8%), 1 Native American/American Indian (0.8%), and 14 multiracial (11.2%). Hispanic, Native American, and Multiracial (HNAM) were recoded and collapsed into one group to address small cell sizes (n = 21, 16.8%). In relation to sexual identity, 41 (32.8%) youths identified as gay, 34 (27.2%) as lesbian, 24 (19.2%) as bisexual, 8 (6.4%) as queer, 6 (4.8%) as questioning, 12 (9.6%) as pansexual, and 1 (0.8%) as other. Queer, questioning, pansexual, and other (QQPO) had to be recoded and collapsed into one group because of small cell sizes (n = 26, 20.8%).

Table 6. Participant Demographics for the Total Sample (N = 125)

Demographics	N	Frequency (% Total)
Gender		
Female	61	48.8
Male	51	40.8
Transgender ⁸	13	10.4
Race		
African American	18	14.4
Caucasian	86	68.8
HNAM ⁸	21	16.8
Sexual Identity		
Gay	41	32.8
Lesbian	34	27.2
Bisexual	24	19.2
QQPO ⁸	26	20.8
	Mean	SD
Age (15-19 years)	17.2	1.3

Site Differences

Analyses were conducted to determine if any recruitment site differences between GAY (n = 40) and IYG (n = 85) were present across demographic characteristics and the dependent variables. Results of the chi-square and t-test analyses indicated no significant demographic differences by recruitment site. Second, a series of independent samples t-tests, Wilcoxon-Mann-Whitney tests, and chi-square tests were performed to identify any differences among the dependent variables by recruitment site. Similarly, no significant differences were found by recruitment site for bullying victimization (total and type), mental health problems, school absences, and disciplinary actions. However, a significant difference was found in grade performance between recruitment sites ($z = 3.37, p < .001$). GAY had a mean grade response of “A’s and B’s”, while IYG had a mean grade response

⁸ Female-to-male and male-to-female (Transgender), Hispanic, Native American and Multiracial (HNAM), and Queer, Questioning, Pansexual and Other (QQPO) were recoded for analytic purposes due to small cell sizes.

of “Mostly B’s” [$\bar{x} = 5.73$ (SD = 1.3) versus $\bar{x} = 4.62$ (SD = 1.8)], respectively. Although significantly associated with grade performance, recruitment site was not correlated with the independent variable of total bullying victimization (i.e., the primary independent variable for research question 3). As a result, recruitment site was not controlled for in subsequent multiple regression models.

Although recruitment site was not associated with both the total bullying victimization scale score and the dependent variables, the final models in research question 3 were examined with and without the recruitment site variable to eliminate the possibility of Simpson’s paradox (Julious & Mullee, 1994; Simpson, 1951). Simpson’s paradox (or the Yule-Simpson effect) is a paradox in which an association present between the predictor and outcome variable is reversed when the groups are combined (i.e., recruitment site is not accounted for in the model; Julious & Mullee, 1994; Simpson, 1951). No evidence of Simpson’s paradox was observed after examining the final multiple regression models (research question 3) with and without the inclusion of the recruitment site variable. Given the exploratory nature of research question 3 and the study’s small sample size, recruitment site was not retained in the final models as a control variable in an effort to conserve degrees of freedom and statistical power for detecting moderating effects.

Univariate Distributions of Dependent and Independent Variables

Bullying Victimization

Table 7 presents the univariate distributions for all the dependent variables used in this study. Bullying victimization included five variables: total ($\bar{x} = 1.35$, SD = 1.13),

verbal ($\bar{x} = 2.14$, $SD = 1.57$), relational ($\bar{x} = 1.44$, $SD = 1.28$), electronic ($\bar{x} = 1.18$, $SD = 1.29$), and physical ($\bar{x} = 0.53$, $SD = 0.89$). The scales had a maximum range of 0 to 5. These values corresponded to (0) never, (1) once in the last year, (2) two or more times a year, (3) one or more times a month, (4) one or more times a week, and (5) one or more times a day. Electronic bullying victimization ($skew = 1.01$) and physical bullying victimization ($skew = 2.18$) were positively skewed and transformed using a negative reciprocal. The transformed versions of electronic and physical bullying victimization were used for parametric analyses in research question 2. All the remaining bullying victimization variables approximated a normal distribution.

Mental Health Problems

The BSI was used to assess three mental health problems: psychological distress ($\bar{x} = 1.33$, $SD = 0.74$), anxiety ($\bar{x} = 1.23$, $SD = 0.89$), and depression ($\bar{x} = 1.50$, $SD = 0.99$). The GSI was used to measure a participant's overall level of psychological distress. BSI scales have a maximum range of 0 to 4. All three variables were approximately normal in their distribution (Table 7).

Suicidal ideation was measured using two binary (yes/no) questions, which asked if the participant during the past 12 months had seriously considered attempting suicide ($n = 48$, 38.7%) and made a plan to attempt suicide ($n = 29$, 23.4%). Suicide attempts were measured by inquiring about the number of times the participant had attempted suicide during the past 12 months ($\bar{x} = 0.21$, $SD = 0.62$). The question was recoded into a binary (yes/no) variable for analytic purposes given its positively skewed distribution. In

total, 17 (13.7%) SMY reported making a suicide attempt during the last 12 months (Table 7).

Academic Outcomes

Academic outcomes were assessed using three variables: overall grades on the participant's last report card ($\bar{x} = 4.98$, $SD = 1.72$), number of school absences in the last 90 days ($\bar{x} = 2.67$, $SD = 1.86$), and number of disciplinary actions (e.g., detentions, suspensions) in the last 90 days ($\bar{x} = 0.47$, $SD = 1.41$). Disciplinary actions had an extreme positive skew ($skew = 5.92$) and was recoded into a binary variable for use with research question 3.

Table 7. Descriptive Statistics of Dependent Variables

	Mean	SD	Median	Mode	Obs. Range	Range	Skew	Kurtosis	N
Bullying Victimization									
Total	1.35	1.13	1.28	0.00	0.0-4.5	0-5	0.59	-0.16	125
Verbal	2.14	1.57	2.25	0.00	0.0-5.0	0-5	-0.02	-1.13	125
Relational	1.44	1.28	1.29	0.00	0.0-5.0	0-5	0.65	-0.35	125
Electronic	1.18	1.29	1.00	0.00	0.0-4.7	0-5	1.01	0.33	125
Electronic†	-0.63	0.32	-0.50	-1.00	-	-	-0.13	-1.68	125
Physical	0.53	0.89	0.00	0.00	0.0-4.5	0-5	2.18	4.92	125
Physical†	-0.79	0.26	-1.00	-1.00	-	-	0.85	-0.75	125
Mental Health Problems									
Psychological Distress	1.33	0.74	1.32	1.51	0.0-3.2	0-4	0.36	-0.55	125
Anxiety	1.23	0.89	1.17	1.67	0.0-3.8	0-4	0.64	-0.07	125
Depression	1.50	0.99	1.17	1.00	0.0-3.5	0-4	0.50	-0.89	125
Suicide Attempts	0.21	0.62	0.00	0.00	0.0-4.0	0-4	3.68	15.56	124
Academic Outcomes									
Grade Performance	4.98	1.72	5.00	6.00	0-7	0-7	-0.78	0.20	125
School Absences	2.67	1.86	2.00	1.00	0-6	0-6	0.57	-0.84	125
Disciplinary Actions	0.47	1.41	0.00	0.00	0-12	0-12	5.92	42.40	125
<hr/>									
	Yes		No						
	N	%	N	%					
Mental Health Problems									
Seriously Consid. Suicide	48	38.7	76	61.3	-	-	-	-	124
Made a Suicide Plan	29	23.4	95	76.6	-	-	-	-	124
Suicide Attempts+	17	13.7	107	86.3	-	-	-	-	124
Academic Outcomes									
Disciplinary Actions+	30	24.0	95	76.0	-	-	-	-	125

†Transformed using a negative reciprocal; +Recoded into a binary (yes/no) format

Individual-Level Risk and Protective Factors

The univariate distributions of the individual-level risk and protective factors were analyzed to identify any skewed distributions that may require variable transformations or the use of non-parametric statistical tests in subsequent analyses. The gender-role conformity scale ($\bar{x} = 23.22$, $SD = 9.78$) was used to assess the participant's level of gender-role conformity. The revised gender-role conformity scale had a possible range of 0-54 and was approximately normal in its distribution. The sexuality disclosure

scale ($\bar{x} = 5.83$, $SD = 1.45$) was used to measure the participant's level of sexuality disclosure to parents, close friends, and causal friends. The scale had a possible range of 0-7 and was negatively skewed ($skew = -1.21$). Spearman rho correlations (non-parametric) were used for subsequent analyses with sexuality disclosure.

Coping was measured using five forms of situational coping: detachment ($\bar{x} = 1.52$, $SD = 0.64$), keeps-to-self ($\bar{x} = 1.78$, $SD = 0.80$), problem-focused ($\bar{x} = 1.53$, $SD = 0.48$), seeking social support ($\bar{x} = 1.46$, $SD = 0.65$), and wishful thinking ($\bar{x} = 2.01$, $SD = 0.68$). All the scales had a possible range of 0 to 3 and were approximately normal in their distributions (Table 8).

Table 8. Descriptive Statistics of Individual-Level Risk and Protective Factors

Variables	Mean	SD	Median	Mode	Obs. Range	Range	Skew	Kurtosis	N
Gender-Role Conformity	23.22	9.78	22.0	22.0	0-51.0	0-54	0.48	0.04	125
Sexuality Disclosure	5.83	1.45	6.00	7.00	1.0-7.0	0-7	-1.21	0.65	125
Situational Coping									
Detachment	1.52	0.64	1.50	1.17	0.0-3.0	0-3	0.13	-0.50	123
Keeps-to-Self	1.78	0.80	2.00	2.00	0.0-3.0	0-3	-0.25	-0.69	123
Problem-Focused	1.53	0.48	1.45	1.36	0.2-2.9	0-3	0.09	0.25	123
Seeking Social Support	1.46	0.65	1.43	1.29	0.1-3.0	0-3	0.11	-0.62	123
Wishful Thinking	2.01	0.68	2.20	2.40	0.0-3.0	0-3	-0.59	-0.12	123

Family-Level Risk and Protective Factors

The univariate distributions of the family-level risk and protective factors were analyzed to identify any skewed distributions that may require variable transformations or the use of non-parametric statistical tests in subsequent analyses. This study used the CTQ, which measures three forms of child abuse and two forms of child neglect. The emotional ($\bar{x} = 12.67$, $SD = 5.50$), physical ($\bar{x} = 9.02$, $SD = 4.83$), and sexual ($\bar{x} = 8.20$,

SD = 5.51) child abuse subscales had a maximum range of 5 to 25. Similarly, the emotional ($\bar{x} = 11.66$, SD = 4.73) and physical ($\bar{x} = 7.90$, SD = 3.35) child neglect subscales had a maximum range of 5 to 25 (Table 9). Physical abuse (skew = 1.33), sexual abuse (skew = 1.81), and physical neglect (skew = 1.38) were positively skewed. Spearman rho correlations (non-parametric) were used for subsequent analyses with child abuse and neglect variables.

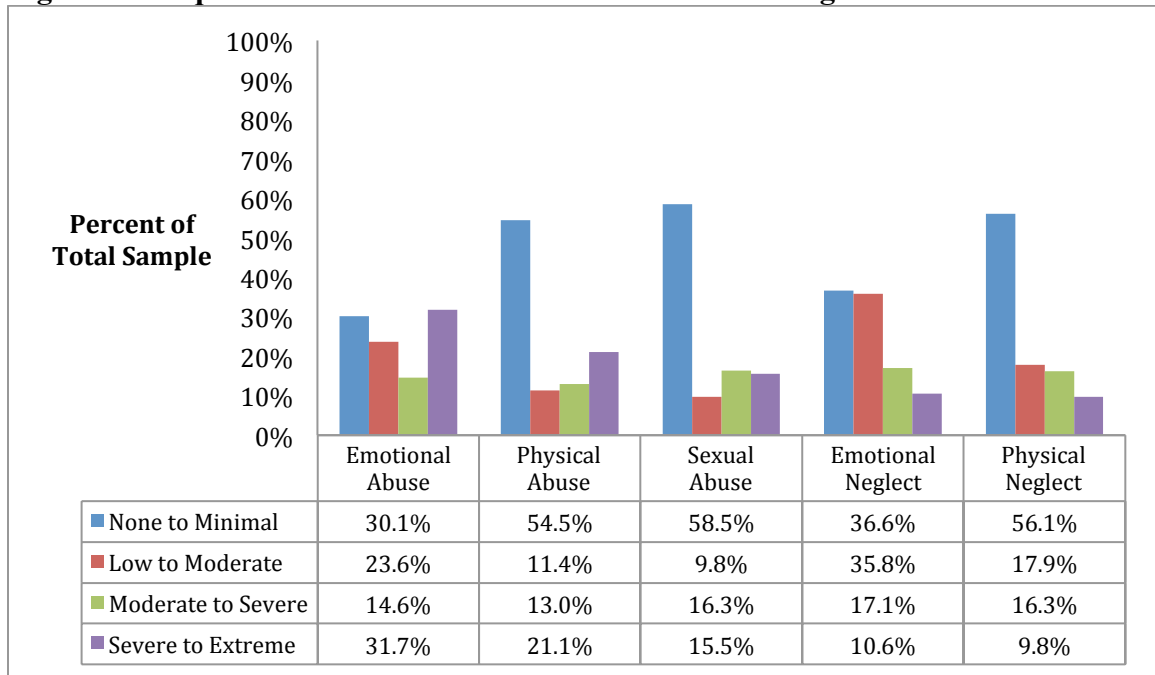
Table 9. Descriptive Statistics of Family-Level Risk and Protective Factors

Variables	Mean	SD	Median	Mode	Obs. Range	Range	Skew	Kurtosis	N
Child Abuse/Neglect									
Emotional Abuse	12.67	5.50	12.0	7.0	5-25	5-25	0.38	-0.99	123
Physical Abuse	9.02	4.83	7.0	5.0	5-25	5-25	1.33	1.01	123
Sexual Abuse	8.20	5.51	5.0	5.0	5-25	5-25	1.81	2.05	123
Emotional Neglect	11.66	4.73	11.0	5.0	5-24	5-25	0.44	-0.50	123
Physical Neglect	7.90	3.35	7.0	5.0	5-20	5-25	1.38	1.64	123
Parent Support	41.39	13.50	40.0	41.0	14-69	12-72	0.23	-0.70	123
Family Functioning	1.43	0.83	1.19	-	0.3-4.6	0-10	1.36	1.79	124
Family Functioning†	0.36	0.13	0.33	-	0.1-0.8	-	0.61	-0.10	124

†Transformed using natural log

The CTQ is a standardized measure and provides cutoff scores for child abuse and neglect to be categorized into four levels of severity: (1) none to minimal, (2) low to moderate, (3) moderate to severe, and (4) severe to extreme (Figure 4). A large percentage of SMY reported severe to extreme emotional (31.7%), physical (21.1%), and sexual (15.5%) child abuse. Similarly, 10.6% and 9.8% reported severe to extreme emotional and physical neglect, respectively.

Figure 4. Frequencies of Five Forms of Child Abuse and Neglect for SMY



The total circumplex ratio ($\bar{x} = 1.43$, $SD = 0.83$) from FACES IV was used to measure overall family functioning. The raw scores for this subscale were converted to percentile ranks. The total circumplex ratio has a theoretical range of 0 to 10. Values above 1 indicate healthy family functioning and balance. The total circumplex ratio was positively skewed ($skew = 1.36$). For research question 1, Spearman rho correlations (non-parametric) were used for subsequent analyses with family functioning. The log-transformed version of family functioning was used to test for interaction effects in research question 3 (see previous Table 9, pg. 66). Parent support ($\bar{x} = 41.39$, $SD = 13.50$) had a possible range of 12-72 and was approximately normal in its distribution.

Peer-Level Risk and Protective Factors

The univariate distributions of the peer-level risk and protective factors were analyzed to identify any skewed distributions that may require variable transformations or the use of non-parametric statistical tests in subsequent analyses. Peer support included two measures of support: friend ($\bar{x} = 54.67$, $SD = 9.66$) and classmate ($\bar{x} = 38.91$, $SD = 11.47$; Table 10). Both measures had a possible range 12 to 72. Friend and classmate support were approximately normal in their distributions.

School-Level Risk and Protective Factors

The univariate distributions of the school-level risk and protective factors were analyzed to identify any skewed distributions that may require variable transformations or the use of non-parametric statistical tests in subsequent analyses. Teacher support ($\bar{x} = 52.53$, $SD = 10.83$) had a possible range of 12 to 72 and was approximately normally distributed (Table 10). Positive school climate ($\bar{x} = 37.37$, $SD = 5.82$) had a possible range of 13 to 52, and was also approximately normal in its distribution.

Table 10. Descriptive Statistics of Peer-Level and School-Level Risk and Protective Factors

Variables	Mean	SD	Median	Mode	Obs. Range	Range	Skew	Kurtosis	N
Peer-Level									
Support									
Friend	54.67	9.66	54.0	54.0	13-72	12-72	-0.80	1.99	123
Classmate	38.91	11.47	40.0	43.0	12-67	12-72	-0.03	-0.26	123
School-Level									
Teacher Support	52.53	10.83	53.0	55.0	19-72	12-72	-0.32	0.07	123
Positive School Climate	37.37	5.82	37.0	36.0	20-50	13-52	-0.31	-0.06	123

Frequency of Bullying Victimization

Bullying Victimization

To determine the extent to which bullying victimization was endorsed, participants were asked a series of questions about their experiences with bullying victimization across their lifetime and within the last school year. When asked, “have you ever been bullied before”, 93.6% (n = 117) of SMY reported bullying victimization in their lifetime. Similarly, when asked, “have you been bullied this last school year”, 75.2% (n = 94) reported bullying victimization within the last school year.

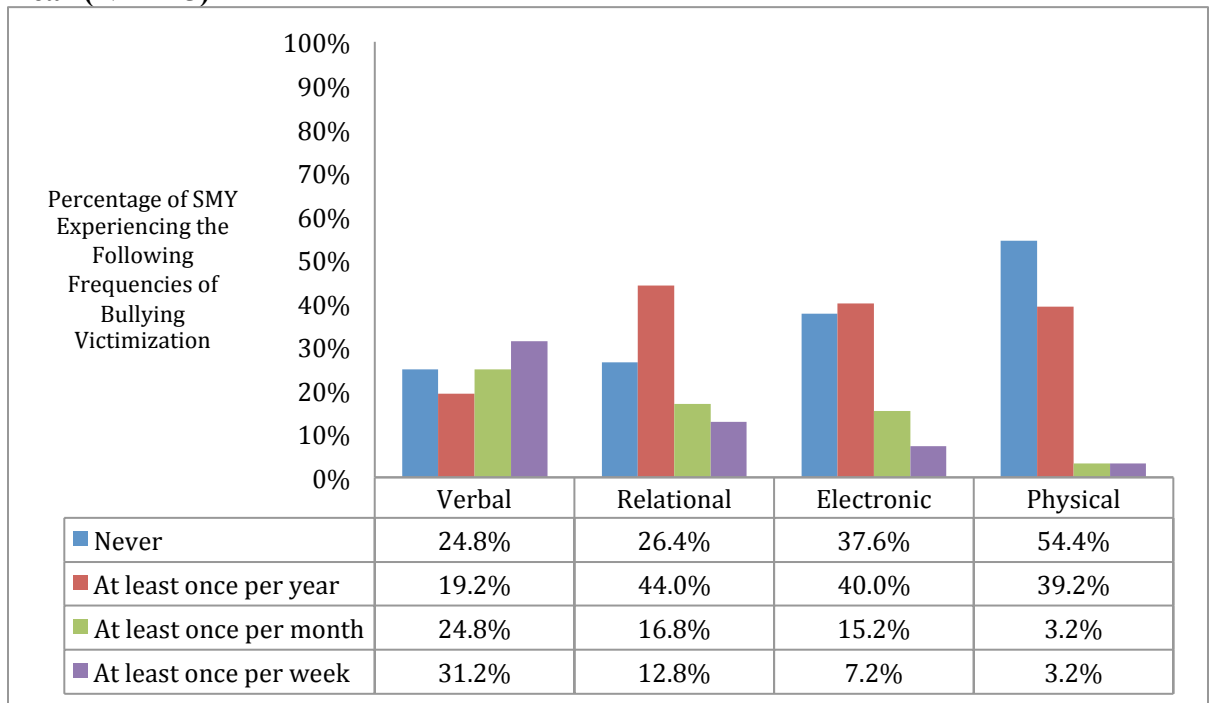
For those reporting bullying victimization within the last school year, participants were asked a series of 18 questions to measure the frequency of verbal ($\bar{x} = 2.14$, SD = 1.57), relational ($\bar{x} = 1.44$, SD = 1.28), electronic ($\bar{x} = 1.18$, SD = 1.29), and physical ($\bar{x} = 0.53$, SD = 0.89) bullying victimization (see previous Table 7, pg. 64). These 18 questions were also combined to provide a measure of total bullying victimization ($\bar{x} = 1.35$, SD = 1.13), which was used as the only measure of bullying victimization for research question 3. The response options for these 18 questions ranged from (0) never to (5) one or more times a day.

The majority of participants reported experiencing at least one incident of bullying victimization within the last school year: verbal (n = 94, 75.2%), relational (n = 92; 73.6%), electronic (n = 78, 62.4%), and physical (n = 57, 45.6%). Verbal bullying victimization was the most frequent with 70 participants (56.0%) experiencing at least one incident per month, followed by relational (n = 16, 29.6%), electronic (n = 28, 22.4%), and physical (n = 8, 6.4%). As shown in Figure 5, the majority of youths who endorsed relational (n = 55, 44.0%), electronic (n = 50, 40.0%), and physical (n = 49,

39.2%) types of bullying victimization reported experiencing it only once per year or more.

Response options for frequency of bullying victimization within the last school year were recoded for Figure 5 as follows: (1) One or more times a week and one or more times a day were collapsed into “At least once per week”, (2) One or more times a month remained coded as “At least once a month”, (3) Once in the last year and two or more times a year were collapsed into “At least once per year”, and (4) Never remained coded as never.

