EXAMINING MENTAL HEALTH FACTORS AND DELINQUENT BEHAVIORS ASSOCIATED WITH CYBERBULLYING AND OTHER FORMS OF ADOLESCENT VICTIMIZATION

by

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A dissertation submitted to the faculty of
The University of North Carolina at Charlotte
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in
Health Services Research

Charlotte

2014

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ABSTRACT

ELLIOTT EDWIN TOLBERT. Examining mental health factors and delinquent behaviors associated with cyberbullying and other forms of adolescent victimization. (Under the direction of DR. A. SUZANNE BOYD)

Objective: To update the current state of knowledge by examining the individual effects multiple types of adolescent victimization (e.g., being threatened or injured by a weapon; being a victim of partner violence; face-to-face bullying; and cyberbullying) have on mental health factors, participation in delinquent behaviors, and substance use and abuse.

Methods: This study is a cross-sectional analysis of the Centers for Disease Control and Prevention's (CDC) 2011 Youth Risk Behavior Survey (YRBS). SPSS v20.0 was used to complete McNemar's Tests, chi-square tests, binary logistic regressions, and Spearman's Rank Order Correlations.

Results: The proportion of traditional bullying was greater than the proportion of cyberbullying; victimization was positively and significantly associated with alcohol use, drug use, feeling sad or hopeless, considering or planning suicide, and attempting suicide; regarding cumulative victimization, greater victimization was associated with a greater amount of delinquency and substance use behaviors, greater victimization was associated with lesser mental health factors, and greater delinquency and substance use behavior was associated with lesser mental health factors.

Conclusions: Victimizations during adolescence may lead to a number of adverse health outcomes and behaviors. Additional research is necessary, particularly concerning measuring and defining present and emerging forms of adolescent victimization, longitudinal studies, and evaluation of intervention and preventive efforts.

DEDICATION

This dissertation is dedicated to my family. Thank you for always being there for me since before I can remember. I could never have come this far without your love and support. I also dedicate this dissertation to Melandi, Larissa, Christina, and Timothy. You are friends who have become family and will always have a place in my heart. To Oscar, man's best friend, thank you for always keeping a smile on my face and reminding me to stay positive. You are all incredible!

ACKNOWLEDGEMENTS

Words cannot express how appreciative I am to have had Dr. A. Suzanne Boyd as a professor, advisor, and dissertation chair. Suzanne's dedication to her students and discipline is unrelenting. I appreciate her academic expertise, words of encouragement, and guidance.

I would like to extend sincere gratitude to the members of my dissertation committee for their patience and support throughout this process. Drs. Christopher Blanchette, Shanti Kulkarni, Susan McCarter, and Laura Veach are all experts in their respective fields and I am honored to have worked with them.

Thank you, Sabrina Jones-Niggel, Sharon MacKinnon, Joshua Noone, Debosree Roy, Pilar Zuber, Keith Carnes, Elizabeth Radcliff, Melannie Pate, Yhenneko Taylor, Comfort Olorunsaiye, Ian Hewer, Scott Robinson, Elizabeth Flanigan, and Leslie Golden for being such a supportive group of colleagues. I could not imagine running regressions on a Friday night with anyone else. I cannot wait to see all of the statistically significant contributions you will be making to Health Services Research.

I would also like to acknowledge Sarah Grant, Angela Smith, Donna Lamb, and Drs. Nancy Fey-Yensan, Jane Neese, Yvette Huet, David Langford, Trudy Moore-Harrison, Donna Kazemi, and Michael Moore, who were never too busy to offer kind words or advice.

You have all made my tenure at UNC Charlotte great in some way and I will never forget it. Thank you all.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

1.1 Introduction and Contribution to Health Services Research

Health services research (HSR) is defined as "the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being" (Academy Health, 2013, para. 2). This study reflects HSR by examining personal and social factors associated with being an adolescent victim. The results led to implications for policy and practice that aim to improve the health and well-being of adolescents.

In recent years, national interest in healthy adolescent development has increased. This period of transition, typically defined as being between the ages of 10 and 24 by researchers and specialists, is filled with various factors that influence development. Promotion of positive and prevention of negative factors, such as victimization, are necessary for successful, healthy adolescent development. A victim is defined as someone subjected to cruelty, oppression, or other harsh, or unfair treatment, or death, injury, or ruin, as a result of a circumstantial, oppressive, or adverse event (Stevenson & Brown, 2007). The experience of events such as being threatened or injured by a weapon, or being a victim of partner violence, traditional bullying (i.e., face-to-face) may result in adverse mental health (Arseneault, Bowes, & Shakoor, 2010), substance use and

abuse, and/or delinquent behavior (Hay & Evans, 2006). These same negative outcomes are also emerging as a result of a new form of adolescent victimization that has surfaced in recent years: cyberbullying. This type of bullying takes place using electronic technology such as text messages, emails, or social networking websites (USDHHS, 2013c). Research is necessary in order to implement the most effective policies, mental and physical health care services, and prevention and intervention programs to curtail the increasing cyberbullying trend.

This study represents a cross-sectional analysis of the Centers for Disease Control and Prevention's (CDC) Youth Risk Behavior Survey (YRBS) and was undertaken in order to make a significant contribution to the knowledgebase that has revealed associations among adolescent victimization and adverse health and well-being. Specifically, this study updates the current state of knowledge by examining the effects different types of adolescent victimization have on mental health factors, participation in delinquent behaviors, and substance use and abuse. The inclusion of cyberbullying offers insight to this emerging area and compares its effects to more established forms of victimization. In addition, the study examines the effects of cumulative adolescent victimization.

1.2 Magnitude of the Problem

Interpersonal violence is defined as "the intentional use of physical force or power, threatened or actual, against another person or against a group or community that results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation" (Krug, Mercy, Dahlberg, & Zwi, 2002, p. 5). On average, 13 young people ages 10 to 24 are victims of homicide in the U.S. each day,

making violence the second leading cause of death for this age group (CDC, 2012b). In 2011, 707,212 youth were treated in emergency departments for violence-related injuries (CDC, 2012b). The 2011 YRBS reports that nationwide, 32.8% of all participants had been in one or more physical fights during the 12 months prior to the survey, 16.6% had carried a weapon (i.e., gun, knife, club) in the past 30 days, and 5.1% reported carrying a gun in the past 30 days (Eaton et al., 2012). Vulnerability for interpersonal violence is compounded for some adolescents, which is revealed in violence-based gender, and racial/ethnic disparities (Eaton et al., 2012). Victims and perpetrators of adolescent interpersonal violence are typically male (Eaton et al., 2012). In addition, homicide is the leading cause of death among African Americans aged 10 to 24, the second leading cause among Hispanics, and the third among Asian/Pacific Islanders, American Indians, and Alaska Natives in the same age range (CDC, 2012b).

Intimate partner violence (IPV) is described as physical, sexual, or psychological harm by a current or former partner or spouse that can occur among heterosexual or same-sex couples and does not require sexual intimacy (CDC, 2010). The four main types of IPV are physical, sexual, threats of physical or sexual violence, and psychological or emotional violence (Saltzman, 2002). Among all American adults, about 24 people per minute, or 3 in 10 women and 1 in 10 men, are victims of rape, physical violence, or stalking by an intimate partner in the United States (Black et al., 2011). Concerning mortality, IPV was the cause of 14% of all US homicides, 70% female and 30% male, in 2007 (Catalano, Smith, Snyder, & Rand, 2009). The National Coalition of Anti-Violence Programs' (NCAVP) annual report on LGBTQ (lesbian, gay, bisexual, transgender and queer) and HIV-affected intimate partner violence is the most

comprehensive of its kind. The 2013, report reveals 2,679 reports of IPV (a 29.6% increase from 2011) and 21 cases of intimate partner homicide (a 10.5% increase from 2011) among the LGBTQ population in 2012. Concerning gender identity among these victims of violence and homicide, 36.1% were men, 32.6% were women, 22.1% were cisgender (i.e., identify as the gender that matches the sex that they were assigned at birth), 6.4% were transgender, 2.6% were other, and 0.2% were intersex (NCAVP, 2013).

The medical care, mental health services, and lost productivity due to IPV are estimated to cost over $8.3 billion per year (Max, Rice, Finkelstein, Bardwell, & Leadbetter, 2004). These statistics may actually underestimate the actual impact of this issue, as many cases of IPV go unreported because victims may think no one will believe them or be able to help (Black et al., 2011). Consequences of IPV may be physical, including a number of various adverse health outcomes (Black et al., 2011; Breiding, Black, & Ryan, 2008; Crofford, 2007; Leserman & Drossman, 2007); psychological (Black et al., 2011; Coker et al., 2002; Heise & Garcia-Moreno, 2002; Roberts, Klein, & Fisher, 2003; Tjaden & Thoennes, 2000; Warshaw, Brashler, & Gil, 2009); social (Heise & Garcia-Moreno, 2002; Plichta, 2004; Warshaw et al., 2009); or result in health risk behaviors (Heise & Garcia-Moreno, 2002; Plichta, 2004; Warshaw et al., 2009).

Adolescents are often victims of a certain type of IPV, dating violence, which occurs between two people in a close relationship (CDC, 2012a). The 2011 YRBS found that 9.4% of participants had been hit, slapped, or physically hurt on purpose by their partner within the 12-month period prior to the survey (Eaton et al., 2012). The survey also revealed disparities based on gender, race and, ethnicity. The prevalence of dating violence was higher among Black (12.2%) and Hispanic adolescents (11.4%) than White

(7.6%); higher among Black females (11.8%) and Hispanic females (10.6%) than White females (7.7%); and higher among Black males (12.4%) and Hispanic males (12.1%) than White males (7.4%) (Eaton et al., 2012). LGBTQ youth represent one of the most impacted identities of IPV, as a third of all survivors were between the ages of 19 and 29 in 2012 (NCAVP, 2013). Prevention and intervention regarding intimate partner violence is vital because it is the number one risk factor for intimate partner homicide (J. C. Campbell, Glass, Sharps, Laughon, & Bloom, 2007).

Bullying is unwanted, aggressive behavior among school-aged children that involves a real or perceived power imbalance (USDHHS, 2013b). The behavior is repeated and occurs between individuals of the same age group (Arseneault et al., 2010). Examples of bullying include making threats, spreading rumors, attacking someone physically or verbally, or purposefully excluding someone from a group (USDHHS, 2013b). A national sample of American adolescents revealed that they are most often bullied in the lunchroom, hallways/stairwells, playground/athletic fields, and classrooms of their schools (Limber, Olweus, & Luxenberg, 2013). The 2011 YRBS found that 20.1% of all participants reported being bullied on school property, with a higher prevalence among females (22.0%) than males (18.2%) (Eaton et al., 2012). Regarding disparities, males are generally more likely than females to be bullied physically and females are more likely to encounter emotional bullying (Finkelhor, Turner, Ormrod, & Hamby, 2009). The risk for being bullied peaks during between the ages of 6 and 9 for physical bullying, teasing, or emotional bullying, while at older ages, risks of physical bullying decrease by half, and emotional bullying remains high (Finkelhor et al., 2009). Even though bullying peaks in elementary school, effects such as depression may persist

into late adolescence (Arseneault et al., 2010) and adulthood (Gladstone, Parker, & Malhi, 2006). When race and ethnicity are considered, 30% each of White and Black students, 27% of Hispanic students, and 18% of Asian students ages 12 to 18 report bullying (Finkelhor et al., 2009). Similar to other types of victimization, a large portion of bullying goes unreported (Glew, Rivara, & Feudtner, 2000). A 2009 survey found that only 36% of students who were bullied at school had notified a teacher or other adult (Zhang, Truman, Snyder, & Robers, 2012).

Cyberbullying is bullying that takes place by means of electronic technology (USDHHS, 2013c). Examples include mean text messages or emails, rumors sent by email or posted on social networking sites (e.g., Facebook, Twitter, and Instagram), and embarrassing pictures, videos, websites, or fake profiles (USDHHS, 2013c). The most common method of cyberbullying is via text message (DeVoe & Murphy, 2011). Although bullying, in general, has been on the rise in the United States since 2001 (Zhang et al., 2012), the risk of cyberbullying has increased rapidly due to the increase of technology use in the lives of adolescents. The Pew Research Center reports that 93% of teens and young adults, ages 12 to 29 go online Lenhart, Purcell, Smith, and Zickuhr (2010). Regarding cell phone use, 75% of 12-17 year-olds own cell phones and 88% of teen cell phone users employ text messaging, with over half of them texting daily (Lenhart, Ling, Campbell, & Purcell, 2010). Although the electronic nature of this type of victimization allows the aggressor to remain anonymous, at least 40–50% of those who are victimized know the identity of their aggressor (Kowalski & Limber, 2007; Wolak, Finkelhor, Mitchell, & Ybarra, 2010). Although bullying, by definition, takes place over time, an adolescent who is cyberbullied for a short period of time may endure more

severe effects because electronic media can reach a wide audience in a short amount of time (P. K. Smith et al., 2008). Cyberbullying is most common between 14 and 17 years of age and females are more likely to be victims than males (Lenhart, 2007). This is likely due to the fact that females spend more time on social networking websites than males (Lenhart, Purcell, et al., 2010). The 2011 YRBS found that 16.2% of all applicants reported being bullied electronically (i.e., email, chat room, website, texting), with a higher prevalence among females (22.1%) than males (10.8%) (Eaton et al., 2012). Studies also show that cyberbullying victims are at higher risk for and typically are victims of traditional bullying (DeVoe & Murphy, 2011; Hinduja & Patchin, 2008b; Ybarra, Diener-West, & Leaf, 2007). In addition, research is starting to reveal correlations between cyberbullying and partner violence, known as "electronic dating violence" (S. Hinduja & J. W. Patchin, 2011). Another issue raised by the electronic nature of cyberbullying is regulation. There is no clear party assigned to regulate negative behaviors that take place on the Internet or via text messages, whether it be federal, state, or local entities such as school systems (Hinduja & Patchin, 2008a).

1.3 Adolescent Victimization Contributes to Adverse Health Conditions

Depending on the type of victimization, effects on the victim, as well as the community, may be physical, financial, psychological, or emotional (Dignan, 2005). Examples include intangible costs such as physical and mental trauma, pain, suffering, fear, and the loss of quality of life (E. M. Wright & Vicniere, 2010). Tangible costs include property damage or loss, medical care, legal costs, police and victim services, and loss or reduction of workers' productivity (E. M. Wright & Vicniere, 2010). Literature often likens victimization to experiencing a traumatic event.