Figure 5. Bullying Victimization by Type and Frequency within the Last School Year (N = 125)



Demographics Differences across the Dependent Variables

The primary purpose of assessing for demographic differences across the dependent variables was to identify any potential control variables for the final multiple

regression models in research question 3. Table 11 presents the results from a series of chi-squares, Kruskal-Wallis tests, Spearman rho correlations, and logistic regressions, which were performed to identify any significant gender, race, sexual identity, and age differences across the dependent variables.⁹ In addition, a series of Spearman rho correlations and logistic regressions were performed to identify any significant associations between child abuse and neglect and the dependent variables (Table 12).

Although the study examined the influence of child abuse and neglect as a non-modifiable risk factor to bullying victimization for research question 1, previous research has found associations between child abuse and neglect and (1) bullying victimization and (2) mental health problems and academic outcomes (Friedman et al., 2011; Hawker & Boulton, 2000). Child abuse and neglect, therefore, may be an important control variable in research question 3 to determine the unique effect total bullying victimization and the potential MRPF have on mental health problems and academic outcomes.

Control variables were identified if any significant associations were found between both the total bullying victimization scale score and the dependent variables (mental health problems and academic outcomes). As previously discussed, the total bullying victimization scale score was the only bullying victimization measure used in research question 3. Overall, gender, race, sexual identity, and age were not significantly correlated with both the total bullying victimization scale score and the dependent variables (Table 11). Therefore, gender, race, sexual identity, and age were not controlled for in any of the final multiple regression models in research question 3.

⁹ For the sake of simplicity and clarity in presenting the results, non-parametric tests were used throughout to test for group differences due to the non-normality of some of the dependent variables. The PI performed parametric equivalents were appropriate and did not find any differences in the results.

Table 11. Results of Demographic Differences across the Dependent Variables

Dependent Variables	Kruskal-Wallis Test			Spearman Correlation
	Gender	Race	Sexual Identity	Age
Bullying Victimization				
Total	1.16	5.90	1.35	-0.15
Verbal	1.32	6.34*	1.52	-0.19*
Relational	1.80	3.75	0.58	-0.12
Electronic	0.86	4.75	1.28	-0.06
Physical	0.73	6.86*	2.64	-0.19*
Mental Health Problems				
Psychological Distress	4.75	4.01	4.49	-0.12
Anxiety	6.94*	3.40	5.70	0.00
Depression	0.78	3.05	4.39	-0.10
Academic Outcomes				
Grade Performance	1.44	1.30	2.18	0.06
School Absences	0.37	0.89	3.14	0.02
Disciplinary Actions	1.15	7.30*	3.61	0.07
	Chi-square Test			Logistic Regression
Suicide				
Seriously Considered	4.63	3.76	9.19*	2.13
Made a Plan	0.92	3.88	6.02*	4.25*
Attempted	4.73	4.72	3.46	3.09

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

Although gender, race, sexual identity, and age were not identified as potential control variables for research question 3, emotional child abuse was found to be significantly correlated with both the total bullying victimization scale score and the dependent variables of psychological distress, anxiety, depression, seriously considered suicide, made a suicide plan, attempted suicide, and grade performance (Table 12). Specifically, higher levels of emotional child abuse were associated with higher levels of total bullying victimization [$r_s(123) = 0.20, p < .05$], psychological distress [$r_s(123) = 0.38, p < .001$], anxiety [$r_s(123) = 0.26, p < .01$], and depression [$r_s(123) = 0.28, p < .01$].

In addition, higher levels of emotional child abuse were associated with greater odds of having seriously considered suicide [$\chi^2(1) = 7.34, p < .01$; Odds Ratio = 1.10 (95% CI: 1.02, 1.18)], made a suicide plan [$\chi^2(1) = 9.65, p < .01$; Odds Ratio = 1.13 (95% CI: 1.04, 1.23)], and attempted suicide [$\chi^2(1) = 6.44, p < .05$; Odds Ratio = 1.13 (95% CI: 1.03, 1.24)] in the last 12 months. Last, higher levels of emotional child abuse were associated with lower grade performance [$r_s(123) = -0.34, p < .01$]. Emotional child abuse was not associated with school absences and disciplinary actions. Overall, emotional child abuse was used as a control variable for the final multiple regression models for research question 3 except for school absences and disciplinary actions.

Table 12. Results of Child Abuse and Neglect across the Dependent Variables

Dependent Variables	Child Abuse/Neglect (Spearman Correlations)				
	Emotional Abuse	Physical Abuse	Sexual Abuse	Emotional Neglect	Physical Neglect
Bullying Victimization					
Total	0.20*	0.11	0.17	-0.04	0.03
Verbal	0.22*	0.15	0.18*	-0.03	0.01
Relational	0.19*	0.05	0.12	-0.07	-0.01
Electronic	0.23**	0.10	0.17	-0.04	0.08
Physical	0.11	0.20*	0.25**	-0.01	0.08
Mental Health Problems					
Psychological Distress	0.38***	0.33***	0.27**	0.12	0.19*
Anxiety	0.26**	0.21*	0.16	0.06	0.19*
Depression	0.28**	0.31***	0.23*	0.13	0.15
Academic Outcomes					
Grade Performance	-0.34***	-0.44***	-0.37***	-0.16	-0.11
School Absences	0.09	0.15	0.25**	0.07	0.03
Disciplinary Actions	0.10	0.21*	0.38***	0.00	-0.08
	Logistic Regression (Odds Ratios)				
Suicide					
Seriously Considered	1.10**	1.11**	1.08*	1.06	0.98
Made a Plan	1.13**	1.09*	1.11**	1.09	1.00
Attempted	1.13*	1.09	1.18***	1.05	0.94

Although gender was not identified as a control variable for research question 3, a Kruskal-Wallis test revealed a significant gender difference on anxiety [$\chi^2(2, N = 125) = 6.94, p < .05$]. Pairwise comparisons were examined using a Dunn's post-hoc test with an alpha of .05 (Elliott & Hynan, 2011). No significant pairwise comparisons were found utilizing an alpha level of .05. However, pairwise comparisons between (1) transgender and male and (2) female and male approached statistical significance ($p < .10$), with female ($\bar{x} = 1.42, SD = 1.0$) and transgender ($\bar{x} = 1.62, SD = 0.7$) SMY reporting higher levels of anxiety compared to sexual minority males ($\bar{x} = 1.03, SD = 0.8$). Table 13 presents the means and standard deviations for the dependent variables stratified by the demographic characteristics.

Table 13. Means and Standard Deviations of Bullying Victimization, Mental Health Problems, and Academic Outcomes by Gender, Race, and Sexual Identity

Dependent Variables	Gender: Mean (SD)			Race/Ethnicity: Mean (SD)			Sexual Identity: Mean (SD)		
	Female	Male	Trans-gender	African American	Caucasian	HNAM	Gay/Lesbian	Bisexual	QQPO
Bullying Victimization									
Total	1.27 (1.2)	1.42 (1.2)	1.46 (0.9)	0.89 (1.0)	1.20 (1.0)	1.85 (1.4)	1.32 (1.2)	1.57 (1.2)	1.23 (0.7)
Verbal	2.00 (1.6)	2.26 (1.6)	2.29 (1.4)	1.69 (1.5)	2.05 (1.5)	2.87 (1.8)	2.05 (1.7)	2.47 (1.7)	2.07 (1.1)
Relational	1.31 (1.3)	1.55 (1.4)	1.64 (1.1)	1.07 (1.3)	1.39 (1.2)	1.98 (1.6)	1.41 (1.4)	1.64 (1.4)	1.35 (0.8)
Electronic	1.27 (1.4)	1.07 (1.3)	1.18 (0.9)	0.74 (1.2)	1.14 (1.1)	1.71 (1.8)	1.13 (1.4)	1.40 (1.4)	1.12 (0.9)
Physical	0.46 (0.8)	0.61 (1.0)	0.54 (0.7)	0.22 (0.5)	0.46 (0.7)	1.10 (1.4)	0.58 (1.0)	0.67 (0.8)	0.27 (0.4)
Mental Health Problems									
Psychological Distress	1.46 (0.8)	1.16 (0.7)	1.46 (0.5)	1.26 (0.6)	1.28 (0.8)	1.62 (0.7)	1.22 (0.7)	1.58 (0.9)	1.42 (0.7)
Anxiety	1.42 (1.0)	1.03 (0.8)	1.62 (0.7)	0.94 (0.7)	1.31 (0.9)	1.48 (0.9)	1.13 (0.8)	1.44 (1.1)	1.59 (0.9)
Depression	1.57 (1.0)	1.41 (1.0)	1.47 (0.8)	1.51 (1.0)	1.42 (1.0)	1.81 (1.0)	1.35 (0.9)	1.87 (1.1)	1.58 (1.0)
Academic Outcomes									
Grade Performance	4.89 (1.8)	5.14 (1.8)	4.77 (1.4)	5.22 (1.2)	5.05 (1.7)	4.48 (2.1)	5.09 (1.7)	4.54 (1.7)	5.04 (1.7)
School Absences	2.69 (1.9)	2.73 (1.8)	2.38 (1.9)	2.56 (1.8)	2.58 (1.8)	3.14 (2.2)	2.79 (1.9)	2.96 (2.0)	2.08 (1.6)
Disciplinary Actions	0.26 (0.5)	0.78 (2.1)	0.23 (0.4)	1.44 (3.2)	0.23 (0.6)	0.62 (0.9)	0.53 (1.5)	0.67 (1.7)	0.12 (0.3)
	Gender: N (Frequency %)			Race: N (Frequency %)			Sexual Identity: N (Frequency %)		
	Female	Male	Trans-gender	African American	White	HNAM	Gay/Lesbian	Bisexual	QQPO
Suicide									
Seriously Considered	28 (46.7)	14 (27.5)	6 (46.2)	7 (38.9)	29 (34.1)	12 (57.1)	21 (28.0)	13 (54.2)	14 (56.0)
Made a Plan	16 (26.7)	11 (21.6)	2 (15.4)	5 (27.8)	17 (20.0)	7 (33.3)	13 (7.3)	10 (41.7)	6 (24.0)
Attempted	12 (20.0)	5 (9.8)	0 (0.0)	2 (11.1)	9 (10.6)	6 (28.6)	9 (12.0)	6 (25.0)	2(8.0)

In addition to gender, a consistent pattern was observed in the findings with African American SMY reporting the lowest frequency of bullying victimization followed by Caucasian and HNAM. This pattern was observed across the total measure of bullying victimization and all four types. The Kruskal-Wallis tests revealed a statistically significant racial/ethnic difference on verbal [$\chi^2(2, N = 125) = 6.34, p < .05$] and physical [$\chi^2(2, N = 125) = 6.86, p < .05$] bullying victimization. The pairwise comparisons between race/ethnicity and physical bullying victimization were statistically significant ($p < .05$), while the pairwise comparisons between race/ethnicity and verbal bullying victimization approached statistical significance ($p < .10$). The results indicated African American ($\bar{x} = 0.22, SD = 0.5$) and Caucasian ($\bar{x} = 0.46, SD = 0.7$) experienced a statistically lower frequency of physical bullying victimization compared to SMY in the HNAM group ($\bar{x} = 1.10, SD = 1.4$). The pairwise comparison approached statistical significance suggesting African American ($\bar{x} = 1.69, SD = 1.5$) and Caucasian ($\bar{x} = 2.05, SD = 1.5$) may also experience a lower frequency of verbal bullying victimization compared to SMY in the HNAM group ($\bar{x} = 2.87, SD = 1.8$).

In addition to bullying victimization, a Kruskal-Wallis test revealed a statistical significant racial/ethnic difference on disciplinary actions [$\chi^2(2, N = 125) = 7.30, p < .05$]. The Dunn's post hoc pairwise comparisons between racial/ethnic and disciplinary actions approached statistical significance ($p < .10$). The pairwise comparisons suggested Caucasian ($\bar{x} = 0.23, SD = 0.6$) SMY experience a lower frequency of disciplinary actions compared to their African American counterparts ($\bar{x} = 1.44, SD = 3.2$). The lack of statistical significance across the pairwise comparisons ($p < .05$) was most likely due to

differences in the standard deviations between the racial/ethnic groups and the more conservative nature of the Dunn's post hoc test (Elliott & Hynan, 2011).

A consistent pattern was also observed in the findings in relation to sexual identity. Bisexual youths consistently reported (non-statistically significant) the highest frequency of bullying victimization (total and type) in comparison to gay/lesbian and QQPO youths (see previous Table 13, pg. 75). Further, bisexual youths reported (non-statistically significant) higher levels of psychological distress, anxiety, and depression compared to gay/lesbian youths. Chi-square analyses revealed significant associations between sexual identity and two mental health problem variables: seriously considered suicide [$\chi^2(2, N = 124) = 9.19, p < .05$] and made a suicide plan [$\chi^2(2, N = 124) = 6.02, p < .05$]. Overall, more bisexual (54.2%) and QQPO (56.0%) youths reported seriously considering suicide in the last 12 months in comparison to gay/lesbian youths (28.0%). Likewise, 41.7% of the bisexual youths in the sample reported making a suicide plan in the last 12 months in comparison to 24.0% of QQPO and 7.3% of gay/lesbian youths.

Significant Spearman rho correlations were found between age and verbal [$r_s(125) = -0.19, p < .05$] and physical [$r_s(125) = -0.19, p < .05$] bullying victimization. The frequency of verbal and physical bullying victimization significantly decreased as SMY grew older. In addition, age was also associated with a significantly higher odds of having made a suicide plan within the last 12 months [$\chi^2(2) = 4.25, p < .05$; Odds Ratio = 1.42 (95% CI: 1.01, 2.0)].

In addition to the utilization of emotional child abuse as a control variable for research question 3, significant associations were observed for physical child abuse, sexual child abuse, and physical neglect across the dependent variables (see previous

Table 12, pg. 73). Higher levels of physical child abuse were associated with greater levels of physical bullying victimization [$r_s(123) = 0.20, p < .05$], psychological distress [$r_s(123) = 0.33, p < .001$], anxiety [$r_s(123) = 0.21, p < .05$], depression [$r_s(123) = 0.31, p < .001$], and disciplinary actions [$r_s(123) = 0.21, p < .05$]. Furthermore, higher levels of physical child abuse were significantly associated with higher odds of having seriously considered suicide [$\chi^2(1) = 7.45, p < .01$; Odds Ratio = 1.11 (95% CI: 1.03, 1.20)] and made a suicide plan [$\chi^2(1) = 4.53, p < .05$; Odds Ratio = 1.09 (95% CI: 1.01, 1.19)] in the last 12 months. Physical child abuse was also associated with lower grade performance [$r_s(123) = -0.44, p < .001$].

In addition to physical child abuse, higher levels of sexual child abuse were associated with greater levels of verbal bullying victimization [$r_s(123) = 0.18, p < .05$], physical bullying victimization [$r_s(123) = 0.25, p < .01$], psychological distress [$r_s(123) = 0.27, p < .01$], depression [$r_s(123) = 0.23, p < .05$], school absences [$r_s(123) = 0.25, p < .01$], and disciplinary actions [$r_s(123) = 0.38, p < .001$]. Likewise, higher levels of sexual child abuse were significantly associated with higher odds of having seriously considered suicide [$\chi^2(1) = 5.03, p < .05$; Odds Ratio = 1.08 (95% CI: 1.01, 1.16)], made a suicide plan [$\chi^2(1) = 8.99, p < .01$; Odds Ratio = 1.11 (95% CI: 1.04, 1.19)], and attempted suicide [$\chi^2(1) = 16.14, p < .001$; Odds Ratio = 1.18 (95% CI: 1.09, 1.27)] in the last 12 months. Similar to physical child abuse, higher levels of sexual child abuse were significantly associated with lower grade performance [$r_s(123) = -0.37, p < .001$].

Last, physical neglect was significantly associated with two dependent variables: psychological distress [$r_s(123) = 0.19, p < .05$] and anxiety [$r_s(123) = 0.19, p < .05$].

Emotional neglect was not associated with any of the dependent variables.

Research Question 1

1. What are the associations between risk and protective factors (i.e., demographics, gender-role conformity, sexuality disclosure, forms of situational coping, child abuse and neglect, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) and the frequencies of total and four types of bullying victimization (i.e., verbal, relational, electronic, and physical)?

To answer research question 1, non-parametric, Spearman rho correlations were performed to identify the presence of any significant bivariate associations between (a) the risk and protective factors and (b) the frequency of total and four types of bullying victimization. For the sake of simplicity and clarity in presenting the results, non-parametric tests were used throughout to test for group differences due to the non-normality of some of the independent and dependent variables. The PI performed parametric equivalents where appropriate and found no differences in the results in regards to statistical significance and non-significance. These relationships were examined by social ecological level, and are presented below in the following order: individual-level, family-level, peer-level, and school-level.

Individual-Level Risk and Protective Factors

At the individual-level, risk and protective factors for bullying victimization included: demographic characteristics (sex, race/ethnicity, sexual identity, and age), gender-role conformity, sexuality disclosure, two active forms of situational coping

(problem-focused and seeking social support), and three passive forms of situation coping (detachment, keeps-to-self, and wishful thinking). Spearman rho correlations were calculated to measure the magnitude and direction of the relationships between the individual-level risk and protective factors and bullying victimization by total and type (Table 14).

Based on past research with SMY, the study proposed several hypotheses based on demographic characteristics. First, gender is a known risk factor for bullying victimization. Sexual minority males were hypothesized to report a greater frequency of physical and verbal bullying victimization than females (D'Augelli et al., 2002; Rivers, 2001; Russell & Joyner, 2001). Sexual minority females, however, were hypothesized to report more relational bullying victimization than their male counterparts (Rivers, 2001). As presented previously under the section entitled "Demographic Differences across the Dependent Variables", Kruskal-Wallis tests indicated no support for these hypotheses, as no significant gender differences were found across any of the bullying victimization variables (see previous Table 11, pg. 72). Similar to gender, no significant sexual identity differences were found across any of the bullying victimization variables. The findings did not support the hypothesis that bisexual and/or questioning youths were more likely to report higher frequencies of bullying victimization in comparison to their gay and lesbian identified peers (Birkett et al., 2009).

Although no formal hypotheses were proposed for race/ethnicity, Kruskal-Wallis tests revealed significant racial/ethnic group differences for verbal [$\chi^2(2, N = 125) = 6.34, p < .05$] and physical [$\chi^2(2, N = 125) = 6.86, p < .05$] bullying victimization (see previous Table 11, pg. 72). The Dunn's post hoc pairwise comparisons significantly ($p <$

.05) indicated African American ($\bar{x} = 0.22$, $SD = 0.5$) and Caucasian ($\bar{x} = 0.46$, $SD = 0.7$) youths experienced a significantly lower frequency of physical victimization compared to the HNAM group ($\bar{x} = 1.10$, $SD = 1.4$; see previous Table 13, pg. 75). For verbal bullying victimization, the Dunn's post hoc pairwise comparisons approached statistical significance ($p < .10$) suggesting African American ($\bar{x} = 1.69$, $SD = 1.5$) and Caucasian ($\bar{x} = 2.05$, $SD = 1.5$) youths may also experience a lower frequency of verbal bullying victimization compared to the HNAM group ($\bar{x} = 2.87$, $SD = 1.8$; see previous Table 13, pg. 75).

The study hypothesized that age was significantly associated with a lower frequency of bullying victimization (Perry et al., 2001; Pilkington & D'Augelli, 1995). As presented previously under the section entitled "Demographic Differences across the Dependent Variables", Spearman rho correlations were used to identify significant associations between age and (1) verbal bullying victimization [$r_s(125) = -0.19$, $p < .05$] and (2) physical bullying victimization [$r_s(125) = -0.19$, $p < .05$]. In other words, the frequency of verbal and physical bullying victimization significantly decreased, as SMY grew older. Age, however, was not significantly associated with relational and electronic bullying victimization.

In addition to demographic characteristics, the study also hypothesized that higher levels of gender-role conformity and active forms of situational coping (problem-focused and seeking social support) would be associated with lower levels of bullying victimization (Graham & Juvonen, 2001; Kochenderfer-Ladd & Ladd, 2001). No significant associations were found between gender-role conformity and bullying victimization by total or type (Table 14). Consistent findings, however, were found in

that active forms of situational coping (problem-focused and seeking social support) were significantly associated with bullying victimization, but not in the anticipated direction. Higher frequencies of total [$r_s = .31, p < .001$], verbal [$r_s = .31, p < .001$], relational [$r_s = .33, p < .001$], and physical [$r_s = .24, p < .01$] bullying victimization were associated with greater use of problem-focused coping. Similarly, higher frequencies of total [$r_s = .26, p < .01$], verbal [$r_s = .25, p < .01$], relational [$r_s = .24, p < .01$], electronic [$r_s = .21, p < .05$], and physical [$r_s(123) = .20, p < .05$] bullying victimization were associated with higher levels of seeking social support coping (Table 14).

Higher levels of sexuality disclosure and passive forms of situation coping (detachment, keeps-to-self, and wishful thinking) were hypothesized to be associated with higher frequencies of bullying victimization by total and type (Diamond & Lucas, 2004; Graham & Juvonen, 2001; Kochenderfer-Ladd & Ladd, 2001). No significant associations were found between these factors and bullying victimization (Table 14).

Table 14. Results of Spearman Correlations between Bullying Victimization and Individual-Level Risk and Protective Factors

Variable	Total	Verbal	Relational	Electronic	Physical
Age	-0.15	-0.19*	-0.12	-0.06	-0.19*
Gender Conformity	-0.08	-0.06	-0.08	-0.05	-0.12
Sexuality Disclosure	-0.03	-0.04	-0.03	0.00	-0.08
Situational Coping					
Detachment	0.13	0.13	0.15	0.14	0.16
Keeps-to-Self	0.11	0.11	0.11	0.11	0.18*
Problem-Focused	0.31***	0.31***	0.33***	0.17	0.24**
Seeking Social Support	0.26**	0.25**	0.24**	0.21*	0.20*
Wishful Thinking	0.10	0.07	0.13	0.14	0.13

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

Family-Level Risk and Protective Factors

The study examined the associations between family-level risk and protective factors and bullying victimization (total and type): three forms of child abuse (emotional, physical, and sexual), two forms of child neglect (emotional and physical), family functioning, and parent support. The measure of the magnitude and direction of the relationships between family-level risk and protective factor and bullying victimization (total and type) were calculated using Spearman rho correlations (Table 15).