The American Psychological Association (APA) defines a traumatic event as one that threatens injury, death, or physical integrity while causing horror, terror, or helplessness at the time it occurs (American Psychiatric Association, 2008). Examples include sexual abuse, physical abuse, domestic violence, community and school violence, medical trauma, car accidents, terrorism, war experiences, natural and man-made disasters, suicides, and other traumatic losses. The APA reports that over two thirds of children report experiencing a traumatic event by age 16 (American Psychiatric Association, 2008). Children and adolescents vary in the nature of their responses to traumatic experiences and although most return to normal functioning, some develop ongoing psychological symptoms that interfere with daily life (American Psychiatric Association, 2008). Exposure to trauma such as intrauterine trauma or toxic substances during critical developmental periods often interrupt brain development and result in neurological deficits that can be permanent (Perry, 2001).

Adolescents are also faced with stress, which is defined as, "any uncomfortable emotional experience accompanied by predictable biochemical, physiological, and behavioral changes" (Baum, 1990, p.653). Stress is a normal part of life and mild forms can be beneficial at times, but extreme, or prolonged stress can have physical health consequences and adversely affect the immune (Khansari, Murgo, & Faith, 1990), cardiovascular, neuroendocrine and central nervous systems (Anderson, 1998).

Adolescent victims of trauma and stress also face compromised mental health. Adolescent mental health should be of great concern, as many disorders appear and are able to be diagnosed and treated during this period (Kessler, Berglund, Borges, Nock, & Wang, 2005; Rushton, Forcier, & Schectman, 2002). Even though about 1 in 5

adolescents experience symptoms of emotional distress, and 1 in 10 are emotionally impaired, in general, there is a limited focus on mental health for this population (Knopf, Park, & Mulye, 2008). Depression, the most common mental illness reported by adolescents, has been linked to delinquent and risky behaviors such as unsafe sexual activity, fighting, and weapon carrying (Ozer et al., 2009). In addition, suicide, which often co-occurs with a mental disorder, represents the third leading cause of mortality for adolescents (Blum & Qureshi, 2011). The social stress theory argues that multiple adverse exposures to stressors, including contextual stressors, chronic strain, and acute stressors, contribute to poor mental health outcomes (Rutter, 2005; Thompson, Mazza, Herting, Randell, & Eggert, 2005). These mental health outcomes range from depression to suicide, the third leading cause of death for adolescents aged 10 to 24 (CDC, 2013b). These mental health outcomes may persist into adulthood, as violent victimization during adolescence doubles the likelihood of experiencing post traumatic stress disorder (PTSD) as an adult (Menard, 2002). Adverse mental health has also been shown to contribute to chronic disease. Evidence has revealed that mental health disorders, especially depression, are strongly associated with the risk, occurrence, management, progression, and outcome of serious chronic diseases and health conditions, including diabetes, hypertension, stroke, heart disease, (Jonas, Franks, & Ingram, 1997; Jonas & Mussolino, 2000) and cancer (Chapman, Perry, & Strine, 2005).

1.4 Adolescent Victimization Contributes to Delinquent Behavior and Substance Use and Abuse

Delinquent behaviors such as substance use and abuse, drinking and driving, weapon carrying, and violence, have all been associated with homicide and unintentional

injury - the leading causes of adolescent morbidity and mortality (Blum & Qureshi, 2011). Adolescent victims are at risk of participating in delinquent behaviors and substance use and abuse. The delinquent behaviors displayed by adolescent victims have been explained by Agnew's General Strain Theory (GTS), which argues that strains and stressors increase the likelihood of negative emotions. Strain encountered from the outside environment can cause feelings of defeat, despair, and fear, and anger. This anger causes the individual to blame others for their negative circumstances, lower inhibitions, create a desire for revenge, incite action, and enable justification of actions. Repetitive strain is more likely to result in delinquent acts because coping strategies and thresholds for negativity are taxed and pushed to the limit, hence strain (Agnew, 1992). GTS was later built upon by characterizing the types of strain that are most likely to result in delinquency. Agnew contends that strains that are more likely to result in delinquency: (1) are seen as unjust, (2) are seen as high in magnitude, (3) are associated with low control, and (4) create some pressure or incentive to engage in criminal coping (Agnew, 2001). Vicarious strain, or strains experienced by others around the individual, has also been associated with delinquency (Agnew, 2002). When gender is considered, GST argues that females are more likely to respond to strain with depression and anger while accompanying this anger with fear, guilt, and shame. They are also more likely to blame themselves, worry about the affects of their anger, and practice self-destructive behaviors due to depression and guilt. Males, on the other hand, are quick to blame others, are less concerned about hurting others, are more likely to respond with anger accompanied with moral outrage, and may participate in delinquent behavior due to this moral outrage (Broidy & Agnew, 1997).

Adolescent victims are also at risk for substance use and abuse. According to the self-medication hypothesis of substance abuse, individuals develop substance abuse problems in an attempt to manage distress associated with the effects of trauma and traumatic stress exposure (Bates & Labouvie, 1997). This association is pronounced in adolescent trauma literature. In the National Survey of Adolescents, teens who had experienced physical or sexual abuse or assault were three times more likely to report past or current substance abuse than those without a history of trauma (Kilpatrick, Smith, & Saunders, 2003). In surveys of adolescents receiving treatment for substance abuse, over 70% of patients had a history of trauma exposure (Estroff, 2008; Funk, McDermeit, Godley, & Adams, 2003). Research also reveals an ongoing cycle between adolescent substance abuse and victimization. The use and abuse of legal and/or illegal drugs or alcohol before delinquency may be a correlating factor in a victimization, and use and abuse after delinquency may be a coping mechanism to lessen the intensity of the pain or trauma brought on by the act (Wills, Sandy, Yaeger, Cleary, & Shinar, 2001). Higher levels of stress have been associated with greater levels of coping through substance use among adolescents (Wills et al., 2001). An earlier survey of 6th, 9th, and 12th grade students found that physical and sexual abuse were associated with an increased likelihood of the use of alcohol, marijuana, and almost all other drugs for both males and females (Harrison, Fulkerson, & Beebe, 1997). Victims gave reasons for substance use, which included coping with painful emotions and escaping from problems (Harrison et al., 1997). These associations are also seen in recent literature, which links early physical and sexual abuse to alcohol (Anne L., Nayak, Korcha, & Greenfield, 2011; Lenhart, 2007) and drug use (Butt, Chou, & Browne, 2011).

Adolescents who participate in delinquency face certain health risks. Both violent acts and substance use contribute to intentional injury, the second leading cause of mortality for individuals ages 15 to 24 years old in the U.S. (CDC, 2012b). Mental health is a factor, as an estimated 67% to 70% of youth in the juvenile justice system have a diagnosable mental health disorder (Skowyra & Cocozza, 2006). Substance use also contributes to unintentional injury, the leading cause of mortality and morbidity for individuals ages 1 to 34 in the U.S. (CDC, 2012b). As brain development is taking place during adolescence, structural and functional changes that occur during this period of time may be threatened by substance use and abuse (Giedd et al., 1999; L. Spear, 2000; Squeglia, Jacobus, & Tapert, 2009). Adolescent substance use is associated with brain alterations and neurocognitive deficits, with negative implications for learning and other cognitive abilities that may continue into adulthood (Brown & Tapert, 2004; L. P. Spear & Varlinskaya, 2005; Zeigler et al., 2005). This substance use or abuse can also place an individual at greater risk for addiction in adulthood (McCambridge, McAlaney, & Rowe, 2011; Patrick, Wray-Lake, Finlay, & Maggs, 2010).

1.5 Study Significance and Rationale

This research was guided by national initiatives aimed at health across the lifespan. *Healthy People 2020* proposes an increased focus on the use of positive youth development interventions for preventing adolescent health risk behaviors (Healthy People 2020, 2013). The National Initiative to Improve Adolescent Health (NIIAH) represents collaboration between the Division of Adolescent and School Health from the CDC, the Maternal and Child Health Bureau from the Health Resources and Services Administration, and a group of partner organizations. The goal of the NIIAH is effort to

improve the health, safety, and well-being of adolescents and young adults ages 10–24 years-old (CDC, 2013a).

In addition, this research is directed by recommendations made by the National Research Council/Institute of Medicine's (NRC/IOM's) Board on Children, Youth, and Families (BCYF), which organized the Committee on Adolescent Health Care Services and Models of Care for Treatment, Prevention, and Healthy Development. A significant insight presented in the committee's 2009 report is the fact that adolescents are currently overlooked in the health care system, mainly due to the current approach being pediatric and adult-centered. In addition, many of the health conditions adolescents face are due to their behaviors, which could result in stigma and embarrassment on behalf of both the adolescent and the provider. The report also highlights the fact that only 36% of all the adolescents who need mental health services receive them. The committee recommends the identification of the specific health conditions affecting adolescents and addressing through appropriate promotion and prevention efforts (Committee on Adolescent Health Care Services et al., 2009).

The results of this study contribute to these national efforts by filling gaps in the knowledge base concerning adolescent victimization and its associated outcomes, particularly with respect to cyberbullying and the effect of cumulative victimization. The background and demographic measures examined provide newer, updated predictive models for each type of victimization and cumulative victimization, which reflects the fast growing and quickly diversifying adolescent population. In addition, no studies have compared the adverse mental health outcomes and behaviors of these specific types of adolescent victimization together, using a nationally representative sample. This is

particularly notable regarding cyberbullying, as researchers have just begun to incorporate and collect data on this issue over the past few years.

1.6 Specific Aims

The specific aims of this study are to: (1) Examine the demographic and background characteristics (i.e., gender, race, ethnicity, age, and grade level) associated with various mental health factors, delinquent behaviors, and four types of adolescent victimization: being threatened or injured by a weapon, being a victim of partner violence, traditional bullying, or cyberbullying. (2) Identify the mental health factors, delinquent behaviors, and substance use and abuse associated with each type of adolescent victimization. (3) Determine if being subjected to multiple types of victimization (i.e., cumulative victimization) is associated with increased adverse mental health factors and participation in a greater amount of delinquent behaviors, and greater substance use and abuse.

1.7 Research Hypotheses

(1) Adolescents are more likely to experience cyberbullying than individual traditional bullying; being threatened or injured by a weapon or partner violence; females are more likely to be victims of cyberbullying and partner violence than males; males are more likely to be victims of traditional bullying and being threatened or injured by a weapon; racial and ethnic minorities are more likely to be victims of traditional bullying and intentional injury and White adolescents are more likely to be victims of cyberbullying; adolescent victimization is more likely to occur during grades 9 and 10 than 11 and 12. (2) Adolescents who have experienced each type of victimization are more likely to demonstrate adverse mental health, delinquent behavior, and substance use and abuse

than adolescents who have not; cyberbullying is more strongly associated with adverse mental health outcomes than traditional bullying; traditional bullying, being threatened or injured by a weapon and partner violence are more strongly associated with delinquent behavior and substance use and abuse than cyberbullying.

(3) Being a victim of cumulative victimization is associated with a greater amount of mental health, delinquent behavior, and substance use and abuse.

CHAPTER 2: LITERATURE REVIEW

This chapter provides a synthesis of the literature of prior studies examining the relationships between adolescent victimization (i.e., being threatened or injured, or being a victim of partner violence, traditional bullying, or cyberbullying), mental health factors, delinquent behaviors, and substance use and abuse, along with n overview of the empirical evidence supporting the Social Ecological Model, the conceptual framework that guided this study. The databases used for this comprehensive review, Pubmed, Science Direct, and Google Scholar, included the following limits: (1) an adolescent population, 10 to 25 years of age (2) a sample with majority American adolescents and published in English (3) utilized either quantitative and/or qualitative analyses and (4) published within the last 10 years. The literature review focuses on victimization between adolescents, although some studies included studies included victimization by a parent. The following sections synthesize the literature in each area. Table 1, found at the end of this chapter summarizes the characteristics of each study: author, year, population or dataset, variables, and major findings.

2.1 Associations Between Threatened and/or Injured Adolescents, Mental Health Factors, Delinquent Behaviors, and Substance Use and Abuse

Study designs within this category are primarily cross-sectional, but also include panel, and cohort studies. The majority of the studies used nationally representative samples, which resulted in studies reporting as many as $N = 17{,}000$ participants.

Remaining studies utilized random or purposive samples of specific areas or organizations and had as few as $N = 88$ and as many as $N = 276$ participants. Threatened and/or injured adolescent measures typically included violent events that took place in or around the participant's home or school involving peers and/or strangers. Researchers also occasionally included witnessing violence in these locations. Delinquent behavior measures focused on crimes such as violent offences, property offenses, serious and minor theft, drug sales, robbery, threatening to harm others, and weapon carrying.

Mental health measures focused on PTSD, anxiety, depression, major depressive disorder, anger, dissociation, withdrawal, worthlessness, suicidality, and changes in sleeping and eating patterns. Substance use and abuse included alcohol, tobacco, marijuana, hallucinogen, amphetamine, heroin, cocaine, barbiturate, and prescription drugs, while some studies considered or defined alcohol and drug use to be a delinquent behavior, others characterized it as a mental health factor.

Taken together, the studies found positive associations between being threatened and/or injured, delinquent behaviors, and adverse mental health. Findings reveal the detrimental effects of being threatened and injured during adolescence and highlight several particularly high-risk situations. Haynie, Petts, Maimon, & Piquero (2009) found that adolescents who had experienced both direct and indirect violence had the highest risks of adverse behavior (e.g., running away from home, dropping out of high school, attempting suicide, and coming into contact with the criminal justice system). These risks increased as exposure to violence increased. The matter of repeat victimization was also found to be significantly associated with delinquency recidivism (Chang, Chen, & Brownson, 2003) having a psychiatric diagnosis, and involvement with delinquent peers

(Ford, Elhai, Connor, & Frueh, 2010). Fagan (2003) found that adolescents were more likely to be victimized by nonfamily members than family members, although victims of both types of violence were much more likely to report delinquent behavior than nonvictims.

Gender differences were reported among the major findings in a few studies. For example, Kilpatrick, Smith, and Saunders (2003) found that experiencing either a physical assault or physically abusive punishment was associated with a lifetime PTSD rate of 15.2% for males and 27.4% for females. Also, Sullivan, Farrell, and Kliewer (2006) reported that physical victimization was more strongly associated with alcohol use and abuse, aggression, and delinquent behaviors among males than females.

Several studies reported findings about adolescents who witness violence. Foster, Kuperminc, and Price (2004) found that witnessing violence was strongly correlated with being the victim of community violence for both males and females. Weaver, Borkowski, and Whitman (2008) reported that both witnessing violence and victimization were positively correlated to delinquency and violent behaviors. Ford, Elhai, Connor, and Frueh (2010) compared witnessing violence to experiencing multiple forms of victimization. The results suggest that adolescents who had experienced multiple forms of victimization were more likely than those who had witnessed violence to have a psychiatric diagnosis and be involved in delinquency with delinquent peers.