The study hypothesized that child abuse and neglect would be associated with higher levels of total and four types of bullying victimization. Emotional child abuse was significantly associated with all bullying victimization variables except for physical: total [$r_s = .21, p < .05$], verbal [$r_s = .22, p < .05$], relational [$r_s = .19, p < .05$], and electronic [$r_s = .23, p < .01$] bullying victimization. Physical child abuse was significantly associated with physical bullying victimization only [$r_s = .20, p < .05$], while sexual child abuse was significantly associated with verbal [$r_s = .18, p < .05$] and physical [$r_s = .25, p < .01$] bullying victimization.

The findings were consistent in that as child abuse increased so did the frequency of bullying victimization. No significant associations were found between forms of child neglect and bullying victimization by total or type. This study also hypothesized that higher levels of family functioning and parent support would be associated with lower frequencies of bullying victimization (Rigby, 1993, 1994). These hypotheses were not supported, as no significant associations were found between these variables.

Table 15. Results of Spearman Correlations between Bullying Victimization and Family-Level Risk and Protective Factors

Variable	Total	Verbal	Relational	Electronic	Physical
Child Abuse/Neglect					
Emotional Abuse	0.21*	0.22*	0.19*	0.23**	0.11
Physical Abuse	0.11	0.15	0.05	0.10	0.20*
Sexual Abuse	0.17	0.18*	0.12	0.17	0.25**
Emotional Neglect	-0.04	-0.03	-0.07	-0.04	-0.01
Physical Neglect	0.02	-0.01	-0.01	0.08	0.08
Family Functioning	-0.05	-0.07	-0.04	-0.05	-0.07
Parent Support	-0.05	-0.01	-0.03	-0.08	-0.05

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

Peer-Level Risk and Protective Factors

At the peer-level, the study included friend support and classmate support as possible protective factors. Spearman rho correlations were calculated to assess the magnitude and direction of the relationship between (a) peer-level risk and protective factors and (b) total and four types of bullying victimization (Table 16). The study hypothesized that higher levels of friend support and classmate support would be associated with lower frequencies of total and four types of bullying victimization (Hodges et al., 1997). Consistent with this hypothesis, a higher level of classmate support was significantly associated with a lower frequency of total [$r_s = -.25, p < .01$], verbal [$r_s = -.20, p < .05$], relational [$r_s = -.22, p < .05$], and physical [$r_s = -.35, p < .001$] bullying victimization. In other words, participants who reported higher levels of classmate support reported less bullying victimization across the aforementioned types. No significant associations were found between friend support and bullying victimization by total or type.

Table 16. Results of Spearman Correlations between Bullying Victimization and Peer-Level Risk and Protective Factors

Variable	Total	Verbal	Relational	Electronic	Physical
Friend Support	0.07	0.10	0.05	0.05	0.05
Classmate Support	-0.25**	-0.20*	-0.22*	-0.16	-0.35***

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

School-Level Risk and Protective Factors

At the school-level, the study included teacher support and positive school climate as possible protective factors. The magnitude and direction of the relationship between school-level protective factors and bullying victimization (total and type) were assessed using Spearman rho correlations (Table 17).

The study hypothesized that higher levels of teacher support and positive school climate would be significantly associated with lower frequencies of total and four types of bullying victimization (Goodenow et al., 2006). No significant associations were found between teacher support and bullying victimization by total or type. However, significant associations were found between positive school climate and the frequency of total [$r_s = -.22, p < .05$], verbal [$r_s = -.19, p < .05$], relational [$r_s = -.19, p < .05$], and physical [$r_s = -.22, p < .05$] bullying victimization. The findings were consistent in that SMY who reported higher levels of positive school climate also experienced lower frequencies of all types of bullying victimization except for electronic.

Table 17. Results of Spearman Correlations between Bullying Victimization and School-Level Risk and Protective Factors

Variable	Total	Verbal	Relational	Electronic	Physical
Teacher Support	-0.08	-0.10	-0.05	-0.07	-0.05
Positive School Climate	-0.22*	-0.19*	-0.19*	-0.17	-0.22*

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

Summary of Research Question 1

Significant risk and protective factors for bullying victimization (total and type) were found across all four social ecological levels. At the individual-level, racial/ethnic group differences were found such that African American and Caucasian SMY reported lower levels of verbal ($p < .10$) and physical ($p < .05$) bullying victimization in comparison to youths in the HNAM group. Further, the frequency of verbal and physical bullying victimization significantly decreased with age.

In addition to demographic characteristics, higher-levels of active forms of situational coping (problem-focused and seeking social support) were hypothesized to be associated with lower frequencies of bullying victimization. Significant associations were found between these variables, but in the opposite direction hypothesized. Specifically, higher-levels of problem-focused and seeking social support were associated with higher frequencies of bullying victimization. No support was found for higher levels of gender-role conformity being associated with lower frequencies of bullying victimization. Further, higher levels of sexuality disclosure and passive forms of situational coping (i.e., detachment, keeps-to-self, and wishful thinking) were not associated with higher frequencies of bullying victimization by type or total.

As hypothesized at the family-level, child abuse was significantly associated with bullying victimization. Specifically, as emotional child abuse increased, so did the frequency of total, verbal, relational, and electronic bullying victimization. Likewise, higher levels of physical child abuse were associated with increased physical bullying victimization, while higher-levels of sexual child abuse were associated with an increased frequency of verbal and physical bullying victimization. No support was found for higher

levels of child neglect predicting higher frequencies of bullying victimization. Further, higher levels of parent support and family functioning were not associated with higher frequencies of bullying victimization by type or total.

At the peer-level, classmate support was found to be a protective factor against bullying victimization. SMY who reported higher levels of classmate support also reported lower frequencies of total, verbal, relational, and physical bullying victimization. No support was found for higher levels of friend support and lower levels of bullying victimization by total or type.

Last, at the school-level, positive school climate was also found to be a protective factor against bullying victimization. SMY who reported higher levels of positive school climate experienced lower frequencies of total, verbal, relational, and physical bullying victimization. No support was found for higher levels of teacher support and lower levels of bullying victimization by total or type.

Research Question 2

2. What are the associations between the frequencies of total and four types of bullying victimization and mental health problems and academic outcomes?

Mental Health Problems: Psychological Distress, Anxiety, and Depression

Prior to conducting bivariate correlations with the continuous independent and dependent variables, a series of multivariate regressions were performed to estimate a single model regressing *multiple* dependent variables (psychological distress, anxiety, and depression) on each bullying victimization variable (total and all types). Multivariate

regression was performed prior to the bivariate analyses to help address the concern of making a type 1 error when conducting multiple pairwise tests. If the multivariate regression models were statistically significant, Pearson correlations were performed to identify the significant bivariate relationships within each multivariate regression model.

Significant multivariate regression models were found for psychological distress, anxiety, and depression regressed on total [$F(3, 121) = 7.05, p < .001$], verbal [$F(3, 121) = 6.20, p < .001$], relational [$F(3, 121) = 6.03, p < .001$], electronic [$F(3, 121) = 4.60, p < .01$], and physical [$F(3, 121) = 8.02, p < .001$] bullying victimization. To identify the significant bivariate relationships within each model, Table 18 presents a correlation matrix of bullying victimization (total and type) by psychological distress, anxiety, and depression. The findings were uniformly consistent and indicated significant bivariate relationships across all measures of bullying victimization and mental health problems. Higher frequencies of bullying victimization (total and all types) were associated with higher levels of psychological distress, anxiety, and depression.

The magnitude of the bivariate relationships also indicated a consistent pattern across bullying victimization types with physical bullying victimization having the strongest associations with psychological distress, anxiety, and depression. Electronic bullying victimization had the weakest associations with these mental health problem variables. The magnitude of the associations for verbal and relational bullying victimization to psychological distress, anxiety, and depression were the same across all three mental health problem variables, and fell between physical and electronic in regards to their magnitude.

Table 18. Results of Correlations Between Bullying Victimization and Mental Health Problems

	Bullying Victimization					Mental Health Problems		
	Total	Verbal	Relational	Electronic	Physical	Psych. Distress	Anxiety	Depression
Total	1.00							
Verbal	0.92***	1.00						
Relational	0.96***	0.83***	1.00					
Electronic	0.80***	0.77***	0.73***	1.00				
Physical	0.81***	0.72***	0.73***	0.54***	1.00			
Psych. Distress	0.38***	0.36***	0.36***	0.31***	0.40***	1.00		
Anxiety	0.32***	0.31***	0.31***	0.26**	0.33***	0.88***	1.00	
Depression	0.35***	0.34***	0.34***	0.31**	0.37***	0.86***	0.69***	1.00

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

Mental Health Problems: Suicidal Ideation and Suicide Attempts

To assess the magnitude and direction of the relationships between bullying victimization (total and type) and indicators of suicidal ideation and suicide attempts (seriously considered suicide, made a suicide plan, and attempted suicide), simple logistic regressions were performed. No equivalent to multivariate regression exists to regress multiple binary dependent variables onto one or more predictor variables to control for experimentwise error rate.

The frequency of total and four types of bullying victimization were associated with a significantly higher odds of having seriously considered attempting suicide within the last 12 months (Table 19). In other words, SMY who reported higher frequencies of bullying victimization had a higher odds (1.44-1.68) of indicating they had seriously considered attempting suicide within the last 12 months. Similarly, the frequency of total and four types of bullying victimization were significantly associated with a higher odds (1.48-1.95) of having had attempted suicide in the last 12 months. No significant

associations were found between bullying victimization by total or type and having made a suicide plan in the last 12 months.

Physical bullying victimization had the strongest association to both seriously considered suicide (odds ratio = 1.56) and attempted suicide (odds ratio = 1.95) in comparison to the other types of bullying victimization. For every unit increase on the physical bullying victimization scale (e.g., “one or more times a month” to “one or more times a week”), the odds of having seriously considered suicide in the last 12 months increased by 56% followed by relational (50%), verbal (49%), and electronic (44%). Similarly, every unit increase on the physical bullying victimization scale, the odds of having attempted suicide in the last 12 months increased by 95% followed by electronic (71%), verbal (62%), and relational (48%).

Table 19. Results of Logistic Regression Models of Suicidal Ideation and Suicide Attempts by Frequency of Bullying Victimization [Odds Ratios and 95% Confidence Interval]

	Seriously considered suicide	Made a suicide plan	Attempted suicide
Total	1.68** [1.2, 2.4]	1.18 [0.8, 1.7]	1.85** [1.2, 2.9]
Verbal	1.49** [1.2, 1.9]	1.21 [0.9, 1.6]	1.62* [1.1, 2.4]
Relational	1.50** [1.1, 2.0]	1.10 [0.8, 1.5]	1.48* [1.0, 2.2]
Electronic	1.44* [1.1, 1.9]	0.99 [0.7, 1.4]	1.71** [1.2, 2.5]
Physical	1.56* [1.0, 2.4]	1.35 [0.9, 2.1]	1.95** [1.2, 3.1]

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

Academic Outcomes

A series of multivariate regressions were performed to estimate a single model regressing *multiple* dependent variables (grade performance and school absences) on each bullying victimization variable (total and all types). Multivariate regression was performed prior to the bivariate analyses to help address the concern of making a type 1 error when conducting multiple pairwise tests. If the multivariate regression models were statistically significant, Pearson correlations were performed to identify which bivariate relationships were significant within each multivariate regression model. Spearman rho correlations were calculated to assess the direction and magnitude of the associations between bullying victimization (total and type) and disciplinary actions, because of the extreme positive skewness of the dependent variable.

Significant multivariate regression models were found for grade performance and school absences regressed on total [$F(2, 122) = 4.65, p < .05$], verbal [$F(2, 122) = 2.60, p < .10$], relational [$F(2, 122) = 3.59, p < .05$] and physical [$F(2, 122) = 7.59, p < .001$] bullying victimization. To identify the significant bivariate relationships within each model, Table 20 presents a correlation matrix of bullying victimization (total and type) by grades and school absences. Grade performance was significantly associated with total [$r = -.26, p < .01$], verbal [$r = -.20, p < .05$]¹¹, relational [$r = -.24, p < .01$], and physical [$r = -.33, p < .001$] bullying victimization. As the frequency of total, verbal, relational, and physical victimization increased, SMY reported significantly lower levels of grade performance. School absences were not associated with bullying victimization by total or type.

¹¹ The multivariate regression for verbal bullying victimization was not statistical significant ($p=.078$). The bivariate relationship between verbal bullying victimization and grade performance was significant and reported above.

Disciplinary actions were positively associated with total [$r_s = .23, p < .01$], verbal [$r_s = .21, p < .05$], relational [$r_s = .23, p < .05$], and physical [$r_s = .24, p < .01$] bullying victimization. As the frequency of total, verbal, relational, or physical bullying victimization increased, SMY reported significantly more disciplinary actions.

Similar to the mental health problem variables, physical bullying victimization had the strongest association to grade performance ($r = -.33$) followed by relational ($r = -.24$) and verbal ($r = -.20$). The strength of the associations was approximately the same for disciplinary actions and verbal, relational, and physical bullying victimization. Electronic bullying victimization was consistently not associated with any of the academic outcomes.

Table 20. Results of Correlations Between Bullying Victimization (Type and Total) and Academic Problems

	Bullying Victimization					Academic Problems		
	Total	Verbal	Relational	Electronic	Physical	Grades	Absences	Discip. Actions
Total	1.00							
Verbal	0.92***	1.00						
Relational	0.96***	0.83***	1.00					
Electronic	0.80***	0.77***	0.73***	1.00				
Physical	0.81***	0.72***	0.73***	0.54***	1.00			
Grades	-0.26**	-0.20*	-0.24**	-0.14	-0.33***	1.00		
Absences	0.12	0.07	0.10	0.04	0.10	-0.35***	1.00	
Discip. Actions	0.23**	0.21*	0.23*	0.15	0.24**	-0.32***	0.31***	1.00

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

Summary of Research Question 2

Research question 2 hypothesized that higher frequencies of total and four types of bullying victimization would be associated with increased mental health problems and poorer academic outcomes. For mental health problems, the findings were consistent and supported the hypotheses. Higher frequencies of total and four types of bullying victimization were associated with higher levels of psychological distress, anxiety, and

depression. Physical bullying victimization had the strongest associations with psychological distress, anxiety, and depression in comparison to verbal, relational, and electronic. Overall, electronic bullying victimization had the weakest associations across these three mental health problem variables.

In addition to psychological distress, anxiety, and depression, higher frequencies of bullying victimization (type and total) were significantly associated with increased odds of having (1) seriously considered suicide in the last 12 months and (2) attempted suicide in the last 12 months. The hypothesis for an increased likelihood of having made a suicide plan in the last 12 months was not supported. Similar to psychological distress, anxiety, and depression, physical bullying victimization was the strongest predictor for both seriously considered suicide and attempted suicide in comparison to the other types of bullying victimization.

In agreement with the academic outcome hypotheses, lower levels of grade performance and higher levels of disciplinary actions were also significantly associated with higher frequencies of total and all types of bullying victimization except for electronic bullying victimization. School absences were not associated with the frequency of bullying victimization by total or type. Similar to mental health problems, physical bullying victimization was the strongest predictor of grade performance followed by relational and verbal bullying victimization. The strength of the associations was roughly the same for disciplinary actions across verbal, relational, and physical bullying victimization. Overall, electronic bullying victimization was consistently not associated with any of the academic outcomes.

Research Question 3

3. To what extent do *modifiable* risk and protective factors (i.e., forms of situational coping, family functioning, parent support, friend support, classmate support, teacher support, and positive school climate) moderate the association between total bullying victimization and mental health problems and academic outcomes?

Research question 3 was exploratory in nature and proposed to examine the potential moderating influences of MRPF on the relationships between bullying victimization and mental health problems and academic outcomes. MRPF are individual, family, peer, and school-level factors that can be *modified* by interventions to reduce the probability of bullying victimization and related victim distress (Last, 2001). For research question 3, potential, modifiable factors were examined from all four social-ecological levels: (1) individual-level: five forms of situational coping, (2) family-level: family functioning and parent support, (3) peer-level: friend support and classmate support, and (4) school-level: teacher support and positive school climate.

In alignment with the purpose of research question 3, *non-modifiable* risk and protective factors (e.g., gender conformity, sexuality disclosure) were not examined. Although child abuse and neglect is a non-modifiable risk factor, previous research has demonstrated its association with bullying victimization and mental health problems and academic outcomes (Friedman et al., 2011; Hawker & Boulton, 2000). Therefore, the influence of child abuse and neglect was controlled for in research question 3.

In addition to the exclusion of non-modifiable factors for research question 3, the total bullying victimization scale score was the only bullying victimization variable

utilized for conceptual and pragmatic reasons. Given the lack of research in this area and the exploratory nature of this research question, the use of the total bullying victimization scale score was a logical first step to explore and provide an overview of the potential moderating influences of MRPF. Furthermore, physical bullying victimization was experienced by a small number of SMY preventing the exploration of bullying victimization by all types for this question. In addition, the use of the total bullying victimization scale score also functioned as a data reduction strategy (i.e., reducing the total number of multiple regression models) by providing an overall measure of the participants' experiences with bullying victimization. Psychological distress, similarly, was utilized as the primary variable to assess mental health problems excluding anxiety and depression. The overall measure of psychological distress encompassed both aspects of anxiety and depression and also functioned as a data reduction strategy to reduce the total number of multiple regression models for research question 3.

The exploration of these potential moderators began by conducting a series of three-variable multiple regression models (total bullying victimization, moderator, and interaction term) for all the dependent variables. The models with significant interaction terms were discussed in text for Chapter 4. However, the results for all the significant and non-significant three-variable models were presented in Appendix A.

If a significant interaction term was found, a SAS macro entitled "PROCESS" was utilized to probe and visually examine the nature of these interaction effects (Hayes, 2012). Moderators were examined at multiple points across their distributions, corresponding to the 10th percentile (low-level), 50th percentile (medium-level), and 90th

percentile (high-level). The macro analyzed the moderators in their continuous form without the need for dummy coding.

If the interaction terms were non-significant, two-variable multiple regression models (total bullying victimization and risk/protective factor) were performed to identify any significant main effects across the dependent variables. The exploratory analyses led to one overall multiple regression model for each dependent variable, which included the significant predictors and interaction terms from the previous aforementioned two- and three-variable models. As previously discussed, emotional child abuse was identified as a control variable for the final multiple regression models except for school absences and disciplinary actions. No other demographics were added as control variables, because none were significantly related to both the independent (total bullying victimization) and dependent variables (see previous Tables 11 and 12; pgs. 72-73).

Regression Diagnostics (Ordinary Least Squares)

Regression diagnostics were performed to determine if the models with continuous dependent variables met the assumptions for ordinary least squares regression (OLS). OLS includes four testable assumptions: 1) the independent and dependent variables are linearly related, 2) error terms are normally distributed, 3) the absence of multicollinearity, and 4) the variance of the error is the same across all levels of the independent variables (i.e., homoscedasticity; Cohen, Cohen, West, & Aiken, 2003). Scatterplots were examined to assess the linearity between the independent and dependent variables. All relationships appeared linear. All the variables investigated under this research question had error terms that were approximately normal except for

disciplinary actions and family functioning (total circumplex ratio). Disciplinary actions, however, did not approximate a normal distribution despite several attempts at transformation (e.g., log, square root, negative reciprocal). The variable was recoded into a dichotomous yes/no variable since the majority of the participants had not experienced any disciplinary actions in the last 90 days ($n = 95$). The dependent variable of disciplinary actions was analyzed using logistic regression. The family functioning (total circumplex ratio) was log transformed to correct for problems with normality.

To assess for multicollinearity, a correlation matrix was examined to determine the level of association between total bullying victimization, the potential moderators, and interaction terms. Total bullying victimization was highly correlated ($r > .80$) with all the interaction terms. To correct for multicollinearity, total bullying victimization and the potential moderators were mean centered and new interaction terms were created. Examination of a new correlation matrix and variance inflation factors were well within acceptable limits after mean-centering was performed. Last, scatterplots of the residuals were examined for all subsequent models and no problems were detected related to heteroscedasticity.

Logistic Regression Diagnostics

Regression diagnostics were also performed to determine if the models with binary dependent variables met the required assumptions for logistic regression. Similar to OLS regression, multicollinearity between the independent variables and interaction terms was corrected by mean-centering total bullying victimization and the potential moderators prior to the creation of the interaction terms. Examination of deviance

statistics, coefficients, and standard errors indicated no evidence of complete or quasi-separation (Allison, 1999). The Hosmer-Lemeshow test was used to examine model fit (Allison, 1999). No significant tests were found that would have indicated poor model fit between the independent variables, interaction terms, and binary dependent variables.

Mental Health Problems

Psychological Distress

A series of three-variable, multiple regression models (total bullying victimization, moderator, and interaction term) were performed to explore the potential moderating influences of risk and protective factors on the relationship between total bullying victimization and psychological distress. Utilizing Type I Sum of Squares (hierarchical), two significant interaction terms were identified after partialling out the main effects: (1) total bullying victimization*parent support [$F(1) = 9.71, p < .01$] and (2) total bullying victimization*classmate support [$F(1) = 5.06, p < .05$]. Each interaction term explained 6.3% and 3.4% of the variance of psychological distress, respectively (Table 21).

Table 21. Results of Three-Variable Multiple Regression Models Identifying Significant Interaction Terms on Psychological Distress (N = 123)

	Type I SS	F	R ²	<i>b</i>	SE	<i>t</i>	β	Model
Model 1								
Total Bullying Victim. (TBV)	9.70	22.03***	.1430	.023	.060	4.38***	.354	<i>F</i> (3,119) = 11.69*** <i>R</i> ² = .2277
Parent Support (PS)	1.47	3.33†	.0216	-.008	.004	-1.89†	-.152	
TBV*PS	4.28	9.71*	.0631	.012	.003	3.12**	.252	
Model 2								
Total Bullying Victim. (TBV)	9.70	21.05***	.1430	.025	.057	4.43***	.384	<i>F</i> (3,119) = 9.41*** <i>R</i> ² = .1917
Classmate Support (CS)	0.98	2.12	.0143	-.008	.006	-1.48	-.126	
TBV*CS	2.33	5.06*	.0344	.010	.004	2.25*	.189	

†*p*<.10, **p*<.05, ***p*<.01, ****p*<.001

For the parent support model, the interaction term had a statistically significant coefficient [*b* = .012, SE = .003, *t* = 3.12, *p* < .01]. For every unit increase in parent support, the effect (i.e., slope, rate of change) of total bullying victimization on psychological distress increased by .012 (see previous Table 21, pg. 99; Figure 6). For the classmate support model, the interaction term also had a statistically significant coefficient [*b* = .010, SE = .004, *t* = 2.25, *p* < .05]. For every unit increase in classmate support, the effect of total bullying victimization on psychological distress increased by .010 (see previous Table 21, pg. 99; Figure 7).

As previously discussed, to visually examine the nature of any significant interactions, a SAS macro entitled “PROCESS” was utilized to probe the interaction effects for both linear and logistic multiple regression models (Hayes, 2012). MRPF were examined at multiple points across their *continuous* distributions, corresponding to the 10th percentile (low-level), 50th percentile (medium-level), and 90th percentile (high-level).

Figure 6. Moderating Influence of Parent Support on Total Bullying Victimization and Psychological Distress

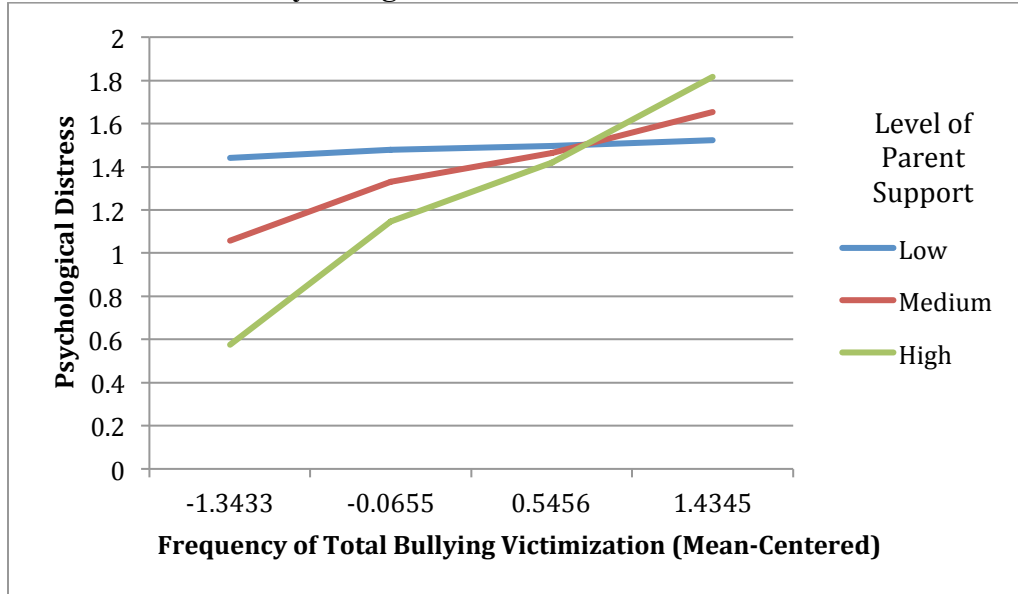
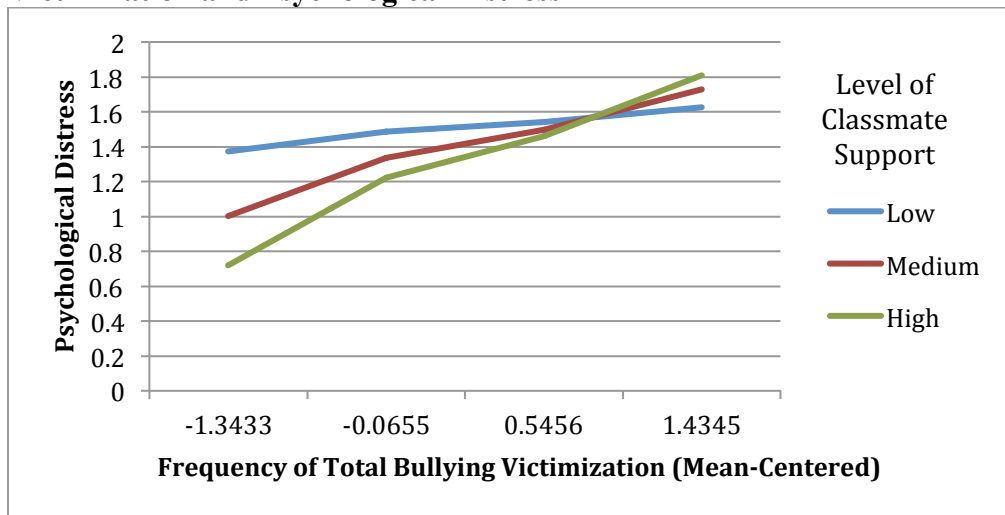


Figure 7. Moderating Influence of Classmate Support on Total Bullying Victimization and Psychological Distress



For the models without a significant interaction term, a series of two-variable multiple regression models (total bullying victimization and risk/protective factor) were performed to identify any significant main effects on psychological distress. Three forms of situational coping were significantly associated with psychological distress.

Controlling for total bullying victimization, participants who reported utilizing passive forms of situational coping had higher levels of psychological distress: detachment [$b = .23$, $SE = .10$, $t = 2.38$, $p < .01$] keeps-to-self [$b = .39$, $SE = .07$, $t = 5.48$, $p < .001$], and wishful thinking [$b = .43$, $SE = .09$, $t = 5.04$, $p < .001$]. Total bullying victimization had a significant main effect across all two-variable models ($p < .001$). For every unit increase on the total bullying victimization scale, psychological distress increased by approximately 0.21 (Table 22).

Table 22. Results of Two-Variable Multiple Regression Models Identifying Significant Main Effects on Psychological Distress (N = 123)

	<i>b</i>	SE	<i>t</i>	β	Model
Model 1					
Intercept	0.67	0.17	4.00***	0	$F(2,120) = 13.32***$
Total Bullying Victimization	0.23	0.05	4.13***	.346	$R^2 = .1817$
Detachment Coping	0.23	0.10	2.38**	.199	
Model 2					
Intercept	0.35	0.15	2.42*	0	$F(2,120) = 27.56***$
Total Bullying Victimization	0.21	0.05	4.14***	.316	$R^2 = .3147$
Keeps-to-Self Coping	0.39	0.07	5.48***	.419	
Model 3					
Intercept	0.16	0.19	0.84	0	$F(2,120) = 24.83***$
Total Bullying Victimization	0.21	0.05	4.22***	.327	$R^2 = .2927$
Wishful Thinking Coping	0.43	0.09	5.04***	.390	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Controlling for the influence of emotional child abuse, a final multiple regression model was performed with the following significant predictors and interaction terms identified in the preceding steps: 1) total bullying victimization, 2) parent support, 3) total bullying victimization*parent support, 4) classmate support, 5) total bullying victimization*classmate support, 6) detachment coping, 7) keeps-to-self coping, and 8) wishful thinking coping (Table 23).

Final Multiple Regression Model for Psychological Distress

$$y_i = \beta_0 + \beta_1 \text{Emotional Child Abuse} + \beta_2 \text{Total Bullying Victimization} \\ + \beta_3 \text{Parent Support} \\ + \beta_4 (\text{Total Bullying Victimization} * \text{Parent Support}) \\ + \beta_5 \text{Classmate Support} \\ + \beta_6 (\text{Total Bullying Victimization} * \text{Classmate Support}) \\ + \beta_7 \text{Detachment} + \beta_8 \text{Keeps to Self} + \beta_9 \text{Wishful Thinking} + \varepsilon_i$$

The overall model was statistically significant [$F(9,113) = 9.86, p < .001; N = 123$], explaining 44.0% of the variance of psychological distress. One significant interaction term was identified after partialling out the main effects: total bullying victimization*parent support [$F(1, 113) = 5.45, p < .05$]. The interaction term uniquely explained 2.1% of the variance of psychological distress. The interaction term had a statistically significant coefficient [$b = .010, SE = .004, t = 2.34, p < .05$]. For every unit increase in parent support, the effect of total bullying victimization on psychological distress increased by .01.

Figure 8 presents a visual depiction of the influence that low (10th percentile), medium (50th percentile), and high levels (90th percentile) of parent support had on the relationship between total bullying victimization and psychological distress. At a low frequency of total bullying victimization, SMY who reported low-levels of parent support had higher-levels of psychological distress compared to their counterparts with high-levels of parent support. As the frequency of total bullying victimization increased, SMY with high- or low-levels of parent support appeared to have similar levels of psychological distress. Parent support appeared to be unable to buffer youths from higher-levels of psychological distress as the frequency of total bullying victimization increased.

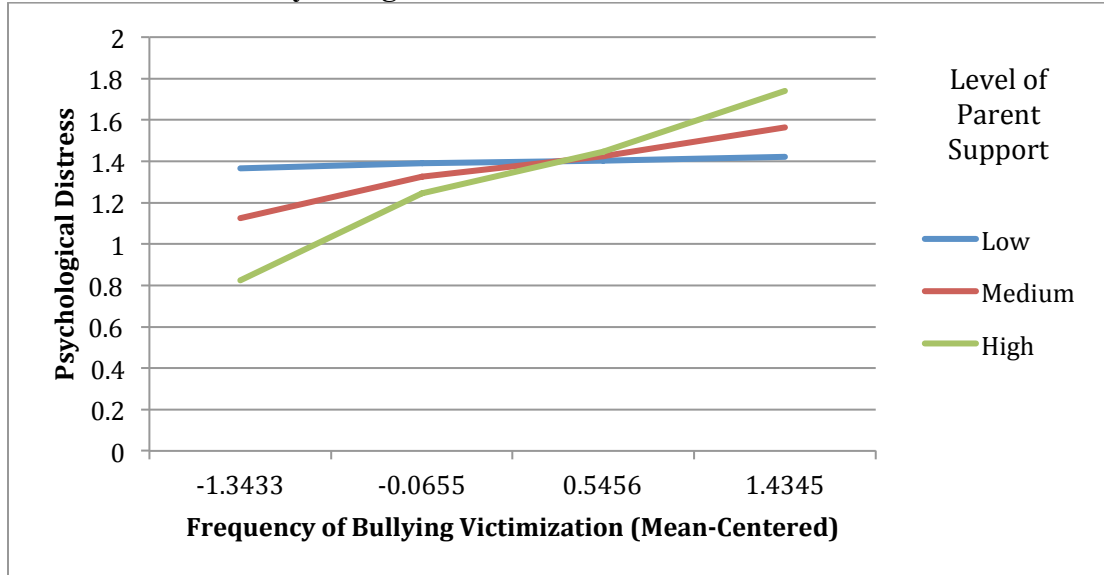
Classmate support and its corresponding interaction term were not statistically significant. In addition, the model identified two statistically significant main effects for passive forms of situational coping: keeps-to-self [$b = .20$, $SE = .08$, $t = 2.43$, $p < .05$] and wishful thinking [$b = .25$, $SE = .09$, $t = 2.64$, $p < .01$]. For every unit increase in keeps-to-self and wishful thinking, psychological distress increased by .20 and .25, respectively. In other words, higher levels of psychological distress were associated with higher levels of passive forms of situational coping.

Table 23. Results of Final Multiple Regression Model: Psychological Distress Regressed on Significant Predictors and Interaction Terms (N = 123)

Variable	<i>b</i>	SE	<i>t</i>	β	Model
Intercept	.101	.223	0.442	0	
Emotional Child Abuse	.028	.012	2.374*	.205	
Total Bullying Victim. (TBV)	.176	.051	3.475***	.269	
Parent Support (PS)	-.003	.005	-0.649	-.054	
TBV*PS	.008	.004	2.335*	.177	$F(9,113) = 9.863***$
Classmate Support (CS)	.000	.005	-0.030	-.002	$R^2 = .440$
TBV*CS	.002	.004	0.598	.046	
Detachment	.018	.096	0.183	.015	
Keeps-to-Self	.200	.082	2.427*	.214	
Wishful Thinking	.245	.093	3.240**	.223	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 8. Final Model: Moderating Influence of Parent Support on Total Bullying Victimization and Psychological Distress



Seriously Considered Suicide: A series of three-variable, multiple logistic regression models (total bullying victimization, moderator, and interaction term) were performed to explore the moderating influences of potential risk and protective factors on the relationship between total bullying victimization and seriously considered suicide in the last 12 months. All three-variable models were statistically significant, but no significant interactions terms were found after partialling out the main effects of total bullying victimization and the potential moderators.

Since no significant interaction terms were found, a series of two-variable, multiple logistic regression models (total bullying victimization and risk/protective factor) were performed to identify any significant main effects on having had seriously considered suicide in the last 12 months. Classmate support was the only risk and protective factor to have a significant main effect [$\chi^2(1) = 5.15, p < .05; N = 123; Odds Ratio = 0.96$ (95% CI: 0.92, 0.99)]. Participants who reported higher levels of classmate

support had a significantly lower adjusted odds of having had seriously considered suicide in the last 12 months. Total bullying victimization had a significant main effect across all two-variable models tested ($p < .01$). For every unit increase in total bullying victimization, the adjusted odds increased for having had seriously considered suicide in the last 12 months. The adjusted odds ratios ranged from 1.55 to 1.84 across all two-variable models.

Controlling for the influence of emotional child abuse, a final multiple logistic regression model was performed adding total bullying victimization and classmate support as main predictors (Table 24).

Final Multiple Logistic Regression Model for Seriously Considered Suicide

$$\ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 \textit{Emotional Child Abuse} + \beta_2 \textit{Total Bullying Victimization} + \beta_3 \textit{Classmate Support}$$

The overall model was statistically significant [$\chi^2(3) = 19.40, p < .001; N = 123$]. Total bullying victimization was significantly associated with having had seriously considered suicide in the last 12 months controlling for the other variables in the model [$\chi^2(1) = 4.54, p < .05; N = 123; \text{Odds Ratio} = 1.48$ (95% CI: 1.03, 2.13)]. For every unit increase on the total bullying victimization scale, the adjusted odds ratio of having had seriously considered suicide in the last 12 months increased by 48%. Last, classmate support was significantly associated with having had seriously considered suicide in the last 12 months controlling for the other variables in the model [$\chi^2(1) = 4.50, p < .05; N = 123; \text{Odds Ratio} = 0.96$ (95% CI: 0.93, 0.99)]. For every unit increase on classmate

support, the adjusted odds ratio of having had seriously considered suicide in the last 12 months decreased by approximately 4%.

Table 24. Results of Final Multiple Logistic Regression Model: Seriously Considered Suicide Regressed on Significant Predictors (N = 123)

Variable	Odds Ratio	95% CI	Wald χ^2	Model
Emotional Child Abuse	1.08	1.00, 1.17	4.26*	$\chi^2(3) = 19.40^{***}$
Total Bullying Victimization	1.48	1.03, 2.13	4.54*	
Classmate Support	0.96	0.93, 0.99	4.26*	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Made a Suicide Plan

A series of three-variable, multiple logistic regression models (total bullying victimization, moderator, and interaction term) were performed to explore the moderating influences of potential risk and protective factors on the relationship between total bullying victimization and having made a suicide plan in the last 12 months. None of the two-variable and three-variable models were found to be statistically significant. Total bullying victimization was not associated with having made a suicide plan in the last 12 months, neither were any of the other modifiable risk and protective factors included in this study. No further analyses were conducted.

Attempted Suicide

A series of three-variable, multiple logistic regression models (total bullying victimization, moderator, and interaction term) were performed to explore the moderating influences of potential risk and protective factors on the relationship between total bullying victimization and having attempted suicide in the last twelve months. No significant interaction terms were found after partialling out the main effects of total

bullying victimization and the moderators. Since no significant interaction terms were found, a series of two-variable, multiple logistic regression models (total bullying victimization and risk/protective factor) were performed to identify any significant main effects on having had seriously considered suicide in the last 12 months.

None of the risk and protective factors had a statistically significant main effect on attempted suicide in the last 12 months. However, there was a significant main effect between total bullying victimization and attempted suicide [$\chi^2(2) = 7.60, p < .01$; Odds Ratio = 1.85 (95% CI: 1.2, 2.9)]. For every unit increase on the total bullying victimization scale, the odds of having attempted suicide in the last 12 months increased by 85%.

Controlling for the influence of emotional child abuse, a final multiple logistic regression model was performed adding total bullying victimization as the only main predictor (Table 25).

Final Multiple Logistic Regression Model for Attempted Suicide

$$\ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 \textit{Emotional Child Abuse} + \beta_2 \textit{Total Bullying Victimization}$$

The overall model was statistically significant [$\chi^2(2) = 12.31, p < .01$; N = 123]. Total bullying victimization was significantly associated with having had seriously considered suicide in the last 12 months controlling for the influence of emotional child abuse [$\chi^2(1) = 5.66, p < .05$; N = 123; Odds Ratio = 1.74 (95% CI: 1.10, 2.74)]. For every unit increase on the total bullying victimization scale, the adjusted odds ratio of having attempted suicide in the last 12 months increased by 74% (Table 25).

Table 25. Results of Final Multiple Logistic Regression Model: Attempted Suicide Regressed on Significant Predictors (N = 123)

Variable	Odds Ratio	95% CI	Wald χ^2	Model
Emotional Child Abuse	1.12	1.01, 1.24	4.56*	$\chi^2(2) = 12.31^{**}$
Total Bullying Victimization	1.74	1.10, 2.74	5.66*	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Academic Problems

Grade Performance

A series of three-variable, multiple regression models (total bullying victimization, moderator, and interaction term) were performed. The goal was to explore the moderating influences of potential risk and protective factors on the relationship between total bullying victimization and grade performance. Utilizing Type I Sum of Squares, two significant interaction terms were identified after partialling out the main effects: total bullying victimization*problem-focused coping [$F(1) = 5.31, p < .05$] and total bullying victimization*classmate support [$F(1) = 6.77, p < .05$]. The interaction terms uniquely explained 3.94% and 4.60% of the variance of grade performance, respectively (Table 26).

Table 26. Results of Three-Variable Multiple Regression Models Identifying Significant Interaction Terms on Grade Performance

	Type I SS	F	R ²	<i>b</i>	SE	<i>t</i>	β	Model
Model 1								
Total Bullying Victim. (TBV)	22.11	8.88**	.0658	-.493	.133	-3.70***	-.339	<i>F</i> (3,118) = 5.63** N=122 R ² = .1253
Problem-Focused Coping (PFC)	6.76	2.72	.0201	.663	.320	2.07*	.190	
TBV*PFC	13.22	5.31*	.0394	.624	.271	2.30*	.204	
Model 2								
Total Bullying Victim. (TBV)	22.29	9.66**	.0656	-.203	.127	-1.60	-.139	<i>F</i> (3,119) = 9.44*** N = 123 R ² = .1922
Classmate Support (CS)	27.45	11.89***	.0807	.042	.012	3.43***	.292	
TBV*CS	15.63	6.77*	.0460	.026	.010	2.60*	.219	

†*p*<.10, **p*<.05, ***p*<.01, ****p*<.001

For the problem-focused model, the interaction term had a statistically significant coefficient [*b* = .62, SE = .27, *t* = 2.30, *p* < .05]. For every unit increase in problem-focused, situational coping, the effect of total bullying victimization on grade performance increased by .62 (Figure 9). The interaction term for the classmate support model had a statistically significant coefficient [*b* = .03, SE = .01, *t* = 2.60, *p* < .05]. For every unit increase in classmate support, the effect of total bullying victimization on grade performance increased by .03 (Figure 10).

Figure 9. Moderating Influence of Problem-Focused Coping on Total Bullying Victimization and Grade Performance

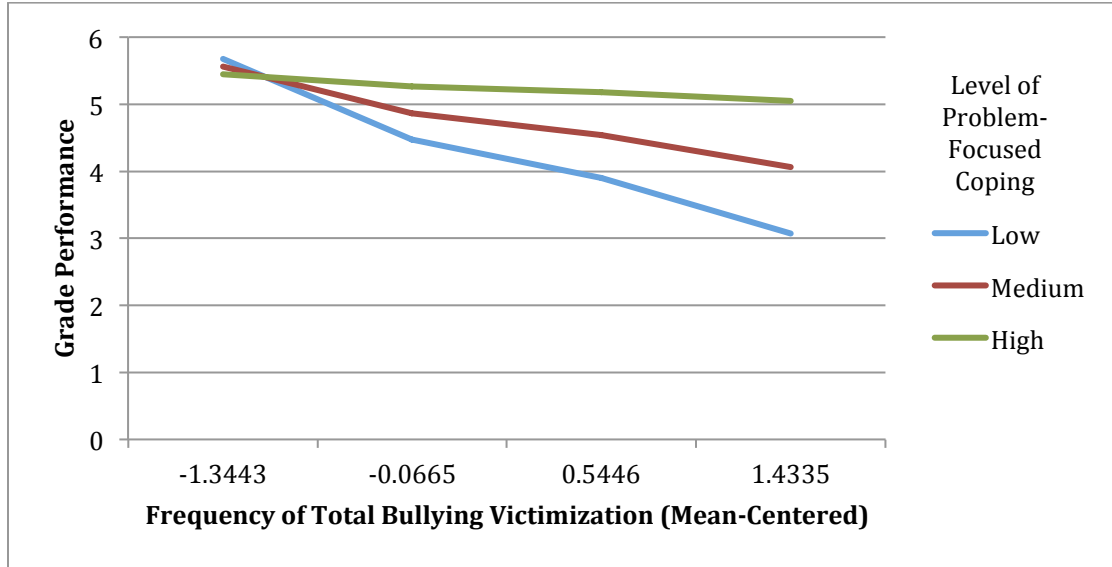
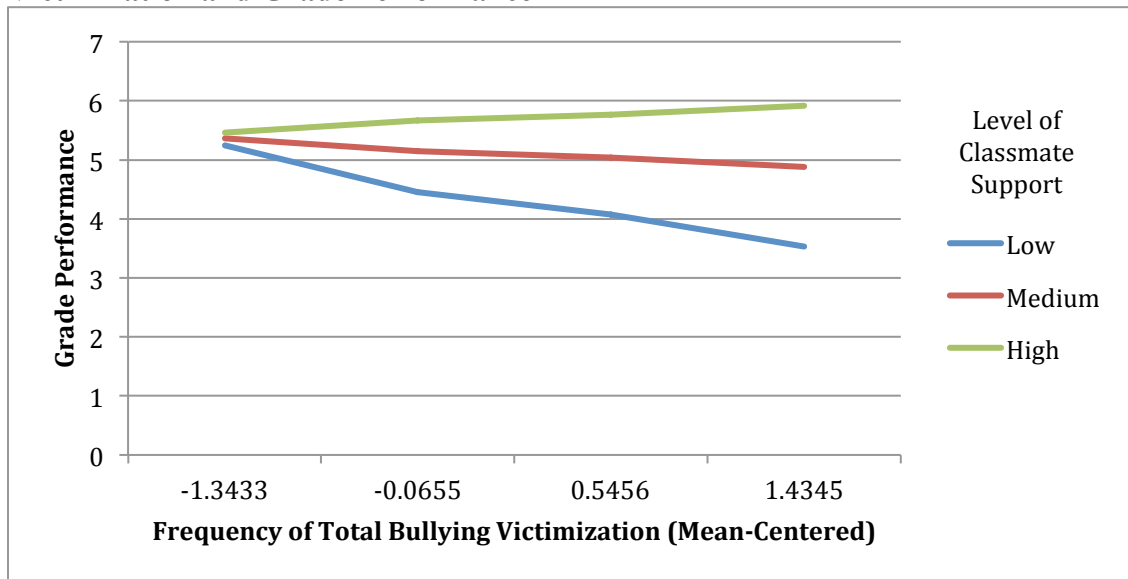


Figure 10. Moderating Influence of Classmate Support on Total Bullying Victimization and Grade Performance



For all the models without a significant interaction, a series of two-variable, multiple regression models were performed to identify any significant main effects on grade performance. Positive school climate [$b = .05$, $SE = .03$, $t = 2.06$, $p < .05$] was

found to be a significant predictor of grade performance. Higher levels of positive school climate were associated with higher levels of grade performance, controlling for total bullying victimization (Table 27). Total bullying victimization had a significant main effect across all two-variable models ($p < .01$). For every unit increase in total bullying victimization, grade performance decreased by -0.27 to -0.44 .