2.2 Associations Between Adolescent Victims of Partner Violence, Mental Health Factors, Delinquent Behaviors, and Substance Use and Abuse

This section is composed of cross-sectional designs, with the exception of two longitudinal studies. The majority of the studies were nationally representative, while

three used purposive samples representing very specific groups, including 18 to 19 year old women entering a specific Southern university for the first time (Smith, White, & Holland, 2003); youth in grades 7 through 12 from 10 New England schools (Banyard & Cross, 2008); and adolescent mothers from Washington State (Lindhorst & Oxford, 2008). Nationally representative sample sizes ranged from $N = 3,533$ to $N = 15,214$, while convenience samples were smaller ($N = 229$ to $N = 2,101$).

All studies within this section explored physical dating violence and often included sexual violence. Dependent variables typically included mental health factors and health-risk behaviors (e.g., disordered eating, substance use and abuse, depression, low self-esteem, thoughts and attempts of suicide, and PTSD). All studies found significantly positive associations among adolescent partner violence and several adverse mental health and self-harming outcomes.

Although the majority of studies in this section focused on females, two included males. Dating violence was positively associated with dieting, binge and purge behaviors, cigarette smoking, alcohol consumption, drug use, suicidal thoughts, depression, and poorer self-esteem for victims of both genders (Ackard, Neumark-Sztainer, and Hannan, 2003). Eaton, Davis, Barrios, Brener, and Noonan (2007) reported that dating violence was associated with having ever had sexual intercourse for both genders. Also, the odds of dating violence victimization increased as the number of risk behaviors and the number of lifetime sexual partners increased among both males and females.

2.3 Associations Between Adolescent Victims of Bullying, Mental Health Factors, Delinquent Behaviors, and Substance Use and Abuse

This category is comprised of two longitudinal and twelve cross-sectional studies. By contrast to the two previous sections of studies mentioned, two samples are nationally representative, while the majority of studies use random and purposive samples of specific areas. These areas typically included large, urban cities in states such as California (Juvonen, Graham & Schuster, 2003; Tharp-Taylor, Haviland, & D'Amico (2009); New York (Klomeck, Marrocco, Kleinman, Schonfeld, & Gould, 2007); and Maryland (Bradshaw, O'Brennan, & Sawyer, 2008; O'Brennan, 2009). Nationally representative studies reported sample sizes of N = 1,000 and N = 1,945, while other studies ranged from *N* = 233 to *N* = 24,345 participants.

Studies examined various forms of physical and verbal bullying, including indirect forms (e.g., spreading rumors, lies, or embarrassing information). Dependent variables included forms of mental health factors, deviant behavior, self-perception, attitude towards school, retaliation, aggression, substance use and abuse, and social adjustment.

Overall, studies found positive associations between bullying and adverse outcomes. A common theme that emerged is that of the bully-victim, an individual who is both a victim and perpetrator of bullying. Cuevas, Finkelhor, Turner, and Ormrod, (2007) found that bully-victims were mostly males with high levels of delinquency, victimization, adversity, and anger. Many studies compared adolescent bully-victims to those who reporting being a bully, victim, and uninvolved in bullying behavior. Bully-victims often displayed the most adverse health and behavior outcomes. For example, Juvonen, Graham, and Schuster (2003) reported that bully-victims displayed the highest level of conduct, school, and peer relationship problems. Another study reported that

middle school bully-victims were more likely to experience internalizing symptoms (Peskin, Tortolero, Markham, Addy, & Baumler, 2007). This trend continued in a study revealing that bully-victims generally reported the poorest psychosocial health, the worst attitudes toward school, more problem behavior and more physical injury than bullies, victims, and neutral students (Stein, Dukes, & Warren, 2007). A study that went into more detail regarding attitudes toward school found that bully-victims were most likely to report feeling unsafe and disconnected from their school (Bradshaw, O'Brennan, & Sawyer, 2008). Similarly, O'Brennan (2009) found that bully-victims were most likely to display internalizing symptoms, problems in peer relationships, and have poorer perceptions of the school environment. In yet another example, Dukes, Stein, and Zane (2009) reported that bully-victims had the lowest self-esteem, worst school attitudes, most problem behavior, most injuries, were most likely to engage in more physical bullying and be physically victimized.

2.4 Associations Between Adolescent Victims of Cyberbullying, Mental Health Factors, Delinquent Behaviors, and Substance Use and Abuse

One study in this category was nationally representative and one used a convenience sample. Hinduja and Patchin (2007; 2008b) obtained this convenience sample through an online survey instrument that was available on websites typically frequented by adolescents. All other studies were either random or purposeful samples of areas and schools.

Studies examined the effects of a variety of cyberbullying and Internet usage patterns. Dependent variables included mental health factors, deviant behaviors, substance use and abuse, school problems, aggressive behavior, and association with

traditional bullying as either a victim or offender. Four studies found that cyberbullying can be just as harmful as traditional bullying. Results from one of these studies indicate that both traditional and cyberbullying experiences were independently associated with increased social anxiety. Similarly, Hay, Meldrum, and Mann (2010) found that traditional bullying and cyberbullying are independently associated with delinquent behavior, suicide ideation, and self-harm. Researchers also examined the combined effects of traditional bullying and cyberbullying and found that victims experienced high amounts of distress (Schneider, O'Donnell, Stueve & Coulter, 2012).

This synthesis demonstrates that while some trends emerged in the literature review, work remains in specific areas. Many of the studies that focused on interpersonal violence and partner violence utilized nationally representative data. Bullying and cyberbullying studies often used purposive samples that are not generalizable to all American adolescents, which indicates a need for nationally representative studies in these areas. In addition, interpersonal and partner violence literature would benefit from updated studies that reflect the rapidly changes dynamics, such as increasing diversity, among the adolescent population. Another area that requires further research regarding adolescent victimization and its effects is race and ethnicity. This synthesis revealed numerous gender disparities, but the majority of the studies neglected to explore associations with race and ethnicity. There is also a need for research that examines multiple types of victimization together. This would allow types and effects of victimization to be compared as well as the exploration of cumulative victimization.

Table 1: Literature review table

Author/Year	Objective	Population/Dataset	Variables	Major Findings
Thretened and/or Injured Adolescents				
Haynie, Petts, Maimon, & Piquero (2009)	To examine whether various victimization types are associated with precocious role exits	Three waves of longitudinal data (n = 11,949) from Bearman et al.'s (1997) National Longitudinal Study of Adolescent Health (Add Health), a multi-wave study of American adolescents, their parents, and schools (as cited in Haynie et al., 2009)	Independent: partner victimization, caregiver physical abuse and sexual abuse, street violence, indirect violence exposure, peer violence, suicide, and school violence Dependent: precocious role exits (e.g., running away from home, dropping out of school, birth of a child, suicide attempts, and criminal justice contact)	Exposure to violence is associated with greater risks of running away from home, dropping out of high school, having a child, attempting suicide, and coming into contact with the criminal justice system. Risks are highest among adolescents that experience both direct and indirect violence and that risks generally increase as exposure to violence increases.
Chang, Chen, & Brownson (2003)	To examine the prevalence of adolescent victimization and delinquency recidivism	The nationally representative, self-reported Monitoring the Future Project (N = approximately 17,000 high school seniors)	Independent: victimization, (i.e., direct personal experience of threats or harm) and repeat victimization (i.e., having been victimized more than once during the last 12 months prior to the survey date) Dependent: delinquent behavior (i.e., violent or property offenses)	Repeat victimization was found to be significantly associated with delinquency recidivism.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
Fagan (2003)	To compare the relative and combined effects of adolescent violent victimization perpetrated by family and nonfamily members on self-reported criminal offending from adolescence to early adulthood	The National Youth Study (NYS), a multi-cohort panel study of American adolescents between the ages of 11 and 17 (original N = 1,725, final n = 1,340)	Independent: family violent victimization and nonfamily violent victimization Dependent: criminal offending (i.e., joyriding, serious and minor theft, serious and minor assault, and drug sales), index offending (i.e., robbery, felony assault, and felony theft offenses), and drug use (i.e., marijuana, hallucinogen, amphetamine, heroin, cocaine, and barbiturate)	Adolescents were much more likely to report physical violence by nonfamily members than by than by parents. Victims of both family and nonfamily violence were much more likely to report participation in all three offense types than nonvictims. Victimization has both an immediate and sustained effects on offending, as evidenced by increasing offending during adolescence and early adulthood. In each period, victimization generally, significantly tripled the odds of offending, revealing stronger associations to the prevalence of offending.
Kilpatrick, Smith, & Saunders (2003)	To examine the prevalence of violent adolescent victimization and subsequent effects on mental health, substance use, and	The National Survey of Adolescence (NSA), which examined relationships between victimization experiences and various mental health problems, substance use and delinquency (N = 4,023). In 1995, the NSA used random-digit dialing and stratified sampling to obtain a nationally	Independent: violent victimization (i.e., sexual assault, physical assault, physically abusive punishment, and witnessing an act of violence) Dependent: delinquency (i.e., having committed at	Experiencing either a physical assault or physically abusive punishment was associated with a lifetime PTSD rate of 15.2% for males and 27.4% for females. PTSD percentages were higher than 3.1% of males and 6% of females who reported no physical assault or physically abusive

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
	delinquent behavior problems	representative sample of adolescents between the ages of 12 and 17	least one Crime Index offense), mental health (i.e., non-experimental alcohol use, illicit use of prescription drugs, and marijuana or hard drug use), and PTSD	punishment. Substance use and abuse was found among 25% of physically assaulted or abused adolescents and 6% among adolescents who were not. The percentage of males who were physically assaulted and had ever committed an offense was 46.7%, compared with 9.8% of males who were not assaulted. Among females, 29.4% of physically assaulted girls had engaged in serious delinquent behavior, compared with 3.2% of non-assaulted females.
Foster, Kuperminc, & Price (2004)	To examine gender differences in levels of violence exposure, and in levels of posttraumatic stress (PTS) and related symptoms	A sample of inner-city predominantly African American children between ages 11 and 16 at Boys and Girls Clubs (N = 146)	Independent: community violence exposure (i.e., frequency of victimization, witnessing, and hearing about 20 types of violence and related activities in the community) Dependent: psychological symptoms (i.e., anxiety, depression, anger, posttraumatic stress, and dissociation)	Witnessing was strongly correlated with being the victim of community violence for both males and females. For males, victimization was significantly correlated with all 5 symptoms and witnessing violence was significantly correlated to anger and dissociation. Among females, victimization and witnessing violence were both significantly correlated with depression, anger, and dissociation.
Sullivan,	To examine	A sample of N = 276 predominately	Independent: physical peer	Physical victimization was

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
Farrell, & Kliewer (2006)	associations between physical peer victimization and externalizing behaviors including drug use, aggression, and delinquent behaviors	African American eighth grade middle school students in an urban public school system.	victimization Dependent: externalizing behaviors (i.e., drug use, aggression, and delinquent behaviors)	significantly associated with cigarette and alcohol use, physical and relational aggression, and delinquent behaviors. When gender was considered, physical victimization was more strongly associated with alcohol use and abuse, aggression, and delinquent behaviors among males than females.
Weaver, Borkowski, & Whitman (2008)	To examine associations between childhood exposure to violence and adolescent conduct problems in a sample of first-time adolescent mothers	Whitman, Borkowski, Keogh, & Weed's (2001) Notre Dame Adolescent Parenting Project (NDAPP), a longitudinal study investigating adolescent parenting (as cited in Weaver et al., 2008)	Independent: violence exposure (i.e., witnessing or victim of threats, slapping/hitting/punching, beatings, knife attacks, and shootings) Dependent: maternal and child internalizing behavior (i.e., withdrawal, anxiety/ depression, and somatic complaints), maternal and child externalizing behavior (i.e., delinquency and aggression), depression (i.e., worthlessness, suicidality, and changes in sleeping and eating patterns), social	Witnessing violence and victimization was significantly positively correlated to delinquency and violent behaviors.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			competence (i.e., interpersonal relationships, play and leisure time, and coping skills), delinquency (i.e., running away from home and selling marijuana or other drugs), and violent behaviors (i.e., threatening harm to others; slapping, punching, or hitting someone that has not hit the participant; slapping, punching, hitting someone after they hit the participant, beating up someone, attacking or stabbing someone with a knife, and shooting at someone)	
Brady, Tschann, Pasch, Flores, & Ozer (2009)	To examine whether violent victimization by peers was associated with alcohol and tobacco use and cognitive coping (i.e., focusing on positive aspects of life) among	A lager study that had been collected from randomly selected families served by a health maintenance organization in an urban, northern California community. Participants were primarily Mexican-American and White, between the ages of 12 and 15, and were contacted four years later for a follow-up interview (N = 247)	Independent: violent victimization (i.e., starting a fight, getting hurt in a fight, attacking, beating up, pulling a knife, pulling a gun, threatening with a club/bottle/screwdriver, hurting with a club/bottle/screwdriver, stabbing with a knife, and firing a gun)	Participants who had been victimized by violence reported greater alcohol and tobacco use and engaged in lower levels of cognitive coping.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
	adolescents		Dependent: alcohol use, tobacco use, and coping (measured using 13 cognitive and behavior coping items)	
Ford, Elhai, Connor, & Frueh (2010)	To examine associations between adolescent victimization; involvement in delinquency; and posttraumatic, depressive, and substance use disorders	The National Survey of Adolescence (NSA), a cross-sectional household probability sample of adolescents between 12 and17 years of age (N = 4,023)	Independent: victimization (i.e., sexual or physical assault or abuse; witnessing violence; direct exposure to disaster or serious accident; and threat of, or actual serious injury) Dependent: individual delinquency (i.e., stealing more than $100; stealing a motor vehicle; break-in; gang fights; use of force to obtain money, possessions or sexual relations; and perpetrated physical attack), friends' delinquency (i.e., property damage, marijuana use, petty theft, theft of more than $50, physical threat or attack, break-in, encouraging law breaking, alcohol use, intoxication, hard drug use,	Participants who had experienced multiple forms of victimization, coined poly-victimization (Finkelhor, Ormrod, & Turner, 2007), especially abuse and assault, were more likely than youth traumatized by witnessing violence or exposure to disaster/accident trauma to have a psychiatric diagnosis and be involved in delinquency with delinquent peers.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			distributing alcohol to minors, and sexual coercion), psychiatric disorders (i.e., PTSD, major depressive disorder, and alcohol and drug use and abuse	
Adolescent Victims of Partner Violence				
Ackard, Neumark-Sztainer, & Hannan (2003)	To examine associations between dating violence, behavioral and mental health, and the percentage of youth who remain in potentially harmful relationships due to a fear	A nationally representative sample of adolescents in grades 9 through 12 (N = 3,533) who completed the Commonwealth Fund Survey of the Health of Adolescent Boys and Girls	Independent: dating violence (i.e., physical and sexual) Dependent: disordered eating behaviors and weight concerns (i.e., unhealthy weight control, binge eating and purging behavior), substance use (i.e., use of cigarettes, alcohol, and illegal drugs), suicidality (i.e., "I do not think about killing myself;" "I think about killing myself, but I would not do it;" or "I want to kill myself."), depression (i.e., sadness, hopelessness, anhedonia, self-loathing, suicidal ideation, tearfulness, irritability, social	Dating violence to be significantly positively associated with dieting, binge and purge behaviors, cigarette smoking, alcohol consumption, drug use, suicidal thoughts, depression, and poorer self-esteem for victims of both genders.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			withdrawal, appearance dissatisfaction, and loneliness), self-esteem assessed by Rosenberg's (1965) Self-Esteem Scale (as cited in Ackard et al., 2003), and socioeconomic status (i.e., parental education and parental financial situation)	
Smith, White, & Holland (2003)	To investigate physical assault in dating relationships and its co-occurrence with sexual assault from high school through college	Longitudinal data were collected from college-enrolled women, aged 18 to 19 (n = 1,569)	Childhood victimization (i.e., sexual abuse, parental physical abuse, and witnessing domestic violence), adolescent and collegiate physical victimization (i.e., a romantic partner had threatened to hit or to throw something at them, or threw something at them, at least once), and adolescent and collegiate sexual victimization, which was captured by Koss and Oros' (1982) Sexual Experiences Survey (as cited in White et al., 2003)	Women who were physically assaulted as adolescents were at greater risk for revictimization during their freshman year, and remained at greater risk for subsequent years than those who were not. Women who were physically assaulted in any year were significantly more likely to be sexually assaulted that same year. Victimization during adolescence to be a better predictor of college victimization than childhood victimization.
Eaton, Davis, Barrios, Brener,	To examine associations	The CDC's 2003 nationally representative, school-based Youth	Independent: physical victimization in a dating	Regarding females, dating violence victimization was