Table 27. Results of Two-Variable Multiple Regression Models Identifying Significant Main Effects on Grade Performance (N = 123)

Variable	<i>b</i>	SE	<i>t</i>	β	Model
Intercept	3.47	1.01	3.42***	0	$F(2,120) =$
Total Bullying Victimization	-0.32	0.13	-2.45*	-.217	6.41**
Positive School Climate	0.05	0.03	2.06*	.182	$R^2 = .0973$

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Controlling for the influence of emotional child abuse, a final multiple regression model was performed with the following significant predictors and interaction terms identified in the preceding steps: 1) total bullying victimization, 2) problem-focused coping, 3) total bullying victimization*problem-focused coping, 4) classmate support, 5) total bullying victimization*classmate support, and 6) positive school climate (Table 28).

Final Multiple Regression Model for Grade Performance

$$\begin{aligned}
 y_i = & \beta_0 + \beta_1 \text{Emotional Child Abuse} + \beta_2 \text{Total Bullying Victimization} \\
 & + \beta_3 \text{Problem Focused Coping} \\
 & + \beta_4 (\text{Total Bullying Victimization} * \text{Problem Focused Coping}) \\
 & + \beta_5 \text{Classmate Support} \\
 & + \beta_6 (\text{Total Bullying Victimization} * \text{Classmate Support}) \\
 & + \beta_7 \text{Positive School Climate} + \varepsilon_i
 \end{aligned}$$

The overall model was statistically significant [$F(7,114) = 7.03, p < .001; N = 122$], explaining 30.15% of the variance of grade performance. One significant

interaction term was identified after partialling out the main effects: total bullying victimization*classmate support [$F(1, 114) = 5.55, p < .05$]. The interaction term uniquely explained 3.4% of the variance of grade performance. The interaction term had a statistically significant coefficient [$b = .02, SE = .01, t = 2.36, p < .05$]. For every unit increase in classmate support, the effect of total bullying victimization on grade performance increased by .02.

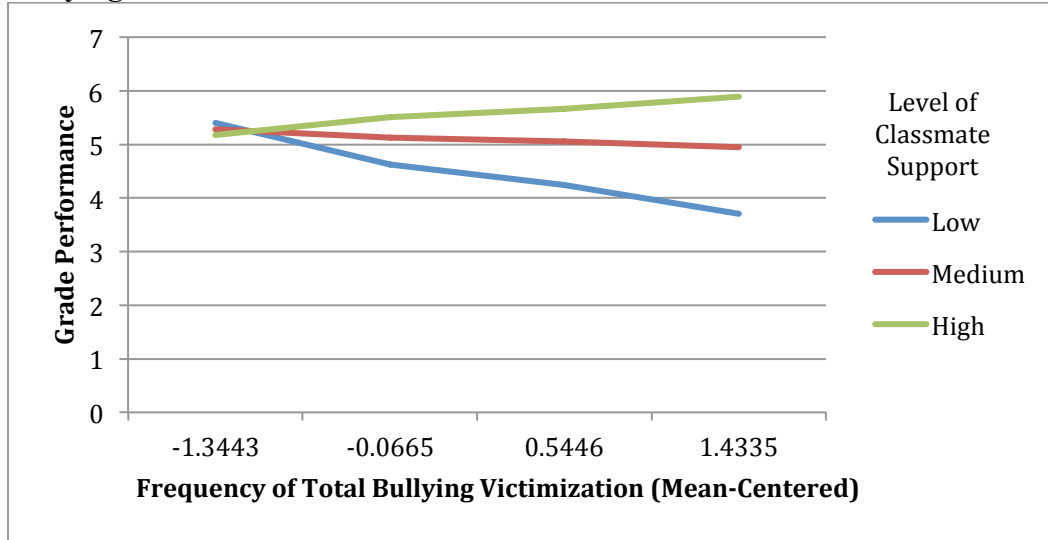
Figure 11 presents a visual depiction of the influence that low (10th percentile), medium (50th percentile), and high levels (90th percentile) of classmate support had on the relationship between total bullying victimization and grade performance. As the frequency of total bullying victimization increased, SMY who reported more classmate support had less of a decline in grade performance compared to their counterparts who reported lower levels of this form of social support. Positive school climate was not a significant main predictor after controlling for the other variables in the model.

Table 28. Results of Final Multiple Regression Model: Grade Performance Regressed on Significant Predictors and Interactions (N = 122)

Variable	<i>b</i>	SE	<i>t</i>	β	Model
Intercept	5.43	1.08	5.04***	0	
Emotional Child Abuse	-0.09	0.03	-3.56***	-.297	
Total Bullying Victimization (TBV)	-0.21	0.14	-1.52	-.141	$F(7,114) = 7.03***$ $R^2 = .3015$
Problem-Focused Coping (PFC)	0.36	0.31	1.16	.104	
TBV*PFC	0.38	0.26	1.45	.125	
Classmate Support (CS)	0.03	0.01	2.26*	.203	
TBV*CS	0.02	0.01	2.36*	.202	
Positive School Climate	0.02	0.03	0.68	.067	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 11. Final Model: Moderating Influence of Classmate Support on Total Bullying Victimization and Grade Performance



School Absences

A series of three-variable, multiple regression models (total bullying victimization, moderator, and interaction term) were performed to explore the potential moderating influences of risk and protective factors on the relationship between total bullying victimization and school absences (Table 29). Utilizing Type I Sum of Squares (hierarchical), two significant interactions terms were identified after partialling out the main effects: total bullying victimization*friend support [$F(1) = 5.18, p < .05$] and total bullying victimization*teacher support [$F(1) = 4.53, p < .05$]. The interaction terms uniquely explained 4.1% and 3.6% of the variance of school absences, respectively. The first interaction term had a statistically significant coefficient [$b = .04, SE = .02, t = 2.28, p < .05$]. For every unit increase in friend support, the effect of total bullying victimization on school absences increased by .04 (Figure 12). For teacher support, the interaction term also had a statistically significant coefficient [$b = .03, SE = .01, t = 2.13, p < .05$]. For

every unit increase in teacher support, the effect of total bullying victimization on school absences increased by .03 (Figure 13).

Table 29. Results of Three-Variable Multiple Regression Models Identifying Significant Interaction Terms on School Absences (N = 123)

	Type I SS	F	R ²	<i>b</i>	SE	<i>t</i>	β	Model
Model 1								
Total Bullying Victim. (TBV)	6.06	1.81	.0142	.171	.146	1.18	.104	<i>F</i> (3,119) = 2.80* <i>R</i> ² = .0659
Friend Support (FS)	4.72	1.41	.0111	.016	.017	0.94	.084	
TBV*FS	17.38	5.18*	.0407	.035	.015	2.28	.203	
Model 2								
Total Bullying Victim. (TBV)	6.06	1.81	.0142	.147	.148	1.00	.090	<i>F</i> (3,119) = 2.92* <i>R</i> ² = .0686
Teacher Support (TS)	8.09	2.42	.0189	.024	.015	1.54	.136	
TBV*TS	15.17	4.53*	.0355	.027	.013	2.13	.192	

†*p*<.10, **p*<.05, ***p*<.01, ****p*<.001

Figure 12. Moderating Influence of Friend Support on Total Bullying Victimization and School Absences

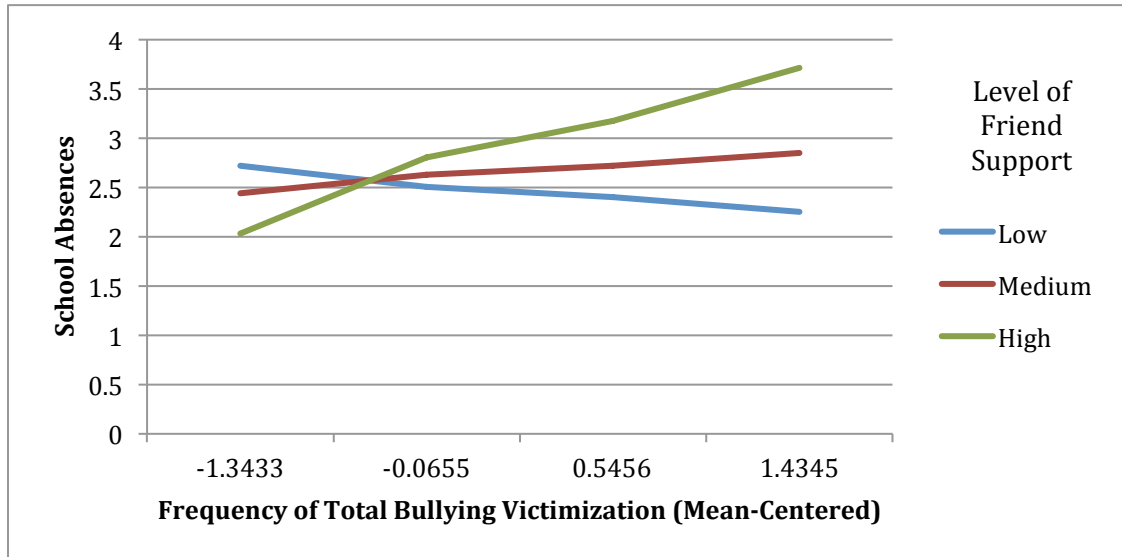
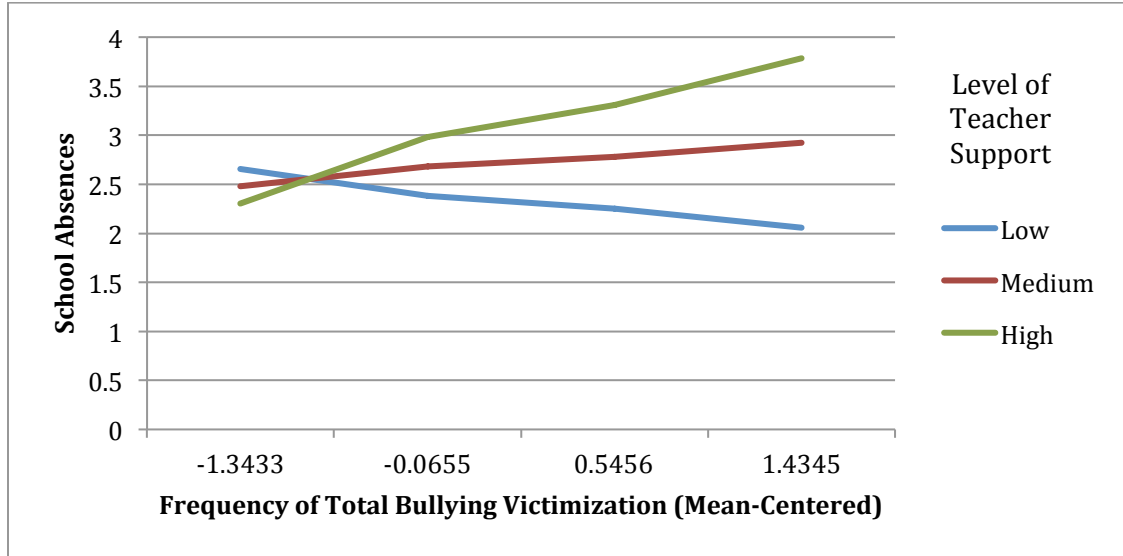


Figure 13. Moderating Influence of Teacher Support on Total Bullying Victimization and School Absences



For all the models without a significant interaction, a series of two-variable, multiple regression models were performed to identify any significant main effects on school absences. None of the two-variable models were statistically significant.

A final multiple regression model was performed with the following predictors and interaction terms identified from the preceding steps: 1) total bullying victimization, 2) friend support, 3) total bullying victimization*friend support, 4) teacher support, and 5) total bullying victimization*teacher support (Table 30). No control variables were added to the final model, as none were significantly associated with both total bullying victimization and school absences (see previous Tables 11 and 12, pgs. 72-73).

Final Multiple Regression Model for School Absences

$$y_i = \beta_0 + \beta_1 \text{Total Bullying Victimization} + \beta_2 \text{Friend Support} + \beta_3 (\text{Total Bullying Victimization} * \text{Friend Support}) + \beta_4 \text{Teacher Support} + \beta_5 (\text{Total Bullying Victimization} * \text{Teacher Support}) + \varepsilon_i$$

The overall model was statistically significant [$F(5,117) = 2.31, p < .05; N = 123$], explaining 9.0% of the variance of school absences. Although the overall model was statistically significant ($p = .048$), none of the main effects or interaction terms in the final model reached or approached statistical significance. The final model was systematically trimmed removing one variable (interaction, main effect) at a time, but no main effect or interaction term was significant beyond what was already reported in the simpler, three-variable models presented in the preceding paragraphs.

Table 30. Results of Final Multiple Regression Model: School Absences Regressed on Significant Predictors and Interaction Terms (N = 123)

Variable	<i>b</i>	SE	<i>t</i>	β	Model
Intercept	2.66	0.16	16.16***	0	
Total Bullying Victim. (TBV)	0.15	0.15	1.00	.090	
Friend Support (FS)	0.01	0.02	0.38	.038	$F(5,117) = 2.31^*$
TBV*FS	0.03	0.02	1.58	.152	$R^2 = .0900$
Teacher Support (TS)	0.02	0.02	1.15	.111	
TBV*TS	0.02	0.01	1.36	.132	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Disciplinary Actions

A series of three-variable, multiple logistic regression models (total bullying victimization, moderator, and interaction term) were performed. As stated previously, the goal was to explore the moderating influences of potential risk and protective factors on the relationship between total bullying victimization and disciplinary actions. All three-variable models were statistically significant, but no significant interactions were found after partialling out the main effects.

For all the models without a significant interaction, a series of two-variable, multiple logistic regression models were performed to identify any significant main

effects on disciplinary actions. Total bullying victimization had a significant main effect across all two-variable models ($p < .01$). For every unit increase in total bullying victimization, the odds of having had a disciplinary action in the last 90 days increased by 69-83% [Odds Ratio = 1.69 to 1.83]. A final multiple logistic regression model was not performed, because no other significant main effects, interaction terms, or control variables were identified in the preceding steps.

Summary of Research Question 3

The goal of research question 3 was to explore the potential moderating influences of MRPF on bullying victimization and mental health problems and academic outcomes. Utilizing the final multiple regression models for each dependent variable, these exploratory analyses led to the identification of two significant modifiable factors. First, parent support moderated the relationship between bullying victimization and psychological distress. At a low frequency of total bullying victimization, SMY who reported low-levels of parent support had higher-levels of psychological distress compared to their counterparts with high-levels of parent support. As the frequency of total bullying victimization increased, SMY with high- or low-levels of parent support appear to have similar levels of psychological distress. In other words, parent support appeared to be unable to buffer youths from higher-levels of psychological distress as the frequency of total bullying victimization increased.

Second, classmate support moderated the relationship between total bullying victimization and grade performance. As the frequency of total bullying victimization increased, SMY who reported more classmate support did not experience a decline in grade performance compared to their counterparts who reported lower levels of classmate

support. Classmate support may function as a protective factor to lower grade performance in the face of increasing bullying victimization.

In addition, the exploratory analyses also found significant main effects for risk and protective factors across the individual- and peer-levels. At the individual-level, higher levels of two forms of passive situational coping (keeps-to-self and wishful thinking) were associated with higher-levels of psychological distress controlling for the frequency of total bullying victimization. At the peer-level, higher levels of classmate support were associated with a lower adjusted odds of seriously considering suicide in the last 12 months.

CHAPTER 5: CONCLUSION AND IMPLICATIONS

Overview of Key Findings

This chapter presents the study's key findings, contributions to the field of bullying victimization and sexual minority youths (SMY), and research, practice, and policy implications. The chapter begins by discussing the frequency of bullying victimization from the current, community-based sample and comparing it to a national-level sample of SMY. This is followed by a discussion of (1) the demographic differences in bullying victimization and (2) the associations between risk and protective factors and the frequency of total and four types of bullying victimization (research question 1). Next, the relationships between total and four types of bullying victimization and mental health problems and academic outcomes are discussed (research question 2). This is followed by a discussion of the modifiable risk and protective factors (MRPF) that require further exploration in future research (research question 3). Last, a discussion of the present study's limitations is presented.

Frequency of Bullying Victimization among Sexual Minority Youths

The most important finding regarding the frequency of bullying victimization is the high percentage of SMY (93.6%) who experienced some type of bullying victimization in their lifetime. Similarly, the percentage of SMY (75.2%) who experienced bullying victimization within the last school year is also alarmingly high.¹² The findings support the contention made by Rivers and D'Augelli (2001) that bullying

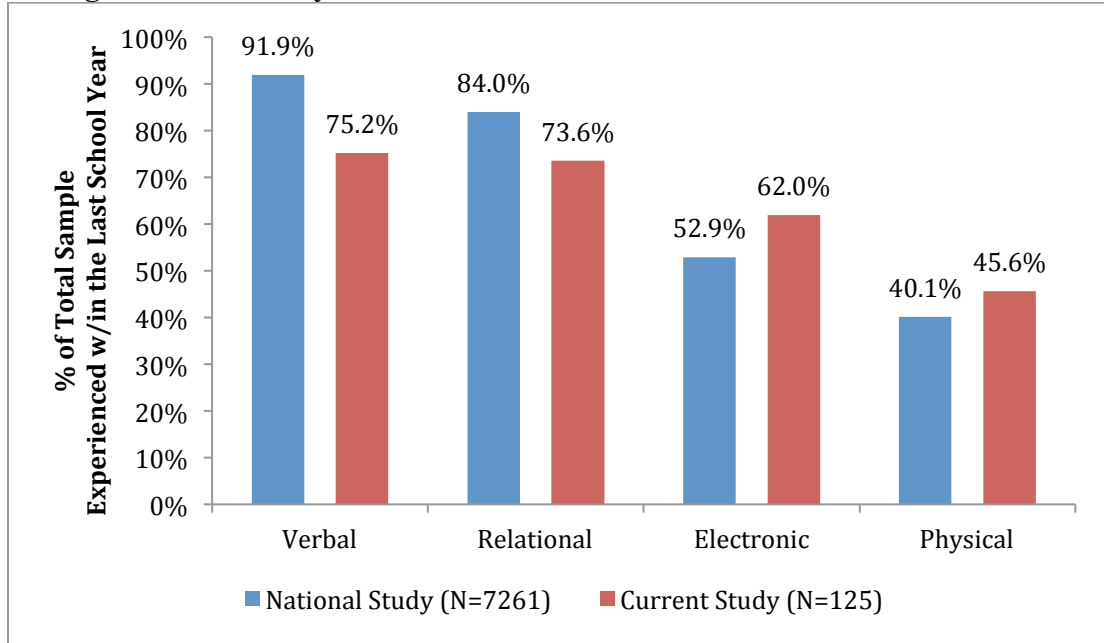
¹² The overall frequencies of bullying victimization were measured by reading a definition of bullying victimization to the participants and asking them (yes/no) if they experienced bullying victimization in their lifetime and within the last school year.

victimization is such a common occurrence for SMY that it could be conceptualized as a normative experience for this population.

Consistent with past research, verbal bullying victimization is the most frequent type in comparison to relational, electronic, and physical, with 56% of SMY experiencing at least one incident per month [see previous Figure 5 (Chapter 4, pg. 70); Kosciw et al., 2010]. As expected, the frequency of relational, electronic, and physical bullying victimization are considerably lower in comparison to verbal, with 29.6%, 22.4%, and 6.4% of SMY experiencing at least one incident per month, respectively. The majority of SMY who report experiencing relational, electronic, and physical bullying victimization experience these types at a low frequency or severity [i.e., one or more times per year; see previous Figure 5 (Chapter 4, pg. 70)].

To assess the generalizability of the findings from the current study, the frequencies of bullying victimization by type (i.e., verbal, relational, electronic and physical) were compared to a national sample of SMY (Figure 14; Kosciw et al., 2010). The findings from the current study have the same general trend found in the larger national study (N=7261), with verbal bullying victimization endorsed the most, followed by relational, electronic, and physical (Kosciw et al., 2010). Likewise, the frequency of physical bullying victimization is roughly comparable between the two studies.

Figure 14. Current Study vs. National-Level Study of Bullying Victimization among Sexual Minority Youths



Although the estimates from the current study are roughly comparable to the research by Kosciw et al. (2010), some notable differences were found. The current study found fewer SMY who experienced verbal (16.7%) and relational (10.4%) bullying victimization within the last school year. Furthermore, approximately 10% more SMY experienced electronic bullying victimization compared to the larger national study. Several possible reasons may explain these differences. First, the data for this larger national study of SMY were collected in 2008 (Kosciw et al., 2010). The current study may be capturing a trend showing a decline in verbal and relational bullying victimization and an increase in electronic bullying victimization for SMY. Second, other factors such as schools adopting and enforcing anti-bullying policies (i.e., reduction in verbal bullying victimization) and the proliferation of social networking websites and electronic devices with persistent Internet connections (i.e., increases in electronic

bullying victimization) may also contribute to the observed differences (Hinduja & Patchin, 2008). Last, methodological differences between the studies may explain the observed differences in the frequency of bullying victimization. For example, the current study used a general measure of bullying victimization (e.g., “I was called names”), while the larger, national sample used a sexual orientation specific measure (e.g., “I was called names because of my known or perceived sexual orientation”). Furthermore, these differences could be explained by the sampling frame used by the larger, national study, which captured a greater diversity of rural, suburban, and urban SMY. Some studies have indicated that rural and suburban SMY may be bullied more frequently than their urban counterparts (Kosciw et al., 2009).

Future research is needed to explore electronic bullying victimization, because it is not as easily monitored as other types of bullying victimization and current anti-bullying interventions may be less effective in reducing its occurrence (Patchin & Hinduja, 2006). The rise of new social networking websites and electronic devices create new challenges for schools and vulnerable adolescents such as SMY (Hinduja & Patchin, 2008). Future research is needed over the coming decade to estimate the prevalence of electronic bullying victimization and to develop evidence-based interventions that are effective in reducing its occurrence and potential psychosocial and behavioral consequences.

Furthermore, advancements are needed in the measurement of bullying victimization for SMY. Qualitative and ethnographic research are needed to measure the unique dimensions of bullying victimization that separate it conceptually from other forms of youth violence. The anthropological method of a life history calendar (LHC)

may be utilized to assess (1) if a power imbalance was present between the perpetrator and victim, (2) the duration or chronicity of the bullying victimization across a school year, grade levels, and developmental periods, and (3) the subjective experiences of severity for bullying victimization by type (Axinn, Pearce, & Ghimire, 1999; Yoshihama, Gillespie, Hammock, Belli, & Tolman, 2005). This qualitative research may lay the groundwork for the development of a better measure of bullying victimization that captures all of its unique dimensions (e.g., power imbalance, duration, severity, type, motivation) that delineate it from other forms of youth violence such as fighting, reactive aggression, peer harassment, incivility, and sexual assault (Olweus, 1993a, 1993b).

Demographic Differences in Bullying Victimization

Age

The study also investigated whether the frequency of bullying victimization differed by age, race, gender, and sexual identity. Older SMY experienced lower frequencies of verbal and physical bullying victimization, which is consistent with past research indicating a decline of bullying victimization with age for the general adolescent population and SMY (Olweus, 1993b; Pilkington & D'Augelli, 1995). Interestingly, relational and electronic bullying victimization did not significantly decrease with age. The lack of a decrease in relational and electronic bullying victimization may suggest these types of bullying may be more likely to persist into later adolescence (Arseneault, Bowes, & Shakoor, 2010; Smith et al., 2008). Future research is needed to explore the potentially different developmental trajectories for indirect (relational and electronic) versus direct (verbal and physical) forms of bullying victimization among SMY. For

example, if relational and electronic bullying victimization have a greater likelihood of persisting into later adolescence, school-based, anti-bullying interventions may need to place greater emphasis on addressing these indirect forms of bullying victimization in high school versus elementary and middle school settings.

Race/Ethnicity

A consistent racial/ethnic trend was observed across all types of bullying victimization with African American SMY reporting the lowest frequencies followed by Caucasian and the collapsed racial group of Hispanic, Native American, and Multiracial (HNAM) youths. This trend is consistent with previous research with the general adolescent population, whereby African American adolescents have been shown to report a significantly lower prevalence of bullying victimization than their Caucasian and Hispanic counterparts (Spriggs, Iannotti, Nansel, & Haynie, 2007). Moreover, African American and Caucasian SMY reported a significantly lower frequency of verbal and physical bullying victimization compared to the HNAM group.

One explanation for the higher frequencies of verbal and physical bullying victimization for the HNAM group is that this study used a general measure of bullying victimization as opposed to a sexual orientation specific measure. Because the HNAM group was primarily comprised of SMY who self-identified as multiracial, the general measure of bullying victimization used in this study may have captured bullying related to their race. Research with the general adolescent population has indicated that multiracial youths are more likely to be bullied than youths who identify with a single race (Stein et al., 2007).

This finding suggests multiracial SMY may be a more vulnerable subgroup of SMY. Future anti-bullying policies and school-based interventions may need to address the overlapping systems of oppression such as racism, heterosexism, and homophobia that support bullying victimization among this potentially more vulnerable subpopulation. For example, diversity trainings for students, teachers, and staff may be needed to address racism, heterosexism, and homophobia together.

Furthermore, more knowledge is needed to understand how racial and heterosexist content may work together to underlie incidents of bullying victimization for multiracial SMY. This research will require the development of improved measures that assess for sexual orientation and racially motivated forms of bullying victimization. This is consistent with recommendations by the US Department of Health and Human Services that has requested future bullying studies assess for racially motivated forms of bullying separately from other forms motivated by sexual orientation and gender identity (Stein et al., 2007).

Gender and Sexual Identity

Surprisingly, this study did not find any gender and sexual identity differences in the frequency of bullying victimization by total or type. Previous research with SMY has been fairly consistent in that sexual minority males experience higher frequencies of verbal and physical bullying victimization, and sexual minority females experience higher frequencies of relational bullying victimization (Birkett, Espelage, & Koenig, 2009; Espelage, Aragon, Birkett, & Koenig, 2008; Fedewa & Ahn, 2011; Kosciw, Greytak, & Diaz, 2009). Similarly, bisexual and questioning youths have been shown to

experience higher frequencies of bullying victimization compared to their gay and lesbian counterparts (Fedewa & Ahn, 2011; Kosciw, Greytak, & Diaz, 2009).

One explanation for the lack of significant gender and sexual identity differences in bullying victimization may be due to sampling bias in the present study. Previous research has shown a higher frequency of bullying victimization for bisexual and questioning youths utilizing large, school-based samples (Birkett et al., 2009; Espelage et al., 2008). The present study utilized a sample from community-based organizations that serve SMY. Bisexual and questioning youths who attend these community-based organizations may be different from bisexual and questioning youths who do not choose to attend a similar organization. Espelage et al. (2008) postulated that bisexual and questioning youths were at greater risk for bullying victimization than their gay and lesbian counterparts, because of the lack of a supportive community. In contrast, bisexual and questioning youths who attend community-based organizations may not have this problem, because they may have formed supportive connections with the larger sexual minority community.

Demographic Differences in Mental Health Problems

An important finding from this study is the association between sexual identity and suicidal ideation. A higher percentage of bisexual youths (54.2%) and the queer, questioning, pansexual and other group (QQPO; 56.0%) report seriously considering suicide in the last year in comparison to gay/lesbian youths (28.0%). Similarly, a higher percentage of bisexual youths (41.7%) report making a suicide plan in the last year in comparison to the QQPO group (24.0%) and gay/lesbian youths (7.3%). These findings

are consistent with past research (Birkett et al., 2009; Espelage et al., 2008). The current findings are alarming and necessitate future research with larger samples (e.g., school-based or Internet-based) that will allow for a more thorough examination of potential sexual identity differences in bullying victimization and mental health problems. More knowledge is needed to explain the mechanisms (e.g., increased stigma, less access to supportive sexual minority organizations, lack of acceptance in the larger gay and lesbian community) by which bisexual and questioning youths may be at greater risk for bullying victimization and mental health problems compared to their gay and lesbian peers.

Risk and Protective Factors for Bullying Victimization (Research Question 1)

Individual-Level Risk and Protective Factors

The current study hypothesized that SMY who used higher-levels of active forms of situational coping after experiencing an incident of bullying victimization would report lower overall frequencies of bullying victimization.¹³ Although this study was cross-sectional in nature, the underlying rationale for this hypothesis was SMY who attempted to actively problem-solve and seek out social support after experiencing incidents of bullying victimization were less likely to be bullied again in the future. This hypothesis, however, was not supported. SMY who reported utilizing higher levels of active forms of situational coping (i.e., "problem-focused coping" and "seeking social support") reported experiencing higher overall frequencies of bullying victimization (total and all types).

With one exception, problem-focused coping was not related to electronic bullying victimization among SMY. A possible explanation for this finding may involve the need

¹³ As discussed in Chapter 3, participants were instructed to remember back to a time in their lives where they experienced being bullied and report how often they used the following active and passive strategies to cope with that situation.

for SMY to seek out social support and actively look for solutions to stop or minimize the bullying victimization once it has reached a high level of frequency or severity (Coyne & Downey, 1991).

In addition, SMY who report utilizing a passive form of situational coping (i.e., “keeps-to-self”) experience higher frequencies of physical bullying victimization. Socially isolating behaviors (i.e., not being around other students) may be used by the youths to avoid future incidents of physical bullying victimization. Research from the general adolescent literature suggests the ways in which bullied youths cope impacts their likelihood of being revictimized and developing internalizing problems (Wilton, Craig, & Pepler, 2000). This is one of the first studies to examine the relationship between coping and the frequency of bullying victimization for SMY. More qualitative and quantitative research is needed to identify and explore the forms of coping that SMY report as effective in helping them reduce their frequency of bullying victimization and buffering them from any related mental health and academic consequences.

Family-Level Risk and Protective Factors

Among the family-related risk and protective factors, an important finding is the relationship between higher levels of child abuse and greater frequencies of bullying victimization. Specifically, SMY who report a history of emotional abuse experience higher frequencies of all types of bullying victimization except physical bullying. SMY with higher levels of physical abuse experience higher frequencies of physical bullying victimization. Last, SMY who report higher levels of sexual abuse experience higher frequencies of verbal and physical bullying. Interestingly, there were no significant

relationships between child neglect (emotional or physical) and bullying victimization by total or type among SMY.

The strong relationship between child abuse and bullying victimization in this study bring attention to the endorsement of childhood abuse histories in the sample. In the present study, 31.7% of SMY report severe to extreme emotional abuse, while 21.1% and 15.5% report severe to extreme physical and sexual abuse, respectively [see previous Figure 4 (Chapter 4, pg. 67)]. Using the same measure of child abuse and neglect as the current study, Scher, Stein, Asmundson, McCreary, and Forde (2001) developed normative data for the Child Trauma Questionnaire based on a community-based sample of young adults (18-24 years old). Using Scher et al.'s (2001) normative data for comparison, the SMY in the present study report substantially higher mean levels of child abuse and neglect placing them in the 90th percentile or higher for emotional abuse, physical abuse, sexual abuse, and emotional neglect, and the 75th percentile for physical neglect.

These findings are consistent with prior research. For example, child maltreatment research has identified some of the potential causal mechanisms connecting child abuse and revictimization in adulthood (Finkelhor, Ormrod, & Turner, 2007; Finkelhor, Ormrod, Turner, & Hamby, 2005; Finkelhor et al., 2009). Mental health problems have been empirically shown to mediate the relationship between child abuse and revictimization among general adolescent samples (Finkelhor et al., 2007, 2009; Friedman et al., 2011; Hong, Espelage, Grogan-Kaylor, & Allen-Meares, 2011). Future bullying research needs to examine the influences of child abuse and the related mental health consequences (e.g., psychological distress and emotional dysregulation), which

may place SMY at greater risk for bullying as victims and perpetrators (Hong et al., 2011).¹⁴ Furthermore, future research is needed to more broadly explore the influences of other forms of family-related violence (e.g., witnessing domestic violence and sibling aggression) as risk factors for revictimization at school for SMY (Baldry, 2003).

In relationship to practice, school-based, anti-bullying interventions need to incorporate a family-focused component to assess for histories of family-level verbal abuse (i.e., emotional child abuse) for SMY. This is needed to identify the sexual minority students who may be at the greatest risk for bullying victimization and require mental health services. Furthermore, the potential mental health consequences of child maltreatment may also be addressed by the addition of mental health screenings and referrals for mental health services to school-based, anti-bullying interventions. Mental health services may help to decrease levels of depression associated with bullying victimization, while also reducing anxiety-levels that may interfere with optimal peer interactions hindering the development of protective friendships (Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004; Whitted & Dupper, 2005). Evidence-based interventions such as Cognitive Behavioral Interventions for Trauma in Schools (CBITS) could be adapted for trauma-related to child maltreatment and revictimization at school for SMY (Cohen, Mannarino, Berliner, & Deblinger, 2000).

Although a relationship was found between child abuse and bullying victimization, family functioning was unrelated to bullying for SMY. This is not consistent with previous research with the general adolescent population, which has indicated that non-bullied youths have higher levels of family functioning (e.g., cohesion

¹⁴ Data from this study found psychological distress was a full mediator between child abuse and total bullying victimization. These findings were the basis for the PI's job talk, but were beyond the scope of this dissertation study.

and equality) than bullied youths (Bowers, Smith, & Binney, 1992, 1994). Unlike the general adolescent population, it is possible that family functioning is unrelated to the frequency of bullying victimization for SMY. Although this study utilized a general measure of bullying victimization, prior research has indicated that SMY are predominately bullied because of their known or perceived sexual orientation (Kosciw et al., 2009, 2010). As a result, the protective influences of positive family functioning may have no influence on the motivations (i.e., homophobia, heterosexism) that underlie the bullying victimization for this population. More knowledge is needed on the potential impact family functioning may have on differently motivated (e.g., sexual orientation, racism, sexism, ableism) forms of bullying victimization.

This finding may also be due to the study's utilization of an overall indicator of family functioning as opposed to examining the individual items or dimensions of functioning (e.g., equality, communication, cohesion, flexibility, enmeshment) that may be related to the frequency of bullying victimization for SMY. Future analyses are warranted that utilize item response theory to explore the individual items of the Family Adaptability and Cohesion Evaluations Scales IV that may identify aspects of family functioning relevant to bullying victimization for this population (van der Linden & Hambleton, 1997).

In addition to family functioning, parental support was not related to the frequency of bullying victimization for SMY. This finding is not consistent with previous research with the general adolescent population (Demaray & Malecki, 2003). The lack of a relationship between parental support and the frequency of bullying victimization for SMY may be due to the use of a general measure of support. General measures of

parental support may be insufficient to detect the specific aspects of parental support that do have a protective influence against bullying victimization. For example, a bullying specific measure of parental support may include items such as (1) how often do your parents drive you to and from school to help reduce bus-related bullying? (2) how often do your parents contact teachers and school staff after telling them you were bullied? and (3) how often do your parents contact the family members of the youth(s) who bullied you?

Peer and School-Level Risk and Protective Factors

As hypothesized, SMY who report higher levels of classmate support experience lower frequencies of total, verbal, relational, and physical bullying victimization. Classmate support includes acts of verbal encouragement, mutual respect, and active inclusion of SMY into group activities and class projects. As conceptualized for this study, classmate support appears to be a form of peer acceptance. In the general adolescent bullying literature, peer rejection has been identified as an important risk factor to future bullying victimization (Dill et al., 2004). Bullying is a social phenomenon where perpetrators are thought to victimize youths who are more isolated from and rejected by their peers, reducing the likelihood of any social repercussions for the perpetrator (Dill et al., 2004). More knowledge is needed on how classmate support, as a protective factor, is distinct from the risk factor of peer rejection. Furthermore, future research is needed on how school-based, anti-bullying interventions can help foster greater inclusion of and respect for SMY among heterosexual classmates.

Additionally, SMY who report attending schools with a more positive school climate had lower frequencies of total, verbal, relational, and physical bullying victimization. As conceptualized for the current study, positive school climate involved perceptions of schools that proactively address bullying behavior in classrooms and the larger school environment. Further, positive school climate includes helpful, friendly, and respectful relationships between teachers, students, and staff. More knowledge is needed on the mechanisms by which school-based, anti-bullying interventions can be used to help shape school environments so that they are more responsive to bullying victimization and respectful toward sexual minority students. For example, future research is needed on the impact anti-bullying and anti-discrimination policies—specific language protecting sexuality and gender identity for students, employment protections for sexual minority staff and teachers—have on rates of bullying victimization for SMY and classmate perceptions of sexual minority students. Last, future research is needed to explore how the following factors foster a positive school climate for SMY: (1) participation in a Gay Straight Alliance, (2) administrative and classmate support for national efforts against sexual minority bullying victimization (e.g., Day of Silence), (3) the adoption of sexual minority inclusive curriculums, and (4) the visibility of sexual minority staff and teachers.

For the current study, electronic bullying victimization was not related to positive school climate or the level of classmate support for SMY. Electronic bullying victimization may be distinct from verbal, relational, and physical bullying victimization in that it extends beyond the traditional physical boundaries of school and may require tailored and innovative solutions for prevention. Research is needed to identify the

potentially unique risk and protective factors for electronic bullying victimization: (1) parental supervision of online activities, (2) schools with specific policies against online forms of bullying, (3) trainings for school teachers and staff to discuss the use of electronic devices and social networking websites, and (4) new online or electronic means to monitor and report bullying inside and outside of school.

Besides classmate support and positive school climate, friend and teacher support were not related to bullying victimization by total or type for SMY. As previously discussed, general measures of support may be unable to detect the protective influences of these constructs. For example, this general measure of friend support primarily assessed emotional support (e.g., “my close friends help me when I need it” and “my close friends help me when I’m lonely”), while the measure of teacher support assessed emotional and educational support (e.g., “my teachers care about me” and “my teachers make time to help me learn to do something well”). Future research is needed to identify the specific aspects of friend support (e.g., intervening in incidents of bullying, reporting incidents of bullying victimization, walking their friend home) and teacher support (e.g., creating safe spaces for sexual minority students) that may reduce bullying victimization and its negative mental health and academic consequences.

In addition to general measures of support, it is possible that friend support is unrelated to the frequency of bullying victimization as conceptualized for this study. As suggested by the general adolescent bullying literature, all friendships are not created equal (e.g., quality, reciprocity, satisfaction, social popularity) in terms of their potential protective abilities against bullying victimization (Hodges, Malone, & Perry, 1997; Perry et al., 2001). More knowledge is needed on the particular aspects of friendships that may

have a protective influence against bullying victimization for SMY: (1) are friendships with non-bullied youths more protective than friendships with bullied youths? (2) are high quality, reciprocated friendships more protective than lower quality, less reciprocated ones? and (3) how large does one's friendship circle (i.e., number of friends) need to be before it exerts a protective influence (Hodges et al., 1997, Perry et al., 2001)?

Relationships among Bullying Victimization, Mental Health Problems, and Academic Outcomes (Research Question 2)

Mental Health Problems – Psychological Distress, Anxiety, and Depression

As hypothesized in research question 2, the most consistent and strongest findings in the present study are that SMY who report higher frequencies of bullying victimization also experience higher levels of psychological distress, anxiety, and depression. These findings are consistent with previous research and provide support for the profound impact that bullying victimization may have on the mental health of SMY (Fedewa & Ahn, 2011; Varjas et al., 2008). However, it is unclear whether bullying victimization leads to mental health problems or whether mental health problems increase vulnerability to bullying victimization. This relationship is most likely bi-directional in nature and future studies with larger sample sizes are needed that utilize longitudinal designs or alternative research techniques (e.g., propensity score methods, structural equation modeling) that are better suited to assess for causality and the potential bidirectional

influences between bullying victimization and mental health problems (Dehejia & Wahba, 2002; Pearl, 2000).¹⁵

If bullying victimization is a risk factor for mental health problems, more knowledge is needed on the mechanisms that may explain this potential causal relationship. The general adolescent literature has identified two potential causal mechanisms that remain unexplored with SMY: (1) physiological responses to stress and (2) cognitive distortion (Arseneault et al., 2010). SMY may possess individual differences in their physiological responses to stress with some bullied youths becoming hyper- or hyposensitive to stress, which may result in the onset of mental health problems (Heim et al., 2000). Currently, no research exists on the variability SMY exhibit in their physiological stress responses to bullying victimization or other adverse experiences (e.g., emotional child abuse). In addition, bullying victimization may lead to cognitive distortions in how bullied SMY interpret their interpersonal environment. For example, SMY may wrongly attribute the causes of bullying victimization to themselves and believe these causes will continue to adversely impact them throughout their entire lives (Kinderman & Bentall, 1996; Kochenderfer-Ladd & Ladd, 2001). Cognitive distortions (e.g., attributional biases) as mediating or causal factors between bullying victimization and mental health problems remain unexplored with SMY.

School-based, anti-bullying interventions may continue to see modest reductions in bullying victimization if they do not address the mental health problems that may maintain a cycle of peer rejection and ongoing bullying victimization for SMY (Hong et al., 2011). Individual-level intervention components are needed to assess for and address

¹⁵ The present study did not have a sufficient sample size to utilize propensity score methods or structural equation modeling. Future studies will need to utilize a larger sample size of SMY to explore the possible bidirectional influences between bullying victimization and mental health problems.

the mental health problems of bullied SMY. This may have the dual benefit of addressing the mental health problems that are potential consequences of bullying victimization and a risk factor for its continuation (Baldry, 2003; Birkett et al., 2009; Espelage et al., 2008; Hong et al., 2011).

An important contribution of the present study was to examine the types of bullying victimization (i.e., verbal, relational, electronic, and physical) that SMY may experience and their relationship to mental health problems. For SMY, a consistent pattern was observed with physical bullying victimization having the strongest relationships with psychological distress, anxiety, and depression followed by verbal, relational, and electronic. Electronic bullying victimization had the weakest relationships across all four types of bullying victimization for SMY. As discussed above, this consistent pattern may relate to the potentially greater impact physical forms of bullying victimization have on physiological stress responses (Arseneault et al., 2010; Heim et al., 2000). Physical bullying victimization may elicit the highest levels of stress and increase the likelihood of developing poorer mental health outcomes compared to indirect types of bullying (e.g., relational and electronic bullying). As a result, school-based, anti-bullying interventions may need to focus more heavily on SMY who experience physical bullying victimization given its potentially stronger relationship to psychological distress, anxiety, and depression in comparison to the other types.

Suicidal Ideation and Suicide Attempts

Recent national attention was brought to bear on bullying victimization in the United States because of the prominent suicides of several sexual minority adolescents

(Savage & Miller, 2011). As hypothesized, SMY who report higher frequencies of bullying victimization (total and type) are more likely to seriously consider suicide and attempt suicide within the last year. As discussed earlier, the general adolescent literature suggests that youths who develop mental health problems are more likely to attribute the causes for their bullying to themselves and often believe these causes to be immutable, uncontrollable, and stable (Kochenderfer-Ladd & Ladd, 2001). As a result, SMY may believe their bullying victimization will only continue and have little hope that it will eventually stop. More knowledge is needed on the potential differences in attributional biases between bullied SMY who endorse indicators of suicide (i.e., ideation and attempts) and those who do not.