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
& Noonan (2007)	between violent victimization in a dating relationship and risk behaviors, risk behavior initiation, and co-occurrence of risk behaviors among high school students	Risk Behavior Survey (N = 15,214)	relationship Dependent: risk behavior participation (i.e., smoking, alcohol use, marijuana use, and sexual behavior)	associated with alcohol use, early initiation of alcohol use, marijuana use, and having ever had sexual intercourse. For males, it was associated with having ever had sexual intercourse. The odds of dating violence victimization increased as the number of risk behaviors and the number of lifetime sexual partners increased among both males and females.
Banyard & Cross (2008)	To study mental health and educational consequences of physical and sexual abuse by peers among a convenience sample of adolescents	Data originally collected for the Teen Assessment Project (TAP) developed by Small and Kerns (1993) as a needs assessment, intervention, and empowerment, project (as cited in Banyard and Cross, 2008). The authors' convenience sample (n = 2,101) included students in grades 7 through 12	Independent: victimization (i.e., physical violence victimization and sexual coercion) Dependent: mental health (i.e., alcohol and drug use, depressed mood, suicidal thoughts, and worries), educational attitudes and outcomes (i.e., school attachment and average grades), and social support (i.e., parental support and neighborhood support)	Dating victimization was associated with higher levels of depression, suicidal thoughts, and poorer educational outcomes. Alcohol use and depression mediated the relationship between dating victimization and poorer educational outcomes.
Lindhorst & Oxford (2008)	To evaluate associations	Prospective data covering 14 years obtained via a study of adolescent	Independent: intimate partner violence, assessed	Both cumulative and concurrent intimate partner violence predicted

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
	between adolescent exposure to intimate partner violence and depressive symptoms up to 28 years of age	mothers from Washington State (n = 229)	using Straus' (1989) Conflict Tactics Scale, which measures family violence (as cited in Lindhorst & Oxford, 2008) Dependent: depressive symptoms, obtained using Derogotis' (1993) Brief Symptom Inventory (BSI) depression subscale, which measures psychological functioning violence (as cited in Lindhorst & Oxford, 2008)	the likelihood of depressive symptoms at age 28. Intimate partner violence during adolescence was associated with greater levels of adult intimate partner violence and reporting both adolescent and adult intimate partner violence resulted in more depressive symptoms.
Wolitzky-Taylor et al. (2008)	To examine the lifetime prevalence of dating violence, associated risk and protective factors, and associations between dating violence and mental health	The National Survey of Adolescents (NSA), an epidemiological study aimed at identifying stressors experienced by youths between the ages of 12 and 17 (n = 3,614)	Independent: serious dating violence (i.e., physical and sexual assault), other potentially traumatic events (i.e., nondating violence, serious motor vehicle accident, serious accident, fire, or natural disaster; loss of a close friend or loved one due to homicide or drunk driving accident; witnessing community violence; and witnessing parental violence), stressful	Risk factors for dating violence victimization included older age, female sex, experiencing other potentially traumatic events, and experiencing recent life stressors. Dating violence was associated with posttraumatic stress disorder and major depressive episode.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			life events (i.e., death of a parent, sibling, or friend; serious and life-threatening illness of self, sibling, or parent; and parental divorce or separation) Dependent: PTSD (DSM-IV symptoms), and major depressive episode (DSM-IV symptoms)	
Adolescent Victims of Bullying				
Juvonen, Graham, & Schuster (2003)	To investigate psychological and social problems exhibited by bullies, victims, and bully-victims (i.e., an individual who is both a bully and victim)	A survey of 6th-grade students and their teachers in 11 Los Angeles public middle schools that served low-income communities (N = 1,985)	Independent: bullying (i.e., starts fights, pushes other kids around, puts down and makes fun of others, and spreads rumors about others), victimization (i.e., gets pushed around, is put down or made fun of, and about whom nasty rumors are spread), peer reports of adjustment (i.e., "coolest" kids and kids that are avoided), and teacher reports of adjustment (i.e., internalizing problems, conduct problems,	Victims were emotionally distressed and had lower social standing among their classmates. Bully-victims displayed the highest level of conduct, school, and peer relationship problems.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			popularity, and school engagement Dependent: psychological distress, measured using Kovacs's (1992) Children's Depression Inventory Short Form and Greca and Lopez's (1998) Social Anxiety Scale for Adolescents (as cited in Juvoven et al., 2003)	
Rusby, Forrester, Biglan, & Metzler (2005)	To examine associations between peer harassment and problem behavior among a group of middle and high school students	Questionnaires that had been completed by fifth-, sixth-, and seventh-grade students in Oregon (n = 233)	Independent: verbal peer harassment (i.e., name calling and swearing), physical peer harassment (i.e., hitting, pushing, and physically fighting) Dependent: association with deviant peers (i.e., peers who get into trouble a lot, fight a lot, take things that don't belong to them, and smoke cigarettes or chew tobacco) and substance use (i.e., alcohol and cigarettes)	Frequent verbal harassment was positively associated with antisocial behavior, alcohol use, and deviant peer association. Frequent physical harassment was associated with antisocial behavior, aggression, deviant peer association, and multiple problem behavior.
Cuevas, Finkelhor, Turner, &	To examine links between delinquency and	The Developmental Victimization Survey, a nationally representative sample of adolescents between 10	Independent: victimization, obtained using Hamby, Finkelhor, Ormrod, and	Three significantly distinct groups: delinquent bully-victims (mostly males with high levels of

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
Ormrod (2007)	victimization by looking for possible subtypes of delinquents and victims	and 17 who participated in a phone interview ($N = 1000$)	Turner's (2004) Juvenile Victimization Questionnaire (JVQ) Dependent: delinquent behavior, obtained using Loeber and Dishion's (1983) Frequency of Delinquency Behavior (FDB), trauma, obtained using Briere's (1996) Trauma Symptom Checklist for Children (TSCC), lifetime adversity, obtained using Turner and Butler's, (2003) measure of nonviolent traumatic events, and chronic stressors (i.e., serious illnesses, accidents, and parent imprisonment, etc.) (as cited in Cueves et al., 2007)	delinquency, victimization, adversity, and anger); delinquent sex/maltreatment–victims (mostly older females with high levels of depression, anger, anxiety who participate in minor delinquency and substance use); and property-delinquent victims (mostly males with lower levels of victimization, property crime based delinquency, anger, and depression).
Klomeck, Marrocco, Kleinman, Schonfeld, & Gould (2007)	To assess the association between bullying behavior and depression, suicidal ideation, and suicide attempts among	A self-report survey that had been completed by 9th- through 12th-grade New York state high school students ($N = 2342$)	Independent: bullying (i.e., a student or group of students says or does nasty and unpleasant things to another) and victimization (i.e., having been bullied in school over the past four weeks) measures were	Adolescents who were frequently exposed to victimization or bullied others had higher risks of depression, suicide ideation, and suicide attempts than adolescents who had no involvement in bullying behavior. Among females in particular, infrequent

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
	adolescents		derived from Nansel et al.'s (2001) World Health Organization study on youth health Dependent: depression was measured using Beck and Steer's (1993) The Beck Inventory (BDI-IA), suicidal ideation was measured using Reynolds's (1988) The Suicide Ideation Questionnaire (SIQ-JR), and suicide attempt history was measured using Shaffer et al.'s (2000) Diagnostic Interview Schedule for Children	involvement in bullying behavior was associated with depression and suicidality.
Peskin, Tortolero, Markham, Addy, & Baumler (2007)	To examine associations between bullying, victimization, and internalizing symptoms among low-income, racial/ethnic-minority adolescents	An anonymous survey of students at eight predominantly Black and Hispanic, urban middle and high schools (N = 7,017)	Independent: bullying and victimization status (i.e., teasing, spreading rumors, being picked on, being hit or pushed, and participation level) Dependent: internalizing symptoms were measured using the "emotional symptoms" subscale of	Both middle and high school victims and middle school bully-victims were more likely to experience internalizing symptoms.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
Stein, Dukes, & Warren (2007)	To examine whether bully-victims would report the poorest psychosocial health, worst attitudes toward school, more problem behavior, and more physical injury than bullies, victims, and neutral students	An anonymous survey offered to all students from the four middle schools and two high schools serving Colorado Springs, Colorado; the researchers limited their focus to males (n = 1,312)	Goodman's (2001) Strengths and Difficulties Questionnaire (SDQ) (as cited in Peskin et al., 2007) Independent: bullies, victims, bully-victims, and neutrals based on responses to a series of questions based on McConville and Cornell's (2003) bullying and victim classifications (i.e., hitting or kicking, grabbing or shoving, and threatening someone weaker than yourself) (as cited in Stein et al., 2007) Dependent: Rosenberg's (1965) Self-Esteem Scale and Crumbaugh's (1968) Purpose in Life Scale measured psychosocial health, positive attitude toward school (i.e., school enjoyment and grade importance), being injured by someone, and problem behavior (i.e., weapon possession, fighting, hurting	Bully-victims generally reported the poorest psychosocial health, the worst attitudes toward school, more problem behavior and more physical injury than bullies, victims, and neutral students. The exception was that bullies did not report better school attitudes than bully-victims.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			someone, theft, property damage, getting in trouble with the police, curfew violations, alcohol and cigarette use, and hard drug use)	
Bradshaw, O'Brennan, & Sawyer (2008)	To examine the associations between being a bully, victim, or bully-victim; attitudes toward violence; and perceptions of safety	A school-based anonymous online survey on bullying administered to Maryland students in grades 6 through 10 (N = 16,012)	Independent: derived from Nansel et al. (2001) and included frequency of involvement in bullying, which was also derived from Solberg and Olweus 2003; form of victimization (i.e., "push/shove"); perceived reason (i.e., "the way you look or talk"); and bystander ("Have you seen someone else being bullied during the last month?") (as cited in Bradshaw et al., 2008) Dependent: safety and belongingness (i.e., "I feel safe at school" and "I feel like I belong at this school"), derived from the Institute of Behavioral Science (1990) survey, retaliatory attitudes (i.e., "It is OK to hit	Bully-victims were the most likely to report feeling unsafe and disconnected from their school, while bullies were the most likely to support aggressive retaliation.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			someone if they hit me first" and "If people do something to make me really mad, they deserve to be beaten up"), based on Huesmann et al. (1992), and perceptions of bullies (i.e., "The bullies at my school are popular with other students," "feared by other students," and "disliked by other students")	
Swearer, Turner, Givens, & Pollack (2008)	To examine effects of adolescent males' perceptions of being bullied by verbal taunts related to gender nonconformity	Cross-sectional study data that were part of a larger longitudinal study that examined bullying and victimization; participants were ninth-, tenth-, and eleventh-grade students in a private, all-male high school in an urban, Midwestern city (n = 251)	Independent: Swearer's (2005) The Bully Survey and Swearer's (2005) Verbal and Physical Bullying Scale (VPBS) measured bullying and victimization (as cited in Swearer et al., 2008) Dependent: aggression symptoms, measured using Buss and Warren's (2000) The Aggression Questionnaire, anxiety symptoms, measured using March's (1997) Multidimensional Anxiety Scale for Children (MASC), depression symptoms,	Males who were by being called gay experienced greater psychological distress, greater verbal and physical bullying, and more negative perceptions of their school experiences than boys who were bullied for other reasons.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			measured using Klovacs' (1992) Children's Depression Inventory survey, hopelessness symptoms, measured by Kazdin et al.'s (1983) The Hopelessness Scale for Children (HSC), internal-external locus of control, measured using Nowicki and Strickland's (1973) Children's Nowicki-Strickland Internal-External Scale (CNSIE), and perceptions of school climate, measured using Song and Swearer's (1999) Thoughts About School (TAS) survey (as cited in Swearer et al., 2008)	
Dukes, Stein, & Zane (2009)	To examine dysfunctional correlates of relational (i.e., indirect/nonphysical) and physical bullying	A survey of middle and high school students living in Colorado Springs, Colorado (N = 2,494)	Independent: bullies, victims, bully-victims, and neutrals, based on their responses to a series of questions proposed by Crick and Grotpeter (1995) that assessed participation and being a victim of relational bullying (i.e., "...told	Neutrals had the highest self-esteem, best school attitudes, least problem behavior, least injury, and were less likely to engage in physical bullying or be physically bullied. Relational bully-victims had the lowest self-esteem, worst school attitudes, most problem behavior, most injuries, were most

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			friends you would stop liking them unless they did what you said," "...told lies about someone to make other kids not like them anymore," "...tried to keep certain people from being in your group," and "...spread embarrassing information about someone?") (as cited in Dukes et al., 2009, p.675) Dependent: self-esteem, which was assessed using Rosenburg's (1965) Self-esteem Scale (as cited in Dukes et al., 2009), positive attitudes towards school (i.e., school enjoyment and feelings towards grades), problem behavior (i.e., weapon possession, delinquent behavior, alcohol use, and hard drug use), injury (i.e., being injured by someone enough to need bandages or a doctor), physical bullying (i.e.,	likely to engage in more physical bullying, and be physically victimized. Bullies and victims had better outcomes than relational bully-victims, but much poorer outcomes than neutrals.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			harming or threatening someone weaker than yourself), and physical victimization (i.e., being harmed or threatened by someone stronger than yourself)	
Esbensen & Carson (2009)	To examine the effects being a nonvictim, intermittent victim, and repeat victim of bullying would have on attitude	Participants were in grades 6 through 9 in schools purposively sampled across the United States (original N = 2,353; final n = 1,117) resulting in three waves of longitudinal data	Independent: bully victimization (i.e., been attacked or threatened at school; had mean rumors or lies spread about you at school; had sexual jokes, comments, or gestures made to you at school; and been made fun of at school because of your looks or the way you talk) Dependent: psychological well-being (i.e., self-esteem, empathy, self-efficacy, and sense of powerlessness), and social adjustment (i.e., commitment to positive and negative peers, conflict resolution skills, school commitment, fear of school victimization, perceived risk	Students categorized as intermittent victims experienced some negative consequences, while victims of repeated victimization are more strongly affected. Repeatedly victimized students displayed significantly lower levels of self-esteem and self-efficacy, relative to nonvictims.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			of school victimization, and assessment of school safety)	
O'Brennan (2009)	To examine associations between frequent bullying and aggressive impulsivity, attitudes toward aggressive retaliation, internalizing symptoms, peer relations, and perceptions of school climate	Elementary, middle, and high school students attending 105 public schools in Maryland, completed an anonymous online survey on bullying (N = 24,345)	Independent: prevalence of bullying (i.e., "How often have you been bullied during the last month?" and "How often have you bullied someone else during the last month?") Dependent: retaliatory attitudes (i.e., It is OK to hit someone if they hit me first?" and "If I walk away from a fight, everyone will think I am a coward"), aggressive impulsivity (i.e., "I get mad easily," "I do things without thinking," "I have trouble controlling my temper," and "I have threatened to hit or hurt someone"), internalizing problems (i.e., "I am lonely," "I am sad," and "I am worried something bad is going to happen") peer relationships (i.e., "It is important to have friends"	Bully-victims were most likely to display internalizing symptoms, problems in peer relationships, and have poorer perceptions of the school environment. Both frequent bullies and bully-victims displayed aggressive-impulsive behavior and endorsed retaliatory attitudes.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			and "I have a lot of friends at this school"), and safety and belongingness (i.e., "I feel safe at school" and "I feel like I belong at this school")	
Tharp-Taylor, Haviland, & D'Amico (2009)	To assess the association between victimization from mental and physical bullying and substance use among middle school students	A survey of southern California middle school (N = 926)	Independent: physical (i.e., pushed, shoved, slapped, hit, or kicked by someone who wasn't just kidding around) and mental (i.e., being afraid of being beaten up or having been the victim of mean rumors or lies) bullying were measured using WestEd's (2005) California Healthy Kids Survey (CHKS) (as cited in Tharp-Taylor et al., 2009) Dependent: Substance use (i.e., alcohol, cigarettes, marijuana, and inhalants) measures were directed by Johnston et al.'s (2003) Monitoring the Future and Brown et al.'s (1998) Customary Drinking and Drug Use Record (as cited in Tharp-Taylor et al., 2009)	A positive association between bullying victimization and substance use was reported, as both types of bullying (separately or combined) were associated with use of each substance.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
Carbone-Lopez, Esbensen, & Brick (2010)	To explore gender similarities and differences between the consequences and correlates of direct (i.e., physical) and indirect (i.e., nonphysical) bullying victimization	A school-based education program among American students in grades 6 through 9 (N = 2,353)	Independent: direct and indirect bullying victimization (i.e., physical violence), poverty, the participant's status as either a racial/ethnic majority or minority at their school Dependent: consequences of victimization (i.e., self-esteem, delinquent behavior, drug use, and gang membership)	Indirect bullying significantly reduced female self-esteem. Intermittent, direct and indirect bullying increased male delinquency, while intermittent direct bullying and repeated indirect bullying increased female delinquency.
Luk, Wang, & Simons-Morton (2010)	To examine associations between bullying victimization, substance use, and depression in a national sample of 10th grade adolescents	The 2005/2006 U.S. Health Behavior in School-aged Children (HBSC) survey (N = 1,495)	Independent: victimization was measured using Olweus' (1996) revised bully/victim instrument (as cited in Luk et al., 2010) Dependent: substance use (i.e., cigarettes, alcohol, and marijuana) and Radloff's (1977) Center for Epidemiologic Studies Depression Scale was used to obtain depression measures (as cited in Luk et al., 2010).	Victimization was positively associated with substance use and depression in females. Regarding males, victimization was positively associated with depression.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
Adolescent Victims of Cyberbullying				
Ybarra (2004)	To examine the cross-sectional relationship between depressive symptomatology and Internet harassment	The Youth Internet Safety Survey (YISS), a survey of randomly sampled adolescent Internet users 10 to 17 years of age (N = 1,501)	Independent: Internet harassment (i.e., feeling worried or threatened because they have been bothered or harassed while online and feeling threatened or embarrassed because someone had posted or sent a message for others to see), internet use (i.e., instant messaging, emailing, downloading files, updating a web page, connecting to a news group, visiting chat rooms, looking up movie information, logging onto the Internet from home or other places, using the Internet five or more days a week, self-rated Internet skill level, importance of Internet to self, and hours of use per week) Dependent: substance use (i.e., alcohol, tobacco, marijuana, inhalants, and all other drugs), peer	The odds of reporting an Internet harassment experience were over three times higher for those who reported major depressive symptoms compared to less or a lack of symptoms. These odds were over than three times greater for males, compared to females.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			relationships (i.e., number of close friends), and additional psychosocial challenges (i.e., death in the immediate family, moving to a new community, caregiver divorce, and loss of job among the caregivers). The American Psychiatric Association's (1994) Diagnostic Statistical Manual–IV directed measures of depressive symptoms (as cited in Ybarra, 2004)	
Hinduja & Patchin (2007)	To identify the emotional and behavioral effects of cyberbullying victimization	An online survey instrument that was linked to websites frequently visited by adolescents (original N = 6,800, final n = 1,388). The majority of participants were American (74.5%), as adolescents from other countries were able to respond	Independent: cyberbullying victimization (i.e., ignored by others, disrespected by others, being called names, rumors spread by others, threatened, made fun of by others, picked on by others, and scared for safety) and strain (i.e., being treated unfairly, receiving a bad grade, disagreement with a family member, death or hospitalization of close friend or family member,	Cyberbullying victimization was significantly and positively associated with offline problem behaviors. Strain was found to mediate the relationship between cyberbullying victimization and offline problem behaviors.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			disagreement with a friend, money problems, recent break up with a significant other, recently divorced parents, and crime victimization) Dependent: problem behavior (i.e., drinking liquor, cheating on a school test, skipping school, assaulting a peer, damaging property, shoplifting, smoking marijuana, assaulting an adult, running away from home, weapon carrying, and being sent home from school)	
Hinduja & Patchin (2008b)	To examine associations between cyberbullying, Internet usage, and several offline behavioral problems	An online survey instrument that was available on websites typically frequented by adolescents (original N = 6,800, final n = 1,378). The majority of participants were American (74.6%), as adolescents form other countries were able to respond.	Independent: cyberbullying (i.e., bothering someone online; teasing in a mean way; calling someone hurtful names; intentionally leaving persons out of things; threatening someone; saying unwanted sexually-related things to someone; when someone is threatened or scared for their safety	Computer proficiency and time spent online were positively associated with cyberbullying victimization and offending. Cyberbullying experiences, as either a victim or offender, were associated with school problems, traditional bullying, assaultive behavior, and substance use.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			because of something someone said to them; and threatening someone online with physical harm) Dependent: several behavioral problems (i.e., skipping school; cheating; being sent home from school for bad behavior; fighting with peers; consuming liquor or smoking marijuana; and involvement in traditional bullying as either a bully, victim, or both); the amount of time spent online per week; and online activities (online proficiency)	
Juvonen & Gross (2008)	To examine the overlap among targets of, and the similarities between, online and in-school bullying among Internet-using adolescents	A nationally representative sample of 12- to 17-year-old public, private, and homeschooled students who completed an anonymous online survey (N = 1,454)	Independent: online experience and communication tool use (i.e., length of internet use, daily internet use, use of electronic communication tools, personal or opinion website use, using cell phones with text and picture messaging, and webcam	Both in-school and online bullying experiences were independently associated with increased social anxiety.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			use), and bullying experiences (i.e., name-calling or insults; threats; spreading of embarrassing or private pictures; sharing of private communications; password theft; and encountering mean things via e-mail, IM, cell phone text messaging, in a chat room, blog, personal profile site, and/or message boards) Dependent: social anxiety was measured using La Greca and Lopez's (1998) Adolescent Social Anxiety Scale (SAS-A) (as cited in Juvonen & Gross, 2008)	
Goebert, Else, Matsu, Chung-do, & Chang (2010)	To examine the relationship between cyberbullying and mental health problems	A group of primarily Asian and Pacific Islander adolescents at two Hawaiian high schools (N = 677)	Independent: cyberbullying (i.e., receiving a threatening or mean text message; receiving a threatening or mean e-mail; having embarrassing, threatening or mean information posted about them on a website; having a dating partner go through their cell phone to	Cyberbullying victimization increased the likelihood of binge drinking and marijuana use 2.5 times, increased the likelihood of depression by almost 2 times, and suicide attempts by 3.2 times for females and 4.5 times for males.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			check on calls or text messages; and having a partner go through their personal website to check up on them Dependent: substance use (i.e., alcohol and marijuana), and mental health (i.e., depression, anxiety, and suicide attempts)	
Hay, Meldrum, & Mann (2010)	To examine the effects of traditional and cyberbullying on externalizing and internalizing deviance	Adolescents at a middle and high school in a southeastern state completed a survey at school (N = 400)	Independent: traditional bullying (i.e., the target of lies or rumors; the target of attempts to get others to dislike them; called names, made fun of, or teased in a hurtful way; hit, kicked, or pushed by another student; physically threatened by other students; and picked on by others), cyberbullying (i.e., the target of "mean" text messages, sent threatening or hurtful statements or pictures in an e-mail or text message, and made fun of on the Internet)	Consistent, significant associations between bullying, cyberbullying, and both forms of deviance, with cyberbullying displaying slightly higher effects were found.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			Dependent: externalizing delinquency (i.e., stolen something worth less than $50; stolen something worth more than $50; damaged, destroyed, or tagged property that did not belong to them; entered a building or house without permission from the owner; and hit, kicked, or struck someone with the idea of seriously hurting them), and internalizing deviance (i.e., suicidal ideation and self-harm)	
Hinduja & Patchin (2010)	To examine associations between traditional bullying, cyberbullying, and suicidal ideation among adolescents	A random sample of middle school students from one of the largest school districts in the United States completed a survey of Internet use and experiences (N = 1,963)	Independent: traditional bullying (i.e., name-calling; making fun; teasing; and telling lies, spreading false rumors, or trying to get others to dislike someone), and cyberbullying (i.e., posting something online about another person to make others laugh and receiving an upsetting email) Dependent: suicide ideation	Youth who experienced traditional bullying or cyberbullying, as either an offender or a victim, had more suicidal thoughts and were more likely to attempt suicide than those who had not. Victimization was more strongly related to suicidal thoughts and behaviors than offending.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			(i.e., seriously thinking about or attempting suicide)	
Patchin & Hinduja (2010)	To examine the relationship between middle school students' experience with cyberbullying and their level of self-esteem	A survey distributed during the spring of 2007 to a random sample of students from 30 middle schools in one of the largest school districts in the United States (N = 1963); youth were selected to participate if they were enrolled in a district-wide peer conflict class required of all middle school students	Independent: cyberbullying victimization (i.e., receiving an upsetting e-mail from someone you know, receiving an instant message that made you upset, having something posted on your MySpace that made you upset, being made fun of in a chat room, receiving an upsetting e-mail from someone you did not know, having something posted about you on another Web page that made you upset, having something posted about you online that you did not want others to see, being picked on or bullied online, and being afraid to go on the computer) and cyberbullying offending (i.e., posting something online about another person to make others laugh, sending someone a computer text message to make them	Students who had experienced cyberbullying, both as a victim and an offender, had significantly lower self-esteem than those who had little or no experience with cyberbullying.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			angry or to make fun of them, taking a picture of someone and posted it online without their permission, posting something on MySpace or a similar site to make someone angry or to make fun of them, and sending someone an e-mail to make them angry or to make fun of them) Dependent: Rosenberg's (1965) validated measure of self-esteem (as cited in Patchin & Hinduja, 2010)	
Schneider, O'Donnell, Stueve, & Coulter (2012)	To examine cyberbullying and school bullying victimization and their associations with psychological distress	The MetroWest Adolescent Health Survey, a census survey of Boston area high school students that monitors trends to inform school and community policies and practices (N = 20,406)	Independent: bullying (i.e., being repeatedly teased, threatened, hit, kicked, or excluded by another student or group of students), cyberbullying (i.e., someone using the Internet, a phone, or other electronic communications to bully, tease, or threaten) Dependent: psychological distress (i.e., depressive	Victimization was associated with lower school performance and school attachment and that distress was highest among victims of both cyberbullying and school bullying.

Table 1: (continued)

Author/Year	Objective	Population/Dataset	Variables	Major Findings
			symptoms, suicidal ideation, suicide attempts, and self-injury)	

2.5 The Social Ecological Model

Bronfenbrenner's Social Ecological Model (SEM), which labels levels of the environment that influence development, as the microsystem, mesosystem, exosystem, macrosystem (Gauvain & Cole, 2004) guided all study methods. The model has since been adapted to reflect individual, relationship, community and societal levels (Figure 1) (Krug et al., 2002).

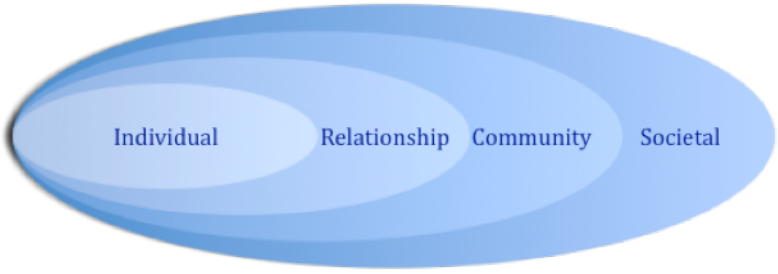

Figure 1: The Social Ecological Model

The SEM implies that an individual is influenced by factors within each level of the model. For example, an adolescent that has healthy relationships with family members, peers, and school officials is more likely to practice healthy behaviors than an adolescent that does not. The levels within the model may be examined individually or together, as each level has an effect on the others. An example would be how laws and policies at the state level affect school policies (societal level), which, in turn, affect how different situations affecting an adolescent at school are addressed (relationship and individual levels). The SEM has been applied to various aspects of adolescent health including violence (Riner & Saywell, 2002), bullying (M. L. C. Campbell & Morrison, 2007; Espelage & Swearer, 2004; Garbarino & deLara, 2002; Lataster et al., 2006;

Newman-Carlson, Horne, & Bartolomucci, 2000; Olweus, 1993; Swearer & Doll, 2001), physical activity (Elder et al., 2007), sexual health (Hovell et al., 1994), substance abuse (Kumpfer & Turner, 1990), neighborhood disadvantage (Elliott et al., 1996), and school connectedness (Waters, Cross, & Runions, 2009).