A similar pattern emerged in that SMY who experienced higher frequencies of physical bullying victimization had the highest likelihood of reporting suicidal ideation and suicide attempts compared to the other types of bullying. Unexpectedly, no relationship was found between bullying victimization (total and type) and having made a suicide plan in the last year for SMY. This finding may be explained by the age of the participants; research suggests that adolescents tend to be more reactive and spontaneous in their suicide behaviors and less likely to make a suicide plan compared to adults (Brener, Krug, & Simon, 2010; Brent, Baugher, Bridge, Chen, & Chiappetta, 1999). It is possible that this finding could be explained by a sampling bias, where the study failed to include SMY who were at the greatest risk for suicide. Although this remains a possibility, the percentages from the current study of SMY who report seriously considering suicide (38.7%), making a suicide plan (23.4%), and attempting suicide (13.7%) in the last year would suggest otherwise.

Because of the connection between bullying victimization and suicide risk for SMY, primary prevention of bullying victimization is critical for reducing suicidal ideation and suicide attempts among sexual minority students. Prevention efforts begin with the adoption of school-based, anti-bullying policies that provide specific protections for sexuality and gender identity that have been shown to reduce rates of bullying victimization for SMY (Kosciw et al., 2009; Kosciw & Diaz, 2006; Kosciw, Diaz, & Greytak, 2008). In addition, school-based, anti-bullying interventions need to provide information on telephone and internet-based suicide support hotlines specific to the needs of SMY (Baldry, 2003; Espelage & Swearer, 2003, 2004, 2008). The Trevor Project Hotline is an example of such a resource (Trevor Project, 2012). In addition, school-based, anti-bullying interventions need to include an individual-level component to assess for the suicide risk of all students (sexual minority and non-sexual minority) who formally report incidents of bullying victimization.

Grade Performance, School Absences, and Disciplinary Actions

In addition to mental health problems, SMY who reported higher frequencies of bullying victimization experienced significantly lower grades and a higher number of disciplinary actions. School-based, anti-bullying interventions may want to screen youths with reductions in grade performance and increases in disciplinary actions for recent experiences of bullying victimization. Prior research identifies possible mechanisms that may explain the relationships between bullying victimization and grade performance and disciplinary actions. For example, bullied SMY report higher-levels of feeling unsafe in school and lower-levels of school engagement compared to non-bullied SMY (Kosciw et

al., 2010). Feeling unsafe and disengaged in school may adversely affect SMY's ability to perform well academically.

In addition, a longitudinal study with a general adolescent sample identified bullying victimization as a risk factor for externalizing behaviors (e.g., disciplinary actions, bullying perpetration, substance use, risky sexual behaviors; Arseneault et al., 2010; Nansel, Overpeck, Haynie, Ruan, & Scheidt, 2003). At present, few studies have examined the externalizing behaviors related to bullying victimization among SMY. In fact, few studies exist that ask SMY if they have ever engaged in bullying perpetration. Although beyond the scope of this dissertation, the PI collected data on bullying perpetration (i.e., verbal, relational, electronic, and physical) among SMY and will examine it for future manuscripts to help fill this important research gap.

Similarly to mental health problems, physical bullying victimization was found to be the strongest predictor of reduced grade performance among SMY followed by relational and verbal bullying. Electronic bullying victimization was not related to grades, absences, or the number of detentions and suspensions for SMY. As discussed previously, the indirect nature of electronic victimization may elicit less stress and trauma than direct forms of bullying victimization (i.e., physical and verbal; Arseneault et al., 2010). For SMY, more knowledge is needed on perceptions of severity for electronic bullying victimization compared to verbal, relational, and physical. Furthermore, electronic bullying victimization may be unrelated to academic outcomes, because it is less of a school-based phenomenon than direct forms of bullying victimization, which are confined to the physical boundaries of the school environment. Future research is needed

to explore the unique psychosocial and behavioral problems that may be related to electronic bullying victimization.

In addition to grade performance and disciplinary actions, SMY who reported higher frequencies of bullying victimization (total and type) did not experience a greater number of school absences. This is a surprising finding because previous research indicates that higher levels of bullying victimization are related to feeling unsafe at school and greater absenteeism among SMY (Kosciw et al., 2008). This study utilized a single-item measure of school absences, which may not have included all forms of absenteeism such as skipping individual classes as opposed to missing entire days of school. Future research is needed to examine the relationship between bullying victimization and school absences among SMY with a bullying victimization specific, multi-item measure.

Modifiable Risk and Protective Factors for Bullying Victimization and Mental Health Problems and Academic Outcomes (Research Question 3)

This study included exploratory analyses to investigate the potential moderating effects of MRPF on the relationships between bullying victimization and mental health problems and academic outcomes. The MRPF examined in the present study were chosen from previous empirical research on bullying victimization with general adolescent and sexual minority youth populations and included factors from four social-ecological levels (i.e., individual, family, peer, and school). As discussed in Chapter 4, the final multiple regression models identified two significant moderators: parent support (dependent

variable: psychological distress) and classmate support (dependent variable: grade performance).¹⁶

Parent Support

The study proposed that SMY who reported high-levels of parental support and bullying victimization would have lower levels of psychological distress compared to counterparts who reported having less parental support (Stadler, Feifel, Rohrman, Vermeiren, & Poustka, 2010). The findings from the current study indicated that parental support was a significant moderator, but not in the anticipated direction. At a low frequency of bullying victimization, SMY who reported receiving high levels of parental support had better mental health (i.e., less psychological distress) compared to SMY who reported receiving lower levels of parental support. However, as the frequency of bullying victimization increased, parental support appeared to be unable to buffer SMY from greater psychological distress. In other words, SMY had roughly the same levels of psychological distress at higher frequencies of bullying victimization regardless of how much parental support they reported receiving. Parent support appeared to be a protective factor for bullying victimization but only when SMY experienced a low frequency of bullying.

This finding is contradictory with prior research that found parental support moderated the relationship between bullying victimization and internalizing problems (Davidson & Demaray, 2007; Stadler et al., 2010). Prior research with the general adolescent population suggests the moderating influence of parental support may be the

¹⁶ Research question 3 was an exploratory question and involved examining seventy-seven three factor models (Appendix A). The findings should be interpreted with caution because of the possibility that the significant findings occurred by chance (i.e., type I error).

strongest among bullied girls (Davidson & Demaray, 2007; Stadler et al., 2010). Future analyses need to be conducted that explore potential three-way interactions between demographics (e.g., gender, race/ethnicity, sexual identity), bullying victimization, and parental support on psychological distress for SMY. These analyses were beyond the scope of this dissertation study.

This finding from the current study is consistent, however, with previous research by Hershberger and D'Augelli (1995) who found parental support (e.g., acceptance, protection, and positive relations) moderated the relationship between bullying victimization and mental health, but only for low levels of bullying victimization. These findings suggest that parent support may be limited in its ability to buffer SMY from the negative mental health consequences associated with higher frequencies of bullying victimization. As discussed previously, it is possible that general measures of parental support are not capturing the protective influence of this construct. Future research is needed to determine the specific forms of parental support that may have a positive impact on this important public health problem.

Classmate Support

In addition to parental support, the findings suggest classmate support is a potential protective factor for SMY against poorer mental health problems and academic outcomes (Davidson & Demaray, 2007; Stadler et al., 2010). Specifically, as the frequency of bullying victimization increases, SMY who report higher levels of classmate support report less of a decline in their grade performance than youths with lower levels of classmate support. Classmate support was assessed by asking items such as “my

classmates ask me to join activities” and “my classmates help me with projects in class”. In addition to the moderating influence of classmate support on bullying victimization and grade performance, SMY who report higher-levels of classmate support are less likely to report seriously considering suicide in the last year.

These findings are consistent with previous research with the general adolescent population, indicating higher grade performance and less suicidal ideation among students reporting higher-levels of classmate support (Bosworth, Espelage, & Simon, 1999; Davidson & Demaray, 2007; Dill et al., 2004; Espelage et al., 2008). The active inclusion of SMY into group activities and class projects by classmates may be a potential mechanism by which classmate support exerts a protective influence against bullying victimization on grade performance. As discussed previously, future research is needed on how anti-bullying interventions can foster greater inclusion of SMY among their heterosexual classmates.

The protective factor of classmate support has direct application to school-based, anti-bullying interventions. For example, KiVa is an evidence-based, anti-bullying intervention that has been widely adopted in Finland and shown to be effective in a large randomized controlled trial in reducing self- and peer-reported bullying victimization and mental health problems of victims (anxiety and depression; Hahn et al., 2007; Kärnä et al., 2011; Williford et al., 2012). Reductions in bullying victimization were found across multiple types (verbal, electronic, and physical). One of the main aspects of KiVa is its focus on changing the culture of bullying by working to increase classmate support and the rate at which classmates intervene to stop bullying incidents (Kärnä et al., 2011;

Williford et al., 2012). These anti-bullying efforts are targeted toward all students not just the bully and the victim.

KiVa, however, has not yet been adapted to meet the specific needs of SMY. To increase classmate support and the rate at which classmates intervene to stop acts of bullying victimization targeted at sexual minority students, school policies are needed that provide specific protections for sexuality and gender identity. Furthermore, school-based, anti-bullying interventions such as KiVa need to include educational components that speak to the forms of oppression (e.g., homophobia, heterosexism) that often exist in school environments and may hinder classmates from supporting their sexual minority peers and acting to stop incidents of bullying victimization.

In addition to anti-bullying interventions, future research is needed to determine how much classmate support is required before it begins to exert a protective influence against negative outcomes related to bullying victimization. For example, “What level of involvement with classmates is needed to elicit the protective influence of classmate support?” This line of inquiry will provide more intuitive means in which to discuss the meaning of low, medium, and high levels of classmate support, and provide guidance to practitioners on how to better develop peer-level supports for bullied SMY.

Situational Coping

Although this study examined the moderating influence of MRPF, the identification of main effects opens the possibility for future research on the potential mediating factors that may explain the relationship between bullying victimization and mental health problems. The current study suggests the manner in which SMY attempt to

cope with bullying victimization may have an important impact on their mental health. For example, passive forms of situational coping were found to be related to psychological distress. Specifically, SMY who report using higher-levels of social isolation (i.e., “keeps-to-self”) and escaping into fantasy (i.e., “wishful thinking”) to cope with incidents of bullying victimization experience higher-levels of psychological distress after controlling for the frequency of total bullying victimization. The exploration of potential mediators between bullying victimization and mental health and academic outcomes was beyond the scope of this study, but future research is needed in this area for SMY.

Limitations of the Present Study

This study contributed to the literature by exploring the risk and protective factors for bullying victimization identified in the general adolescent literature that remained largely unexplored with SMY. However, this study has several limitations related to sampling, study design, measurement, and the use of self-report data.

Sampling

The study utilized a convenience sample recruited from two community-based organizations located in the Midwest between April to November of 2011. Convenience samples are advantageous in terms of overall cost and are the norm for research for SMY and other hard to reach subpopulations (Schwarcz, Spindler, Scheer, Valleroy, & Lansky, 2007). The sampling frame included 15-19 year old youths who self-identified as non-heterosexual (i.e., gay, lesbian, bisexual, queer, questioning, pansexual, and other) and

were currently not living in foster care. This convenience sample impacts generalizability such that the findings can only be generalized to other SMY who participate in programming or services offered at similar Midwest, community-based organizations. SMY who attend community-based organizations may be distinct from the larger population of SMY, as they may self-identify at an earlier age and may be more visible at school placing them at greater risk for bullying victimization (Savin-Williams, 2001). As discussed previously, bisexual and questioning youths may also be less likely to attend these types of community-based organizations.

A convenience sample also has the potential for self-selection bias where only certain SMY choose to participate in the study (Heckman, 1977). Self-selection bias appeared to be minimal for this study as the majority of youths who were approached agreed to participate. However, the time burden of the interview (approximately one hour) may have kept a small number of youths from participating in the study. For example, the study had one youth who declined to participate, stating her attention deficit/hyperactivity disorder made it impossible for her to pay attention for a full hour.

Despite these concerns, this study did find the same general trend of bullying victimization as a previous national-level study of SMY, with verbal victimization as the most frequent type followed by relational, electronic, and physical (Kosciw, et al., 2010). In addition, the current study found frequencies of bullying victimization within the last school year that were roughly comparable to this larger national-level study. Last, the strong relationships found between bullying victimization (total and all types) and mental health problems suggest the current findings can be generalized to a national-level sample of SMY.

Study Design

This study utilized a cross-sectional design to investigate the influences of risk and protective factors on bullying victimization and related mental health problems and academic outcomes. A longitudinal design would have been ideal because of the time ordering implied by the study's schematic and hypotheses [see previous Figure 2 (Chapter 1, pg. 7)]. A cross-sectional approach was utilized, however, because of time and resource limitations for this dissertation study.

Unfortunately, cross-sectional designs are limited in their ability to test for causal pathways and the potential bi-directional influences among risk and protective factors, bullying victimization, and mental health problems and academic outcomes. For example, prior research suggests that a high frequency of bullying victimization leads to increased maladjustment (Bontempo & D'Augelli, 2002). It is equally possible, however, that higher levels of maladjustment (e.g., depression, anxiety) place SMY at risk for higher frequencies of bullying victimization (Hong et al., 2011). Future longitudinal studies or alternate research techniques (e.g., propensity score methods, structural equation modeling) are needed to investigate these potential causal links and bidirectional relationships (Dehejia & Wahba, 2002; Pearl, 2000).

In addition to the study's cross-sectional design and limitations related to causal inference, research question 3 was exploratory and involved conducting a large number of multiple regression models. The findings should be interpreted with caution because of the possibility that the significant moderators could have occurred by chance (i.e., type I error).

Measurement

No gold standard measure of bullying victimization currently exists. Current measures fail to simultaneously assess for the presence of a power imbalance between the bully and victim, the duration or chronicity of the bullying victimization (e.g., weeks, months, grade years, developmental periods), the subjective severity of each incident, the type or form of bullying victimization (e.g., verbal, relational, electronic, and physical), and the content or motivation behind the bullying victimization (e.g., sexism, heterosexism, racism, ableism).

The measure utilized for this study captured type and frequency but failed to assess the other aspects of this construct. Specifically, the current study utilized a general measure of bullying victimization as opposed to a sexual orientation specific measure. The rationale for the use of a general measure of bullying victimization was that SMY cannot always know the motivation behind being ostracized by a social group or being pushed in the hallway. The use of a general measure helped to ensure the frequency of bullying victimization was not under estimated for this population. However, prior research has indicated that homophobic bullying victimization may have a greater impact on mental health problems as compared to racist or sexist motivated bullying victimization (Chan, 2009; Espelage et al., 2008).

Self-Report Data

This study utilized self-report as opposed to a multi-informant approach to assess bullying victimization, mental health problems, and academic outcomes. Previous research with general adolescent populations often employs a multi-informant approach

in its assessment of bullying victimization and mental health and academic outcomes (Pellegrini, 2001). For example, self-report, teacher-report, and peer nominations are used to triangulate a more accurate assessment of the prevalence of bullying victimization (Pellegrini, 2001). This more rigorous method was not used in the current study and has rarely been employed in researching bullying victimization among SMY. As discussed previously, future research is needed utilizing a large, school-based sample to capture the full range of SMY (e.g., gay, lesbian, bisexual, queer, questioning) and to obtain more accurate frequencies of bullying victimization utilizing a multi-informant approach.¹⁷

A key advantage to a multi-informant approach is it allows for the assessment of the level of peer rejection from one's actual peers (Pellegrini, 1998, 2001). Peer rejection is theorized in the general adolescent literature as a potential mediator between risk factors (e.g., sexual orientation, child abuse and neglect, mental health problems) and subsequent bullying victimization (Hong et al., 2011). The potential mediator of peer rejection remains largely unexplored with SMY. Future research is needed to address this important gap.

Furthermore, this study's use of self-report as opposed to a multi-informant design may threaten its internal validity (Rust & Golombok, 1989). Pellegrini (2011) recommended that the dependent (e.g., mental health) and predictor (e.g., bullying victimization) variables be assessed by different informants to counteract the effects of shared method variance, which may lead to an over-reporting of bullying victimization and psychosocial dysfunction. For example, psychologically distressed youths may over-

¹⁷The use of multi-informants with SMY involves utilizing self-report measures to assess sexual orientation and indicators of mental health, while utilizing teacher-report, peer nomination, and self-report to measure the frequency of bullying victimization.

report or misinterpret ambiguous negative events as bullying victimization (Huebner, Rebchook, & Kegeles, 2004).

Self-report data are also susceptible to memory recall and social desirability biases (Coughlin, 1990; King & Bruner, 1999). The current study attempted to limit memory recall bias by recruiting adolescents between the ages of 15 to 19 and asking about bullying victimization that occurred within the last school year. Although the current study is still susceptible to memory recall bias, it is a major improvement over the majority of previous studies, which asked young sexual minority adults to recollect about frequencies of bullying victimization during their middle and high school years (Rivers, 2000, 2001, 2004; Rivers & Carragher, 2003). In addition, definitions of bullying victimization were read prior to each section and items were behaviorally specific (i.e., called me names, pushed or shoved me) versus general concepts of bullying victimization (e.g., how often were you verbally bullied), which are more prone to memory recall bias (Bifulco and Morgan, 1998).

In addition, social desirability was minimized by reminding the youths that the survey questions had no right or wrong answers during the assent/consent process and at the beginning of each survey section. The participants were also informed in detail about the measures being taken to ensure their privacy and confidentiality, including the study's Certificate of Confidentiality issued by the National Institute of Child Health and Human Development.

Summary and Conclusion

Despite these limitations, this study is one of the first to examine the protective factors (i.e., forms of situational coping, family functioning, social support, and positive school climate) present in the lives of SMY. This strengths-based approach helps to address a criticism common among SMY studies that often over relies on a deficit approach when examining frequencies of bullying victimization and mental health problems and academic outcomes (Saleebey, 1996). Second, this study examined the within group differences among a sample of SMY as opposed to comparing them to a heterosexual control group. This study builds upon the general bullying literature by exploring modifiable and non-modifiable risk and protective factors for bullying victimization and maladjustment that remained largely unexplored with SMY.

Findings from this study identified important risk factors for bullying victimization and mental health problems among SMY. In terms of sexual identity, bisexual youths appeared to be at greater risk for suicidal ideation than their gay and lesbian counterparts. Furthermore, multiracial SMY appear to be at greater risk for bullying victimization in comparison to their single-race identified counterparts. In addition, emotional, physical, and sexual child abuse may be important risk factors for higher frequencies of bullying victimization for SMY.

The findings from this study have implications for researchers, practitioners, and policy makers. Classmate support was found to be a protective factor reducing suicidal ideation and the influence of total bullying victimization on grade performance. Furthermore, SMY who attended a school with a more positive school climate experienced lower frequencies of all types of bullying victimization except for electronic.

These findings suggest school-based, anti-bullying interventions similar to KiVa that leverage friend and classmate support may be effective in reducing rates of bullying victimization for SMY.

Federal and state policies are needed that require schools to (1) adopt anti-bullying policies providing explicit protections for sexual minority students, (2) utilize evidence-based interventions (e.g., KiVa) with tailored content specific to the needs of sexual minority students, and (3) conduct annual evaluations of school climates to ensure students are safe and free from bullying victimization and discrimination. Along these lines, continued political advocacy is needed to ensure the passage of the Student Non-Discrimination Act first proposed in 2011 that was designed to ensure “that all students have access to public education in a safe environment free from discrimination, including harassment, bullying, intimidation, and violence, on the basis of sexual orientation or gender identity” (H.R. 998—112th Congress: Student Non-Discrimination Act of 2011, 2011).