Figure 2 depicts the adapted theoretical framework, based on the SEM that will guide the proposed research. Two highly influential levels of influence from the model have been incorporated: individual and relationship. The SEM is appropriate to this research because it implies that individuals are influenced by their relationships and environment. For purposes of this study, the stress and strain caused by victimization represent relationship factors. Their influence is represented by the potential associations these factors have on individual mental health, delinquent behavior, and substance use and abuse. Although the ultimate goal regarding victimization is prevention, health promotion and intervention efforts are necessary if harm does occur. The SEM is able to address both of these tasks by guiding effective research, programs, policies, and practices at the appropriate level of influence.

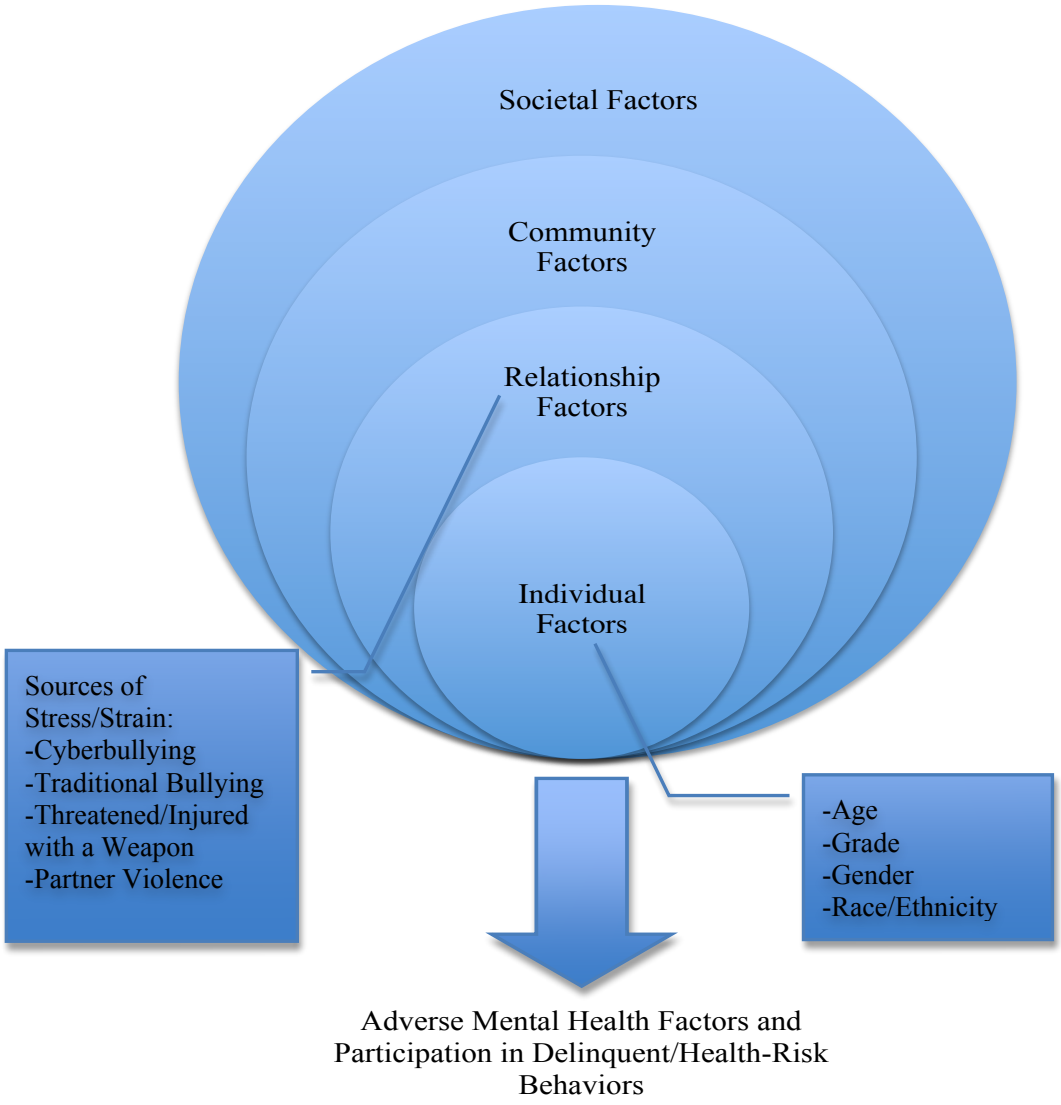

Figure 2: Adapted Social Ecological Model

CHAPTER 3: METHODS

The purpose of this chapter is to explain the methods used to conduct this study. First, the source of data source will be presented. Next, the methods used to prepare the data set for analysis and a description of all variables will be provided. Lastly, data analysis methods will be presented for each specific aim. SPSS v20.0 was used for all descriptive and inferential analyses. All tests were set at a 95% level of significance.

3.1 Source of Data

This study made use of one nationally representative survey instrument: the Youth Risk Behavior Survey (YRBS). This dataset is part of the CDC's Youth Risk Behavior Surveillance System (YRBSS), an epidemiologic system that focuses on priority health-risk behaviors established during youth and young adulthood that result in the most significant mortality, morbidity, disability, and social problems. The YRBS is conducted every two years and may be employed by various national, state, territorial, local private and public organizations that aim to improve adolescent health. Uses may include tracking progress toward meeting health goals, modification of school health programs, supporting new policies and practices that promote health. For purposes of this research, the 2011 YRBS was used because it is the first and only year that data from questions that measure cyberbullying. The 2011 YRBS includes national, state, territorial, tribal government, and local school-based surveys conducted among students in grades 9 through 12 from October 2010 to February 2012.

3.2 Variables

The independent variables for this research are four types of adolescent victimization: (1) *being threatened or injured with a weapon at school*, *being a victim of* (2) *partner violence*, (3) *traditional bullying*, and (4) *cyberbullying*. The participants were asked how often they were electronically bullied, bullied on school property, threatened or injured with a weapon such as a gun, knife, or club on school property, or hit slapped or physically hurt by a girlfriend or boyfriend in the past 12 months. All independent variables were dichotomized with "no" or "0 times" represented as "0" and all others, "1." Table 2 provides each victimization independent variable, its corresponding survey question and all possible responses.

Four items were used to measure (1) *mental health factors*, the first dependent variable. Participants were asked if they felt sad or hopeless almost every day for two weeks or more in a row that usual activities stopped, if they seriously considered suicide, made a plan about how suicide would be attempted or actually attempted suicide in the past 12 months. The second dependent variable represents (2) *delinquent behavior and substance use and abuse*. Participants were asked about recent drinking and driving, ever using alcohol, recent alcohol use, ever using marijuana, recent marijuana use, ever using cocaine, recent cocaine use, ever using heroin, ever using methamphetamines, ever using ecstasy, ever using prescription drug without prescription, ever using hallucinogenic drugs, recent weapon carrying, recent gun carrying, recent weapon carrying on school property, recent fighting and recent fighting on school property. All dependent variables were dichotomized with "no," "0 times," or "0 days" represented as "0" and all others,

"1." Table 3 provides each mental health, delinquent behavior, and substance use and abuse dependent variable, its corresponding survey question and all possible responses.

The demographic variables that were used as covariates during multivariate analysis include (1) *age*, (2) *grade*, (3) *gender*, and (4) *race/ethnicity*. Table 4 provides each covariate, its corresponding survey question and all possible responses. The frequency counts and percentages of the YRBS variable classifications according to all respondents (N = 15,425) and according to the random sample of respondents used for hypothesis testing (n = 350) have been presented in the population and demographic findings section of following chapter.

Table 2: Independent variables and corresponding survey questions from the 2011 YRBS

Independent Variable	Survey Question
Victim of Cyberbullying	Q23. During the past 12 months, have you ever been electronically bullied? (Include being bullied through e-mail, chat rooms, instant messaging, Web sites, or texting.) A. Yes B. No
Victim of Traditional (face-to-face) Bullying	Q22. During the past 12 months, have you ever been bullied on school property? A. Yes B. No
Threatened or Injured with a Weapon at School	Q16. During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or 7 times F. 8 or 9 times G. 10 or 11 times H. 12 or more times
Victim of Partner Violence	Q20. During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose? A. Yes B. No

Table 3: Dependent variables and corresponding survey questions from the 2011 YRBS

Dependent Variable	Survey Question
Mental Health Factors	
Sad or Hopeless	Q24. During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities? A. Yes B. No
Seriously Considered Attempting Suicide	Q25. During the past 12 months, did you ever seriously consider attempting suicide? A. Yes B. No
Made a Plan for Attempting Suicide	Q26. During the past 12 months, did you make a plan about how you would attempt suicide? A. Yes B. No
Actual Suicide Attempt	Q27. During the past 12 months, how many times did you actually attempt suicide? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or more times
Delinquent Behavior/Substance Use and Abuse	
Recent Drinking and Driving	Q11. During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or more times

Table 3: (continued)

Ever Use Alcohol	Q40. During your life, on how many days have you had at least one drink of alcohol? A. 0 days B. 1 or 2 days C. 3 to 9 days D. 10 to 19 days E. 20 to 39 days F. 40 to 99 days G. 100 or more days
Recent Alcohol Use	Q42. During the past 30 days, on how many days did you have at least one drink of alcohol? A. 0 days B. 1 or 2 days C. 3 to 5 days D. 6 to 9 days E. 10 to 19 days F. 20 to 29 days G. All 30 days
Ever Use Marijuana	Q46. During your life, how many times have you used marijuana? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 to 99 times G. 100 or more times
Recent Marijuana Use	Q48. During the past 30 days, how many times did you use marijuana? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times

Table 3: (continued)

Ever Use Cocaine	Q50. During your life, how many times have you used any form of cocaine, including powder, crack, or freebase? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times
Recent Cocaine Use	Q51. During the past 30 days, how many times did you use any form of cocaine, including powder, crack, or freebase? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times
Ever Use Heroin	Q53. During your life, how many times have you used heroin (also called smack, junk, or China White)? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times
Ever Use Methamphetamines	Q54. During your life, how many times have you used methamphetamines (also called speed, crystal, crank, or ice)? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times

Table 3: (continued)

Ever Use Ecstasy	Q55. During your life, how many times have you used ecstasy (also called MDMA)? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times
Ever Use Prescription Drug Without Prescription	Q57. During your life, how many times have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times
Ever Use Hallucinogenic Drugs	Q89. During your life, how many times have you used hallucinogenic drugs, such as LSD, acid, PCP, angel dust, mescaline, or mushrooms? A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times
Recent Weapon Carrying	Q12. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club? A. 0 days B. 1 day C. 2 or 3 days D. 4 or 5 days E. 6 or more days

Table 3: (continued)

Recent Gun Carrying	Q13. During the past 30 days, on how many days did you carry a gun? A. 0 days B. 1 day C. 2 or 3 days D. 4 or 5 days E. 6 or more days
Recent Weapon Carrying on School Property	Q14. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property? A. 0 days B. 1 day C. 2 or 3 days D. 4 or 5 days E. 6 or more days
Recent Fighting	Q17. During the past 12 months, how many times were you in a physical fight? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or 7 times F. 8 or 9 times G. 10 or 11 times H. 12 or more times
Recent Fighting on School Property	Q19. During the past 12 months, how many times were you in a physical fight on school property? A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or 7 times F. 8 or 9 times G. 10 or 11 times H. 12 or more times

Table 4: Control Variables, and corresponding survey questions from the 2011 YRBS

Control Variable	Survey Question
Age	Q1. How old are you? A. 12 years old or younger B. 13 years old C. 14 years old D. 15 years old E. 16 years old F. 17 years old G. 18 years old or older
Grade	Q3 In what grade are you? A. 9th grade B. 10th grade C. 11th grade D. 12th grade E. Ungraded or other grade
Gender	Q2. What is your sex? A. Female B. Male
Race	Q5. What is your race? (Select one or more responses.) A. American Indian or Alaska Native B. Asian C. Black or African American D. Native Hawaiian or Other Pacific Islander E. White
Ethnicity	Q4. Are you Hispanic or Latino? A. Yes B. No

Similar variables were combined, resulting in five new variables for use during hypothesis testing: (a) *recent gun or weapon carrying*, (b) *recent drug use*, (c) *considered or planned to attempt suicide*, (d) *number of mental health factors*, and (e) *number of delinquent and substance use and abuse behaviors*.

Recent gun or weapon carrying was constructed from two ordinal YRBS items, Q12 "During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?" and Q13 "During the past 30 days, on how many days did you carry a gun?" If a respondent answered "0 times" to both Q12 and Q13, then they were coded as 0 = no, indicating they did not carry a gun or weapon in the past 30 days. Otherwise, a respondent was coded as 1 = yes, indicating they had carried a gun or weapon in the past 30 days. The *recent gun or weapon carrying* variable was used as the dependent variable in the logistic regression addressing Hypothesis 2a.

Recent drug use was constructed from six ordinal YRBS items, Q51 "During the past 30 days, how many times did you use any form of cocaine, including powder, crack, or freebase?"; Q53 "During your life, how many times have you used heroin (also called smack, junk, or China White)?"; Q54 "During your life, how many times have you used methamphetamines (also called speed, crystal, crack, or ice)?"; Q55 "During your life, how many times have you used ecstasy (also called MDMA)?"; Q57 "During your life, how many times have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription?"; and Q89 "During your life, how many times have you used hallucinogenic drugs, such as LSD, acid, PCP, angel dust, mescaline, or mushrooms?" If a respondent answered "0 times" to

Q51, Q53, Q54, Q55, Q57, and Q89, then they were coded as 0 = no, indicating they did not use drugs in the past 30 days or in their life. Otherwise, a respondent was coded as 1 = yes, indicating they used drugs in the past 30 days or in their life. The *recent drug use* variable was used as the dependent variable in the logistic regression addressing Hypothesis 2e.

Considered or planned suicide attempt was constructed from two nominal YRBS items, Q25 "During the past 12 months, did you ever seriously consider attempting suicide?" and Q26 "During the past 12 months, did you make a plan about how you would attempt suicide?" If a respondent answered "0 times" to both Q25 and Q126, then they were coded as 0 = no, indicating they did not consider or plan to attempt suicide in the past 12 months. Otherwise, a respondent was coded as 1 = yes, indicating they had considered or planned to attempt suicide in the past 12 months. The *considered or planned suicide attempt* variable was used as the dependent variable in the logistic regression addressing Hypothesis 2g.

The *number of mental health factors* variable was used as the dependent variable in the ordinal regression addressing Hypothesis 3a and can have a range of 0 to 4.

The *number of delinquent and substance use and abuse behaviors* variable was used as the dependent variable in the ordinal regression addressing Hypothesis 3b and can have a range of 0 to 17.

3.3 Assumptions

A series of McNemar's Tests (on dependent proportions of Hypothesis 1) or chi-square tests of independence (for independent proportions of Hypothesis 1), binary logistic regressions (Hypothesis 2), and Spearman's Rank Order Correlations (Hypothesis

3) were performed for this study. The dataset was investigated for the analysis assumptions of independence of observations and adequate cell count (for the chi-square tests), and absence of multicollinearity and absences of outliers (for the regression analyses) as relates to the variables used in hypothesis testing.

Assumptions for the chi-square tests include independence of observations and the criteria that at least 80 percent of cells in the contingency table have an expected count of five or more observations. These assumptions were met.

The assumption of absence of multicollinearity between independent variables was investigated with Spearman's rank order correlations. Multicollinearity between two variables is defined as a correlation of .90 or above (Tabachnick & Fidell, 2007). The bi-variate association between the variables of (a) Age and (b) Grade Level produced a correlation coefficient of 0.863, indicating a strong direct association. The effect was very close to the .90 threshold, and both variables were determined to be assessing the same concept. As a result, Grade Level was not included as an independent variable in the hypothesis testing using logistic and ordinal regressions. The assumption of absence of multicollinearity was thus met.

The dataset was investigated for outliers on the variables included in hypothesis testing. All nominal variables were classified according to acceptable categorical values, and the variable of Age included only values within the acceptable ranges of this study. Therefore the assumption of absence of outliers was met.

3.4 Data Analysis

The goal of this cross-sectional, secondary data analysis was to examine the associations among adolescent victimization, mental health factors, and delinquent and

substance use and abuse behaviors. The inferential analyses used in this study made use of the frequentist method of hypothesis testing. The frequentist method is based on probability. Thus, using very large samples in hypothesis testing with frequentist methods will return results that indicate statistical significance on effects, even when the sizes of the tested effects are trivial (Johnson, 1999). The population data from the 2011 YRBS included $N = 15{,}425$ records, a very large data frame. Therefore, in order to infer significant findings only on effects with magnitudes of a more reasonable size, a random sample was pulled from the $N = 15{,}425$ records for use in hypothesis testing for inference.

In order to make sure the random sample was representative of the entire population, sample size calculations were completed. Gpower software (Faul, Erdfelder, Lang, & Buchner, 2007) determined a sufficient sample for a logistic regression analysis with $\alpha = .05$, power of .80, and an ability to detect significance with an odds ratio (effect size) of 1.5. A total of 308 records were determined to be sufficient according to the power analysis. In order to account for instances of missing records for some of the hypothesis tests, a random sample of $n = 350$ records was collected from the $N = 15{,}425$ records using the randomization protocol provided by SPSS software. These $n = 350$ records were used for the hypothesis testing of this study.

Pairwise deletion was used to address missing data. This method removes the specific missing values from the analysis, as opposed to the entire case, leaving all available data included. Pairwise deletion is a useful way to approach missing data when sample size is small or missing values are large, both of which were aspects of this study.

The three specific aims, research hypotheses, their associated null and alternative statistical hypotheses tested, and analysis procedures are as follows:

Specific Aim 1. Examine the demographics and background characteristics (i.e. gender, race, ethnicity, age, grade level) associated with various issues of mental health, delinquent and substance use and abuse behaviors, and four types of adolescent victimization: being threatened or injured by a weapon, partner violence, traditional bullying, and cyberbullying.

Research Hypothesis 1. Adolescents are more likely to experience cyberbullying than individual traditional bullying, being threatened or injured by a weapon or partner violence; females are more likely to be victims of cyberbullying and partner violence than males; males are more likely to be victims of traditional bullying and being threatened or injured by a weapon; racial and ethnic minorities are more likely to be victims of traditional bullying and being threatened or injured by a weapon and White adolescents are more likely to be victims of cyberbullying; adolescent victimization is more likely to occur during grades 9 and 10 than 11 and 12.

Null Hypothesis 1a. Adolescents experience the same proportion, or a lesser proportion, of cyberbullying than individual traditional bullying.

Alternative Hypothesis 1a. Adolescents experience a significantly greater proportion of cyberbullying than individual traditional bullying.

McNemar's Test was performed to compare the paired proportions of $N = 315$ adolescents on their experience with being cyberbullied (40 adolescents, 13% of the sample) and being traditionally bullied (56 adolescents, 18% of the sample).

Null Hypothesis 1b. Adolescents experience the same proportion, or a lesser proportion, of cyberbullying than being threatened or injured by a weapon at school.

Alternative Hypothesis 1b. Adolescents experience a significantly greater proportion of cyberbullying than being threatened or injured by a weapon at school.

McNemar's Test was performed to compare the paired proportions of $N = 316$ adolescents on their experience with being cyberbullied (41 adolescents, 13% of the sample) and being threatened or injured by a weapon at school (30 adolescents, 9% of the sample).

Null Hypothesis 1c. Females experience the same proportion, or a lesser proportion, of cyberbullying than males.

Alternative Hypothesis 1c. Females experience a significantly greater proportion of cyberbullying than males.

A chi-square test of independence was performed to investigate differences in the proportions of cyberbullying between males (18 of 157 males, 12% of males) and females (23 of 158 females, 15% of females).

Null Hypothesis 1d. Females experience the same proportion, or a lesser proportion, of partner violence than males.

Alternative Hypothesis 1d. Females experience a significantly greater proportion of partner violence than males.

A chi-square test of independence was performed to investigate differences in the proportions of partner violence between males (21 of 174 males, 12% of males) and females (22 of 172 females, 13% of females).

Null Hypothesis 1e. Males experience the same proportion, or a lesser proportion, of traditional bullying than females.

Alternative Hypothesis 1e. Males experience a significantly greater proportion of traditional bullying than females.

A chi-square test of independence was performed to investigate differences in the proportions of traditional bullying between males (27 of 169 males, 16% of males) and females (33 of 165 females, 20% of females).

Null Hypothesis 1f. Males experience the same proportion, or a lesser proportion, of being threatened or injured with a weapon at school than females.

Alternative Hypothesis 1f. Males experience a significantly greater proportion of being threatened or injured with a weapon at school than females.

A chi-square test of independence was performed to investigate differences in the proportions of being threatened or injured with a weapon at school between males (18 of 176 males, 10% of males) and females (13 of 172 females, 8% of females).

Null Hypothesis 1g. Racial and ethnic minority adolescents experience the same proportion, or a lesser proportion, of traditional bullying than White adolescents.

Alternative Hypothesis 1g. Racial and ethnic minority adolescents experience a significantly greater proportion of traditional bullying than White adolescents.

A chi-square test of independence was performed to investigate differences in the proportions of traditional bullying between racial and ethnic minority adolescents (32 of 214 racial and ethnic minority adolescents, 15% of racial and ethnic minority adolescents) and White adolescents (28 of 121 White adolescents, 23% of White adolescents).

Null Hypothesis 1h. Racial and ethnic minority adolescents experience the same proportion, or a lesser proportion, of being threatened or injured with a weapon at school than White adolescents.

Alternative Hypothesis 1h. Racial and ethnic minority adolescents experience a significantly greater proportion of being threatened or injured with a weapon at school than White adolescents.

A chi-square test of independence was performed to investigate differences in the proportions of being threatened or injured with a weapon at school between racial and ethnic minority adolescents (20 of 224 racial and ethnic minority adolescents, 9% of racial and ethnic minority adolescents) and White adolescents (11 of 125 White adolescents, 9% of White adolescents).

Null Hypothesis 1i. White adolescents experience the same proportion, or a lesser proportion, of cyberbullying than racial or ethnic minority adolescents.

Alternative Hypothesis 1i. White adolescents experience a significantly greater proportion of cyberbullying than racial or ethnic minority adolescents.

A chi-square test of independence was performed to investigate differences in the proportions of cyberbullying between racial and ethnic minority adolescents (20 of 202 racial and ethnic minority adolescents, 10% of racial and ethnic minority adolescents) and White adolescents (21 of 114 White adolescents, 18% of White adolescents).

Null Hypothesis 1j. Adolescents in the 9^{th} or 10^{th} grades experience the same proportion, or a lesser proportion, of cyberbullying than adolescents in the 11^{th} or 12^{th} grades.

Alternative Hypothesis 1j. Adolescents in the 9th or 10th grades experience a greater proportion of cyberbullying than adolescents in the 11th or 12th grades.

A chi-square test of independence was performed to investigate differences in the proportions of cyberbullying between adolescents in 9th or 10th grade (19 of 153 9th or 10th grade students, 12% of 9th or 10th grade students) and adolescents in the 11th or 12th grade (22 of 160 11th or 12th grade students, 14% of 11th or 12th grade students).

Null Hypothesis 1k. Adolescents in the 9th or 10th grades experience the same proportion, or a lesser proportion, of traditional bullying than adolescents in the 11th or 12th grades.

Alternative Hypothesis 1k. Adolescents in the 9th or 10th grades experience a greater proportion of traditional bullying than adolescents in the 11th or 12th grades.

A chi-square test of independence was performed to investigate differences in the proportions of traditional bullying between adolescents in 9th or 10th grade (38 of 163 9th or 10th grade students, 23% of 9th or 10th grade students) and adolescents in the 11th or 12th grade (21 of 169 11th or 12th grade students, 12% of 11th or 12th grade students).

Null Hypothesis 1l. Adolescents in the 9th or 10th grades experience the same proportion, or a lesser proportion, of being threatened or injured with a weapon at school than adolescents in the 11th or 12th grades.

Alternative Hypothesis 1l. Adolescents in the 9th or 10th grades experience a greater proportion of being threatened or injured with a weapon at school than adolescents in the 11th or 12th grades.

A chi-square test of independence was performed to investigate differences in the proportions of being threatened or injured with a weapon at school between adolescents

in 9th or 10th grade (19 of 170 9th or 10th grade students, 11% of 9th or 10th grade students) and adolescents in the 11th or 12th grade (11 of 176 11th or 12th grade students, 6% of 11th or 12th grade students).

Null Hypothesis 1m. Adolescents in the 9th or 10th grades experience the same proportion, or a lesser proportion, of being a victim of partner violence than adolescents in the 11th or 12th grades.

Alternative Hypothesis 1m. Adolescents in the 9th or 10th grades experience a greater proportion of being a victim of partner violence than adolescents in the 11th or 12th grades.

A chi-square test of independence was performed to investigate differences in the proportions of being a victim of partner violence between adolescents in 9th or 10th grade (24 of 170 9th or 10th grade students, 14% of 9th or 10th grade students) and adolescents in the 11th or 12th grade (19 of 174 11th or 12th grade students, 11 of 11th or 12th grade students).

Specific Aim 2. Examine the mental health factors and delinquent and substance use and abuse behaviors associated with each type of adolescent victimization.

Research Hypothesis 2. Adolescents who have experienced each type of victimization are more likely to demonstrate adverse mental health, delinquent behaviors, and greater substance use and abuse than adolescents who have not; cyberbullying is more strongly associated with adverse mental health outcomes than traditional bullying; traditional bullying, being threatened or injured by a weapon and partner violence are more strongly associated with delinquent and substance use and abuse behaviors than cyberbullying.

A series of eight binary logistic regressions were performed to address the research hypothesis of Specific Aim 2. Each of the eight hypotheses included variable controls of *age* (in years), *gender* (dichotomous variable with the reference category of female), and *race/ethnicity* coded into four dummy variable groups of (a) White, (b) Hispanic, (c) Black/African American, and (d) Other. White was the reference category for *race/ethnicity*. The *race/ethnicity* groups were originally attempted in the logistic regression in eight variable classifications according to the ethnicity categories listed in Table 4. However, logistic regression results returned very large coefficients and associated standard errors when using the eight categories. It was determined that a possible reason for the inflated coefficients and standard errors could be a phenomena called "quasi-complete separation." Quasi-complete separation, which is defined when nearly all of the observations of a predictor variable have a probability of 1 of being allocated to the response group in the dependent variable. In the case of quasi-complete separation, the maximum likelihood estimates may not exist and the coefficients, odds ratio estimates, and standard errors can be very large (Agresti, 2002). The *race/ethnicity* classifications with few members were therefore aggregated into the "other" classification for analysis. Results for Specific Aim 2 are presented according to each statistical hypothesis.

Null Hypothesis 2a. None of the variables related to victimization, age, gender, or ethnicity will significantly predict the outcome of *recent gun or weapon carrying*.

Alternative Hypothesis 2a. At least one of the variables related to victimization, age, gender, or ethnicity will significantly predict the outcome of *recent gun or weapon carrying*.

A binary logistic regression was performed to address Hypothesis 2a. The dependent variable was *recent gun or weapon carrying*, which was coded as 1 = yes and 0 = no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 = yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable coded as 1 = yes, 0 = no); and (d) *victim of cyberbullying* (a dichotomous variable codes as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *race/ethnicity*. Of the 296 cases included in the model, 45 cases were classified as *recent gun or weapon carrying* and were coded as 1 = yes. Two hundred and fifty-one cases were classified as not *recent gun or weapon carrying* and were coded as 0 = no.

Null Hypothesis 2b. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent fighting*.

Alternative Hypothesis 2b. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent fighting*.

A binary logistic regression was performed to address Hypothesis 2b. The dependent variable was *recent fighting*, which was coded as 1 = yes and 0 = no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 = yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable coded as 1 = yes, 0 = no); and (d) *victim of*

cyberbullying (a dichotomous variable coded as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *race/ethnicity*. Of the 309 cases included in the model, 99 cases were classified as *recent fighting* and were coded as 1 = yes. Two hundred and ten cases were classified as not *recent fighting* and were coded as 0 = no.

Null Hypothesis 2c. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent alcohol use*.

Alternative Hypothesis 2c. At least one of the variables related to victimization, *age*, *gender*, *or ethnicity* will significantly predict the outcome of *recent alcohol use*.

A binary logistic regression was performed to address Hypothesis 2c. The dependent variable was *recent alcohol use*, which was coded as 1 = yes and 0= no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 = yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable codes as 1 = yes, 0 = no); and (d) *victim of cyberbullying* (a dichotomous variable codes as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *ethnicity*. Of the 283 cases included in the model, 106 cases were classified *as recent alcohol use* and were coded as 1 = yes. One hundred and seventy-seven cases were classified as *not recent alcohol use* and were coded as 0 = no.

Null Hypothesis 2d. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent marijuana use*.

Alternative Hypothesis 2d. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent marijuana use*.

A binary logistic regression was performed to address Hypothesis 2d. The dependent variable was *recent marijuana use*, which was coded as 1 = yes and 0 = no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 = yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable coded as 1 = yes, 0 = no); and (d) *victim of cyberbullying* (a dichotomous variable coded as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *race/ethnicity*. Of the 303 cases included in the model, 64 cases were classified as *recent marijuana use* and were coded as 1 = yes. Two hundred and thirty-nine cases were classified as *not recent marijuana* use and were coded as 0 = no.