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Appendix A: Summary of Non-Significant and Significant Regression Models with Moderators Predicting Mental Health Problems and Academic Outcomes

Table 1 (Appendix A). Results of Three-Variable Multiple Regression Models Identifying Significant Interaction Terms on Psychological Distress

	Type I SS	F	ΔR^2	<i>b</i>	SE	<i>t</i>	β	Model
Individual-Level Moderators								
Model 1								
Total Bullying Victimization (TBV)	9.70	20.97***	.1430	.221	.055	4.03***	.339	$F(3,119) = 9.21***$ N = 123; $R^2 = .1884$
Detachment Coping (DC)	2.62	5.67*	.0387	.219	.100	2.20*	.187	
TBV*DC	0.46	0.98	.0067	.074	.075	0.99	.083	
Model 2								
TBV	9.70	24.84***	.1430	.210	.051	4.08***	.321	$F(3,119) = 18.25***$ N = 123; $R^2 = .3151$
Keeps-to-Self Coping (KSC)	11.66	29.84***	.1718	.391	.072	5.45***	.418	
TBV*KSC	0.02	0.06	.0003	-.015	.060	-0.25	-.019	
Model 3								
TBV	9.68	19.97***	.1430	.221	.059	3.75***	.338	$F(3,118) = 7.24***$ N = 122; $R^2 = .1554$
Problem-Focused Coping (PFC)	0.45	0.93	.0066	.159	.141	1.12	.101	
TBV*PFC	0.39	0.81	.0058	.107	.119	0.90	.078	
Model 4								
TBV	9.70	19.94***	14.29	.240	.057	4.18***	.338	$F(3,119) = 6.83***$ N = 123; $R^2 = .1468$
Seeking Social Support Coping (SSSC)	0.01	0.01	.0001	.017	.101	0.17	.101	
SSSC*TBV	0.26	0.52	.0038	.065	.090	0.72	.078	
Model 5								
TBV	9.70	24.23***	.1430	.220	.051	4.31***	.337	$F(3,119) = 16.83***$ N = 123; $R^2 = .2979$
Wishful Thinking Coping (WTC)	10.16	25.37***	.1497	.423	.086	4.93***	.384	
WTC*TBV	0.35	0.88	.0052	-.069	.074	-0.94	-.073	
Family-Level Moderators								
Model 6								
TBV	9.70	22.03***	.1430	.231	.053	4.38***	.354	$F(3,119) = 11.69***$ N = 123; $R^2 = .2277$
Parent Support (PS)	1.47	3.33†	.0216	-.008	.004	-1.89	-.152	
TBV*PS	4.28	9.71*	.0631	.012	.004	3.12**	.252	

	Type I SS	F	ΔR^2	<i>b</i>	SE	<i>t</i>	β	Model
Model 7								
TBV	10.05	21.26**	.1464	.245	.055	4.48***	.373	<i>F</i> (3,120) = 8.42*** N = 124; <i>R</i> ² = .1738
Family Functioning (FF)	1.49	3.16†	.0217	.463	.463	-1.72†	-.143	
TBV*FF	0.39	0.84	.0057	.402	.402	0.91	.076	
Peer-Level Moderators								
Model 8								
TBV	9.70	20.01***	.1430	.247	.055	4.46***	.378	<i>F</i> (3,119) = 6.97*** N = 123; <i>R</i> ² = .1495
Friend Support (FS)	0.24	0.49	.0035	-.005	.007	-0.77	-0.07	
TBV*FS	0.21	0.43	.0030	.004	.006	0.65	.056	
Model 9								
TBV	9.70	21.05***	.1430	.251	.057	4.43***	.384	<i>F</i> (3,119) = 9.41*** N = 123; <i>R</i> ² = .1917
Classmate Support (CS)	0.98	2.12	.0143	-.008	.006	-1.48	-.126	
TBV*CS	2.33	5.06*	.0344	.010	.004	2.25*	.189	
School-Level Moderators								
Model 10								
TBV	9.70	19.92***	.1430	.243	.056	4.31***	.372	<i>F</i> (3,119) = 6.78*** N = 123; <i>R</i> ² = .1459
Teacher Support (TS)	0.17	0.34	.0024	-.003	.006	-0.59	-.050	
TBV*TS	0.03	0.07	.0005	.001	.005	0.27	.023	
Model 11								
TBV	9.70	20.26***	.1430	.251	.057	4.43***	.384	<i>F</i> (3,119) = 7.56*** N = 123; <i>R</i> ² = .1244
School Climate (SC)	0.15	0.03	.0021	-.004	.011	-0.37	-.032	
TBV*SC	1.01	2.12	.0149	.013	.009	1.45	.124	

†*p*<.10, **p*<.05, ***p*<.01, ****p*<.001

Table 2 (Appendix A). Results of Three-Variable Multiple Logistic Regression Models Identifying Significant Interaction Terms on Seriously Considered Attempting Suicide in the Last 12 Months

	Coefficient	SE	Z	Model
Individual-Level Moderators				
Model 1				
Total Bullying Victimization (TBV)	0.50	0.18	2.77**	$\chi^2(3) = 11.77^{***}$ N = 123
Detachment Coping (DC)	0.48	0.18	2.77	
TBV*DC	-0.07	0.25	-0.27	
Model 2				
TBV	0.51	0.18	2.77**	$\chi^2(3) = 11.92^{***}$ N = 123
Keeps-to-Self Coping (KSC)	0.38	0.25	1.49	
TBV*KSC	-0.09	0.22	-0.42	
Model 3				
TBV	0.54	0.19	2.83**	$\chi^2(3) = 10.77^{**}$ N = 122
Problem-Focused Coping (PFC)	-0.23	0.44	-0.52	
TBV*PFC	0.36	0.39	0.94	
Model 4				
TBV	0.62	0.19	3.30**	$\chi^2(3) = 13.25^{***}$ N = 123
Seeking Social Support Coping (SSSC)	-0.55	0.33	-1.69†	
SSSC*TBV	-0.24	0.29	-0.82	
Model 5				
TBV	0.53	0.18	2.92**	$\chi^2(3) = 12.21^{***}$ N = 123
Wishful Thinking Coping (WTC)	0.41	0.31	1.34	
WTC*TBV	-0.26	0.27	-0.98	
Family-Level Moderators				
Model 6				
TBV	0.53	0.18	2.89**	$\chi^2(3) = 12.65^{***}$ N = 123
Parent Support (PS)	-0.01	0.02	-0.78	
TBV*PS	0.02	0.01	1.57	

	Coefficient	SE	Z	Model
Model 7				
TBV	0.51	0.18	2.88**	$\chi^2(3) = 11.08^{**}$ N = 123
Family Functioning (FF)	-1.81	1.52	-1.20	
TBV*FF	0.37	1.33	0.28	
Peer-Level Moderators				
Model 8				
TBV	0.52	0.18	2.95**	$\chi^2(3) = 10.18^{**}$ N = 123
Friend Support (FS)	-0.01	0.02	-0.56	
TBV*FS	0.01	0.02	0.68	
Model 9				
TBV	0.43	0.19	2.03*	$\chi^2(3) = 15.03^{***}$ N = 123
Classmate Support (CS)	-0.04	0.02	-2.25*	
TBV*CS	0.00	0.02	-0.14	
School-Level Moderators				
Model 10				
TBV	0.53	0.18	2.97**	$\chi^2(3) = 10.54^{**}$ N = 123
Teacher Support (TS)	-0.01	0.02	-0.81	
TBV*TS	-0.01	0.02	-0.47	
Model 11				
TBV	0.55	0.19	2.97**	$\chi^2(3) = 10.77^{**}$ N = 123
School Climate (SC)	0.03	0.04	0.83	
TBV*SC	-0.02	0.03	-0.77	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3 (Appendix A). Results of Three-Variable Multiple Logistic Regression Models Identifying Significant Interaction Terms on Made a Suicide Plan in the Last 12 Months

	Coefficient	SE	Z	Model
Individual-Level Moderators				
Model 1				
Total Bullying Victimization (TBV)	0.20	0.36	1.04	$\chi^2(3) = 1.56$ N = 123
Detachment Coping (DC)	-0.24	0.19	-0.67	
TBV*DC	-0.08	0.26	-0.32	
Model 2				
TBV	0.25	0.20	1.26	$\chi^2(3) = 4.15$ N = 123
Keeps-to-Self Coping (KSC)	0.20	0.29	0.69	
TBV*KSC	-0.40	0.24	-1.69*	
Model 3				
TBV	0.21	0.20	1.06	$\chi^2(3) = 2.81$ N = 122
Problem-Focused Coping (PFC)	0.07	0.49	0.14	
TBV*PFC	-0.57	0.43	-1.33	
Model 4				
TBV	0.21	0.19	1.09	$\chi^2(3) = 2.01$ N = 123
Seeking Social Support Coping (SSSC)	-0.13	0.25	-0.37	
SSSC*TBV	-0.32	0.31	-1.02	
Model 5				
TBV	0.24	0.20	1.22	$\chi^2(3) = 6.53^\dagger$ N = 123
Wishful Thinking Coping (WTC)	0.48	0.37	1.28	
WTC*TBV	-0.61	0.30	-2.02*	
Family-Level Moderators				
Model 6				
TBV	0.15	0.19	0.82	$\chi^2(3) = 1.70$ N = 123
Parent Support (PS)	-0.00	0.02	-0.05	
TBV*PS	0.02	0.01	0.91	

	Coefficient	SE	Z	Model
Model 7				
TBV	0.17	0.19	0.89	$\chi^2(3) = 1.44$ N = 123
Family Functioning (FF)	-1.23	1.68	-0.73	
TBV*FF	0.32	1.39	0.23	
Peer-Level Moderators				
Model 8				
TBV	0.16	0.19	0.82	$\chi^2(3) = 1.59$ N = 123
Friend Support (FS)	0.02	0.02	0.82	
TBV*FS	0.01	0.02	0.35	
Model 9				
TBV	-0.02	0.22	-0.11	$\chi^2(3) = 6.19$ N = 123
Classmate Support (CS)	-0.04	0.02	-1.77	
TBV*CS	-0.02	0.02	-1.29	
School-Level Moderators				
Model 10				
TBV	0.16	0.19	0.83	$\chi^2(3) = 1.07$ N = 123
Teacher Support (TS)	-0.00	0.02	-0.23	
TBV*TS	0.01	0.02	0.42	
Model 11				
TBV	0.07	0.20	0.33	$\chi^2(3) = 4.28$ N = 123
School Climate (SC)	-0.07	0.04	-1.68	
TBV*SC	-0.02	0.03	-0.76	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4 (Appendix A). Results of Three-Variable Multiple Logistic Regression Models Identifying Significant Interaction Terms on Attempted Suicide in the Last 12 Months

	Coefficient	SE	Z	Model
Individual-Level Moderators				
Model 1				
Total Bullying Victimization (TBV)	0.66	0.24	2.80**	$\chi^2(3) = 9.08^*$ N = 123
Detachment Coping (DC)	-0.42	0.50	0.82	
TBV*DC	-0.10	0.32	-0.31	
Model 2				
TBV	0.72	0.25	2.86*	$\chi^2(3) = 9.70^*$ N = 123
Keeps-to-Self Coping (KSC)	0.01	0.39	0.01	
TBV*KSC	-0.39	0.30	-1.28	
Model 3				
TBV	0.70	0.25	2.84**	$\chi^2(3) = 8.77^*$ N = 122
Problem-Focused Coping (PFC)	-0.41	0.66	-0.62	
TBV*PFC	-0.38	0.52	-0.75	
Model 4				
TBV	0.60	0.24	2.51*	$\chi^2(3) = 7.58^\dagger$ N = 123
Seeking Social Support Coping (SSSC)	0.05	0.46	0.10	
SSSC*TBV	0.05	0.38	0.14	
Model 5				
TBV	0.67	0.24	2.78**	$\chi^2(3) = 9.69^*$ N = 123
Wishful Thinking Coping (WTC)	-0.08	0.24	-0.17	
WTC*TBV	-0.43	0.35	-1.22	
Family-Level Moderators				
Model 6				
TBV	0.57	0.24	2.41*	$\chi^2(3) = 9.41^*$ N = 123
Parent Support (PS)	0.00	0.02	-0.15	
TBV*PS	0.02	0.02	1.27	

	Coefficient	SE	Z	Model
Model 7				
TBV	0.61	0.23	2.67**	$\chi^2(3) = 7.79^\dagger$ N = 123
Family Functioning (FF)	0.29	2.22	0.13	
TBV*FF	0.66	1.66	0.40	
Peer-Level Moderators				
Model 8				
TBV	0.57	0.23	2.45*	$\chi^2(3) = 8.70^*$ N = 123
Friend Support (FS)	0.02	0.03	0.51	
TBV*FS	0.02	0.03	0.65	
Model 9				
TBV	0.46	0.23	1.79 [†]	$\chi^2(3) = 10.32^*$ N = 123
Classmate Support (CS)	-0.02	0.03	-0.67	
TBV*CS	-0.02	0.02	-1.11	
School-Level Moderators				
Model 10				
TBV	0.57	0.25	2.30*	$\chi^2(3) = 8.88^*$ N = 123
Teacher Support (TS)	0.02	0.03	0.85	
TBV*TS	0.01	0.02	0.33	
Model 11				
TBV	0.57	0.24	2.38*	$\chi^2(3) = 8.72^*$ N = 123
School Climate (SC)	-0.05	0.05	-1.03	
TBV*SC	0.00	0.04	0.04	

[†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 5 (Appendix A). Results of Three-Variable Multiple Regression Models Identifying Significant Interaction Terms on Grade Performance

	Type I SS	F	ΔR^2	<i>b</i>	SE	<i>t</i>	β	Model
Individual-Level Moderators								
Model 1								
Total Bullying Victimization (TBV)	22.29	8.39**	.0656	-.356	.132	-2.71**	-.244	$F(3,119) = 3.01^*$ N = 123; $R^2 = .0705$
Detachment Coping (DC)	0.75	0.28	.0022	-.103	.238	-0.43	-.039	
TBV*DC	0.95	0.36	.0028	-.107	.180	-0.60	-.054	
Model 2								
TBV	22.29	8.52**	.0656	-.388	.133	-2.91**	-.265	$F(3,119) = 3.64^*$ N = 123; $R^2 = .0840$
Keeps-to-Self Coping (KSC)	2.92	1.12	.0086	-.186	.186	-1.00	-.089	
TBV*KSC	3.34	1.28	.0098	.177	.156	1.13	.102	
Model 3								
TBV	22.11	8.88**	.0658	-.493	.133	-3.70***	-.339	$F(3,118) = 5.63^{**}$ N = 122; $R^2 = .1253$
Problem-Focused Coping (PFC)	6.76	2.72	.0201	.663	.320	2.07*	.190	
TBV*PFC	13.22	5.31*	.0394	.624	.271	2.30*	.204	
Model 4								
TBV	22.29	8.36**	.0656	-.387	.134	-2.88**	-.264	$F(3,119) = 2.85^*$ N = 123; $R^2 = .0671$
Seeking Social Support Coping (SSSC)	0.51	0.19	.0015	.101	.236	0.43	.039	
SSSC*TBV	0.03	0.01	.0001	-.021	.211	-0.10	-.009	
Model 5								
TBV	22.29	8.50**	.0656	-.362	.131	-2.76**	-.247	$F(3,119) = 3.54^*$ N = 123; $R^2 = .0820$
Wishful Thinking Coping (WTC)	4.75	1.81	.0140	-.283	.219	-1.29	-.115	
WTC*TBV	0.85	0.32	.0025	.107	.189	0.57	.050	
Family-Level Moderators								
Model 6								
TBV	22.29	8.66**	.0656	-.359	.128	-2.81**	-.245	$F(3,119) = 4.36^{**}$ N = 123; $R^2 = .0991$
Parent Support (PS)	8.63	3.35†	.0254	.020	.011	1.85†	.161	
TBV*PS	2.78	1.08	.0082	-.009	.009	-1.04	-.091	
Model 7								
TBV	25.55	9.24**	.0700	-.388	.132	-2.93**	-.256	$F(3,120) = 3.98^{**}$ N = 124; $R^2 = .0904$
Family Functioning (FF)	5.84	2.11	.0160	1.57	1.12	1.40	.123	
TBV*FF	1.60	0.58	.0044	-.738	.971	-0.76	-.066	

	Type I SS	F	ΔR^2	<i>b</i>	SE	<i>t</i>	β	Model
Peer-Level Moderators								
Model 8								
TBV	22.29	8.68**	.0656	-.356	.127	-2.80**	-.244	$F(3,119) = 4.48^{**}$ N = 123; $R^2 = .1015$
Friend Support (FS)	3.44	1.34	.0100	-.014	.015	-0.95	-.083	
TBV*FS	8.78	3.42†	.0258	-.025	.014	-1.85†	-.162	
Model 9								
TBV	22.29	9.66**	.0656	-.203	.127	-1.60	-.139	$F(3,119) = 9.44^{***}$ N = 123; $R^2 = .1922$
Classmate Support (CS)	27.45	11.89***	.0807	.042	.012	3.43***	.292	
TBV*CS	15.63	6.77*	.0460	.026	.010	2.60*	.219	
School-Level Moderators								
Model 10								
TBV	22.29	8.42**	.0656	-.379	.131	-2.89**	-.259	$F(3,119) = 3.15^*$ N = 123; $R^2 = .0736$
Teacher Support (TS)	2.28	0.86	.0067	.013	.014	0.93	.082	
TBV*TS	0.47	0.18	.0014	.011	.011	0.42	.038	
Model 11								
TBV	22.29	20.26***	.0656	-.300	.131	-2.29*	-.205	$F(3,119) = 4.70^{**}$ N = 123; $R^2 = .1059$
School Climate (SC)	10.81	4.23*	.0318	.056	.026	2.17*	.194	
TBV*SC	2.91	1.14	.0086	.023	.021	1.07	.094	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 6 (Appendix A). Results of Three-Variable Multiple Regression Models Identifying Significant Interaction Terms on School Absences

	Type I SS	F	ΔR^2	<i>b</i>	SE	<i>t</i>	β	Model
Individual-Level Moderators								
Model 1								
Total Bullying Victimization (TBV)	6.06	1.73	.0142	.185	.151	1.22	.113	$F(3,119) = 0.99$ $N = 123; R^2 = .0243$
Detachment Coping (DC)	0.11	0.03	.0003	-.095	.273	-0.35	-.032	
TBV*DC	4.23	1.21	.0099	.227	.207	1.10	.101	
Model 2								
TBV	6.06	1.72	.0142	.182	.155	1.18	.111	$F(3,119) = 0.74$ $N = 123; R^2 = .0183$
Keeps-to-Self Coping (KSC)	1.74	0.49	.0041	.151	.216	0.70	.064	
TBV*KSC	0.02	0.00	.0000	-.126	.182	-0.07	-.006	
Model 3								
TBV	5.98	1.70	.0141	.241	.159	1.52	.147	$F(3,118) = 0.81$ $N = 122; R^2 = .0201$
Problem-Focused Coping (PFC)	1.92	0.54	.0045	-.308	.381	-0.81	.079	
TBV*PFC	0.65	0.18	.0015	.322	.322	-0.43	-.040	
Model 4								
TBV	6.06	1.73	.0142	.181	.154	1.17	.110	$F(3,119) = 1.10$ $N = 123; R^2 = .0270$
Seeking Social Support Coping (SSSC)	0.26	0.07	.0006	-.046	.270	-0.17	-.016	
SSSC*TBV	5.22	1.49	.0122	.296	.242	1.22	.112	
Model 5								
TBV	6.06	1.71	.0142	.197	.152	1.30	.120	$F(3,119) = 0.62$ $N = 123; R^2 = .0153$
Wishful Thinking Coping (WTC)	0.33	0.09	.0008	-.073	.255	-0.29	-.027	
WTC*TBV	0.15	0.04	.0003	.045	.219	0.20	.019	
Family-Level Moderators								
Model 6								
TBV	6.06	1.76	.0142	.173	.148	1.17	.105	$F(3,119) = 1.69$ $N = 123; R^2 = .0409$
Parent Support (PS)	0.08	0.02	.0002	-.002	.012	-0.19	-.017	
TBV*PS	11.32	3.29†	.0265	.019	.010	1.81†	.163	

	Type I SS	F	ΔR^2	<i>b</i>	SE	<i>t</i>	β	Model
Model 7								
TBV	6.49	1.85	.0151	.199	.149	1.34	.122	$F(3,120) = 0.68$ N = 124; $R^2 = .0168$
Family Functioning (FF)	0.34	0.10	.0008	-.365	1.26	-0.29	-.026	
TBV*FF	0.39	0.11	.0009	.363	1.10	0.33	.030	
Peer-Level Moderators								
Model 8								
TBV	6.06	1.81	.0142	.171	.146	1.18	.104	$F(3,119) = 2.80^*$ N = 123; $R^2 = .0659$
Friend Support (FS)	4.72	1.41	.0111	.016	.017	0.94	.083	
TBV*FS	17.38	5.18*	.0407	.035	.015	2.28*	.203	
Model 9								
TBV	6.06	1.73	.0142	.171	.157	1.09	.104	$F(3,119) = 0.91$ N = 123; $R^2 = .0224$
Classmate Support (CS)	2.99	0.85	.0070	-.014	.015	-0.93	-.087	
TBV*CS	0.51	0.15	.0012	.005	.012	0.38	.035	
School-Level Moderators								
Model 10								
TBV	6.06	1.81	.0142	.147	.148	1.00	.090	$F(3,119) = 2.92^*$ N = 123; $R^2 = .0686$
Teacher Support (TS)	8.09	2.42	.0189	.024	.015	1.54	.136	
TBV*TS	15.17	4.53*	.0355	.027	.013	2.13*	.192	
Model 11								
TBV	6.06	1.72	.0142	.166	.153	1.08	.101	$F(3,119) = 0.89$ N = 123; $R^2 = .0218$
School Climate (SC)	3.24	0.92	.0076	-.028	.030	-0.94	-.088	
TBV*SC	0.04	0.01	.0001	.003	.025	0.10	.010	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7 (Appendix A). Results of Three-Variable Multiple Logistic Regression Models Identifying Significant Interaction Terms on Disciplinary Actions

	Coefficient	SE	Z	Model
Individual-Level Moderators				
Model 1				
Total Bullying Victimization (TBV)	0.59	0.20	2.95**	$\chi^2(3) = 10.89^{**}$ N = 123
Detachment Coping (DC)	-0.58	0.40	-1.48	
TBV*DC	0.27	0.27	1.01	
Model 2				
TBV	0.62	0.21	3.00**	$\chi^2(3) = 10.35^{**}$ N = 123
Keeps-to-Self Coping (KSC)	-0.02	0.30	-0.07	
TBV*KSC	-0.32	0.25	-1.29	
Model 3				
TBV	0.53	0.20	2.59**	$\chi^2(3) = 8.43^{**}$ N = 122
Problem-Focused Coping (PFC)	0.13	0.50	0.26	
TBV*PFC	-0.05	0.41	-0.13	
Model 4				
TBV	0.52	0.21	2.48*	$\chi^2(3) = 10.54^{**}$ N = 123
Seeking Social Support Coping (SSSC)	-0.04	0.37	-0.10	
SSSC*TBV	0.47	0.33	1.42	
Model 5				
TBV	0.60	0.20	2.98**	$\chi^2(3) = 10.75^{**}$ N = 123
Wishful Thinking Coping (WTC)	-0.36	0.34	-1.06	
WTC*TBV	-0.25	0.29	-0.87	
Family-Level Moderators				
Model 6				
TBV	0.53	0.20	2.67**	$\chi^2(3) = 9.67^{**}$ N = 123
Parent Support (PS)	0.01	0.02	0.44	
TBV*PS	0.01	0.01	0.85	

	Coefficient	SE	Z	Model
Model 7				
TBV	0.57	0.20	2.89**	$\chi^2(3) = 9.71^{**}$ N = 124
Family Functioning (FF)	0.29	1.71	0.71	
TBV*FF	1.12	1.45	0.77	
Peer-Level Moderators				
Model 8				
TBV	0.59	0.20	2.90**	$\chi^2(3) = 11.72^{**}$ N = 123
Friend Support (FS)	0.04	0.23	1.70†	
TBV*FS	-0.03	0.02	-1.16	
Model 9				
TBV	0.60	0.21	2.80**	$\chi^2(3) = 11.32^{**}$ N = 123
Classmate Support (CS)	0.03	0.02	1.34	
TBV*CS	-0.02	0.02	-1.38	
School-Level Moderators				
Model 10				
TBV	0.70	0.22	3.14**	$\chi^2(3) = 12.74^{**}$ N = 123
Teacher Support (TS)	0.04	0.02	1.57	
TBV*TS	-0.03	0.02	-1.78†	
Model 11				
TBV	0.58	0.21	2.77**	$\chi^2(3) = 12.40^{**}$ N = 123
School Climate (SC)	-0.06	0.04	-1.56	
TBV*SC	0.05	0.03	1.44	

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$