Null Hypothesis 2e. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent drug use*.

Alternative Hypothesis 2e. At least one of the variables related to victimization, *age*, *gender*, or *ethnicity* will significantly predict the outcome of *recent drug use*.

A binary logistic regression was performed to address Hypothesis 2e. The dependent variable was *recent drug use*, which was coded as 1 = yes and 0 = no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the

categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 = yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable codes as 1 = yes, 0 = no); and (d) *victim of cyberbullying* (a dichotomous variable codes as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *race/ethnicity*. Of the 246 cases included in the model, 64 cases were classified as *recent drug use* and were coded as 1 = yes. One hundred and eighty-two cases were classified as not *recent drug use* and were coded as 0 = no.

Null Hypothesis 2f. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of being *sad/hopeless*.

Alternative Hypothesis 2f. At least one of the variables related to victimization, *age*, *gender*, or *ethnicity* will significantly predict the outcome of being *sad/hopeless*.

A binary logistic regression was performed to address Hypothesis 2f. The dependent variable was *sad/hopeless*, which was coded as 1 = yes and 0 = no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 = yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable codes as 1 = yes, 0 = no); and (d) *victim of cyberbullying* (a dichotomous variable codes as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *race/ethnicity*. Of the 306 cases included in the model, 90 cases were classified as *sad/hopeless* and were coded as 1 = yes. Two hundred and sixteen cases were classified as not *sad/hopeless* and were coded as 0 = no.

Null Hypothesis 2g. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *considered or planned suicide*.

Alternative Hypothesis 2g. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *considered or planned suicide*.

A binary logistic regression was performed to address Hypothesis 2g. The dependent variable was *considered or planned suicide*, which was coded as 1 = yes and 0 = no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 = yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable codes as 1 = yes, 0 = no); and (d) *victim of cyberbullying* (a dichotomous variable codes as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *race/ethnicity*. Of the 307 cases included in the model, 275 cases were classified as *considered or planned suicide* and were coded as 1 = yes. Thirty-two cases were classified as not *considered or planned suicide* and were coded as 0 = no.

Null Hypothesis 2h. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *actual suicide attempt*.

Alternative Hypothesis 2h. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *actual suicide attempt*.

A binary logistic regression was performed to address Hypothesis 2h. The dependent variable was *actual suicide attempt*, which was coded as 1 = yes and 0 = no. The independent variables included the four victimization variables of (a) *threatened or injured with a weapon at school* (an ordinal variable, classified according to the categories listed in Table 2, with the "no response" category not included in analysis); (b) *victim of partner violence* (a dichotomous variable coded as 1 =yes, 0 = no); (c) *victim of traditional bullying* (a dichotomous variable codes as 1 = yes, 0 = no); and (d) *victim of cyberbullying* (a dichotomous variable codes as 1 = yes, 0 = no). Independent variable controls included *age*, *gender*, and *race/ethnicity*. Of the 272 cases included in the model, 25 cases were classified as *actual suicide attempt* and were coded as 1 = Yes. Two hundred and forty-seven cases were classified as not *actual suicide attempt* and were coded as 0 = No.

Specific Aim 3. Determine if being subjected to cumulative victimization is associated with increased mental health factors and participation in a greater amount of delinquent and substance use and abuse behaviors.

Research Hypothesis 3. Being a victim of cumulative victimization is associated with a greater amount of mental health and delinquent and substance use and abuse behaviors.

Null Hypothesis 3a. None of the variables related to the number of victimization events, age, gender, or race/ethnicity will significantly predict the outcome of Number of mental health factors.

Alternative Hypothesis 3a. At least one of the variables related to the number of victimization events, age, gender, or race/ethnicity, will significantly predict the outcome of *number of mental health factors*.

Null Hypothesis 3b. None of the variables related to the number of victimization events, age, gender, or race/ethnicity will significantly predict the outcome of *number of delinquent and substance use and abuse behaviors*.

Alternative Hypothesis 3b. At least one of the variables related to the number of victimization events, age, gender, or race/ethnicity, will significantly predict the outcome of *number of delinquent and substance use and abuse behaviors*.

A series of Spearman's Rank Order Correlations were performed to investigate associations between three variables, which were constructed to represent (a) *cumulative victimization*, (b) *amount of mental health factors*, and (c) *amount of delinquent and substance use and abuse behaviors*. The *cumulative victimization* variable was constructed by summing values for each study case for the YRBS questions Q16, Q20, Q22, and Q23. The possible range of scores was 0 to 4, with higher values associated with a greater amount of cumulative victimization. The *amount of mental health factors* variable was constructed by summing values for each study case for the YRBS questions Q24, Q25, Q26, and Q27. The possible range of scores was 0 to 10, with higher values associated with a greater amount of mental health factors. The *amount of delinquent and substance use and abuse behaviors* variable was constructed by summing values for each study case for the YRBS questions Q11, Q12, Q13, Q14, Q17, Q19, Q40, Q42, Q46, Q48, Q50, Q51, Q53, Q54, Q55, Q57 and Q89. The possible range of scores was 0 to 85,

with higher values associated with a greater amount of delinquent and substance use and abuse behaviors.

CHAPTER 4: RESULTS

In Chapter 4, the results of the research are presented in a descriptive format as well as with tables. The results of Chapter 4 are divided into four sections: (a) population and sample demographic findings, (b) presentation of variables used for inferential analysis, (c) investigation of assumptions as relates to inferential analysis, and (d) tests of hypotheses. The chapter concludes with a summary of the results.

4.1 Population and Demographic Findings

A total of (N = 15,425) records were collected for the 2011 YRBS. Tables 5 through 8 present the frequency counts and percentages of the study variables collected from the 2011 YRBS. Table 5 presents frequency counts and percentages of the school students' responses to the demographic variables from the Youth Risk Behavior Survey (YBRS) survey for the entire population of adolescents surveyed (N = 15,425). The participants were approximately evenly distributed between the two genders, with 50% females (n = 7,708) and 49.6% males (n = 7,656). Most participants were between the ages 15 and 17 (n = 11,452). Of the entire sample, 40% were White (n = 6,171), 17.9% were Black (n = 2,767), 14.4% were Hispanic (n = 2,227), 15.5% were Multiple-Hispanic (n = 2,400), and 4.2% were Multiple-Non-Hispanic (n = 64). Table 6 presents frequency counts and percentages of all participants' responses to the variables related to victimization. Regarding these results, 13.4% of all participants (n = 2,066) had been electronically bullied during the previous 12 months, 17.1% (n =2,644) had been bullied

on school property during the previous 12 months, 7.6% (*n* = 1,168) had been threatened or injured by someone with a weapon on school property during the last 12 months, and 10.3% (*n* = 1,596) had been physically hurt by their partner during the previous 12 months.

Table 7 presents frequency counts and percentages of the mental health factor variables. These results reveal that 29.4% of all participants (*n* =15,425) had felt sad or hopeless almost every day for two weeks or more that they stopped doing usual activities, 15.7% (*n* = 2,424) had seriously considered attempting suicide, 13.1% (*n* = 2,015) had made a plan about how they would attempt suicide, and 4.1% (*n* = 633) had made at least one suicide attempt during the previous 12 months.

Table 8 presents frequency counts and percentages of the delinquent behavior and substance use and abuse variables. Regarding these results, 8.2% (*n* = 1,252) of all participants had driven a car or other vehicle one time or more while they had been drinking alcohol; 35.5% (*n* = 5,441) had at least one drink of alcohol on one or more days during the previous 30 days; 65.2% (*n* = 10,060) had at least one drink of alcohol on one or more days during their life; 22.9% (*n* = 3,985) had used marijuana one time or more during the previous 30 days; 40.5% (*n* = 6,222) had used marijuana one time or more during their life; 3.1% (*n* = 471) had used a form of cocaine, including powder, crack, or freebase one time or more during the previous 30 days; 7% (*n* = 1,083) had used a form of cocaine one time or more during their life; 2.7% (*n* = 409) had used heroin one time or more during their life; 3.7% (*n* = 568) had used methamphetamines one time or more during their life, 1,228 participants (7.9% of all participants) used ecstasy one time or more during their life; 6% (*n* = 940) had used hallucinogenic drugs one time or more

during their life; 17.9% (*n* = 2,766) had taken a prescription drug without a doctor's prescription.; 15.9% (*n* = 2,454) had carried a weapon such as a gun, knife, or club on one or more days during the previous 30 days; 4.9% (*n* = 766) had carried a weapon onto school property on one or more days during the previous 30 days; 32.6% (*n* = 5,018) had been in a physical fight one time or more in the previous 12 months; and 12.2% (*n* = 1,863 had been in a physical fight one time or more on school property during the previous 12 months.

Table 5: Frequencies and percentages of demographic variables (N = 15,425)

Variable	Frequency	Percent
Gender		
Female	7,708	50.0
Male	7,656	49.6
No response	61	0.40
Age		
12 years or younger	44	0.30
13 years old	24	0.20
14 years old	1,561	10.1
15 years old	3,470	22.5
16 years old	4,061	26.3
17 years old	3,921	25.4
18 years or older	2,282	14.8
No response	62	0.40
Grade		
9th Grade	3,774	24.5
10th Grade	3,693	23.9
11th Grade	4,133	26.8
12th Grade	3,699	24.0
Ungraded or other grade	27	0.20
No Response	99	0.60
Race/Ethnicity		
Am Indian / Alaska Native	293	1.90
Asian	476	3.10
Black or African American	2,767	17.9
Native Hawaiian/other PI	125	0.80
White	6,171	40.0
Hispanic / Latino	2,227	14.4
Multiple - Hispanic	2,400	15.6
Multiple - Non-Hispanic	651	4.20
No response	315	2.00

Table 6: Frequencies and percentages of victimization variables (N = 15,425)		
Variable	Frequency	Percent
During the past 12 months, have you ever been electronically bullied? (Include being bullied through e-mail, chat rooms, instant messaging, websites, or texting.)		
Yes	2,066	13.4
No	11,811	76.6
No response	1,548	10.0
During the past 12 months, have you ever been bullied on school property?		
Yes	2,644	17.1
No	12,051	78.1
No response	730	4.7
During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?		
0 times	14,176	91.9
1 time	470	3.0
2 or 3 times	318	2.1
4 or 5 times	113	0.7
6 or 7 times	60	0.4
8 or 9 times	39	0.3
10 or 11 times	14	0.1
12 or more times	154	1.0
No response	81	0.5
During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?		
Yes	1,596	10.3
No	13,674	88.6
No response	155	1.0

Table 7: Frequencies and percentages of mental health factors variables of study (N = 15,425)

Variable	Frequency	Percent
During the past 12 months, did you ever feel so sad or hopeless almost every day for two week or more in a row that you stopped doing some usual activities?		
Yes	4,537	29.4
No	10,732	69.6
No response	156	1.0
During the past 12 months, did you ever seriously consider attempting suicide?		
Yes	2,424	15.7
No	12,869	83.4
No response	132	0.9
During the past 12 months, did you make a plan about how you would attempt suicide?		
Yes	2,015	13.1
No	13,263	86.0
No response	147	1.0
During the past 12 months, how many times did you actually attempt suicide?		
0 times	12,335	80.0
1 time	633	4.1
2 or 3 times	335	2.2
4 or 5 times	76	0.5
6 or more times	135	0.9
No response	1,911	12.4

Table 8: Frequencies and percentages of delinquent behavior and substance use and abuse variables of study (N = 15,425)

Variable	Frequency	Percent
During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol?		
0 times	13,838	89.7
1 time	537	3.5
2 or 3 times	394	2.6
4 or 5 times	109	0.7
6 or more	212	1.4
No response	335	2.2
During your life, on how many days have you had at least one drink of alcohol?		
0 days	4,108	26.6
1 or 2 days	2,536	16.4
3 to 9 days	2,487	16.1
10 to 19 days	1,504	9.8
20 to 39 days	1,299	8.4
40 to 99 days	1,003	6.5
100 or more days	1,231	8.0
No response	1,257	8.1
During the past 30 days, on how many days did you have at least one drink of alcohol?		
0 days	8,502	55.1
1 or 2 days	2,731	17.7
3 to 5 days	1,292	8.4
6 to 9 days	740	4.8
10 to 19 days	432	2.8
20 to 29 days	105	0.7
All 30 days	141	0.9
No response	1,482	9.6
During your life, how many times have you used marijuana?		
0 times	8,703	56.4
1 or 2 times	1,235	8.0
3 to 9 times	1,245	8.1
10 to 19 times	718	4.7

Table 8: (continued)

During your life, how many times have you used marijuana? (continued)		
20 to 39 times	702	4.6
40 to 99 times	692	4.5
100 or more times	1,630	10.6
No response	500	3.2
During the past 30 days, how many times did you use marijuana?		
0 times	11,440	74.4
1 or 2 times	1,124	7.3
3 to 9 times	810	5.3
10 to 19 times	531	3.4
20 to 39 times	365	2.4
40 or more times	700	4.5
No response	455	2.9
During your life, how many times have you used any form of cocaine, including powder, crack or freebase?		
0 times	14,055	91.1
1 or 2 times	506	3.3
3 to 9 times	237	1.5
10 to 19 times	104	0.7
20 to 39 times	69	0.4
40 or more times	167	1.1
No response	287	1.9
During the past 30 days, how many times have you used any form of cocaine, including powder, crack or freebase?		
0 times	13,964	90.5
1 or 2 times	226	1.5
3 to 9 times	77	0.5
10 to 19 times	48	0.3
20 to 39 times	15	0.1
40 or more times	105	0.7
No response	990	6.4

Table 8: (continued)

During your life, how many times have you used heroin (also called smack, junk, or China White)?		
0 times	13,660	88.6
1 or 2 times	141	0.9
3 to 9 times	62	0.4
10 to 19 times	55	0.4
20 to 39 times	34	0.2
40 or more times	117	0.8
No response	1,356	8.8
During your life, how many times have you used methamphetamines (also called speed, crystal, crank, or ice)?		
0 times	14,365	93.1
1 or 2 times	229	1.5
3 to 9 times	95	0.6
10 to 19 times	60	0.4
20 to 39 times	39	0.3
40 or more times	145	0.9
No response	492	3.2
During your life, how many times have you used ecstasy (also called MDMA)?		
0 times	13,042	84.6
1 or 2 times	516	3.3
3 to 9 times	308	2.0
10 to 19 times	146	0.9
20 to 39 times	72	0.5
40 or more times	186	1.2
No response	1,155	7.5

Table 8: (continued)

During your life, how many times have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription?		
0 times	11,245	72.9
1 or 2 times	996	6.5
3 to 9 times	712	4.6
10 to 19 times	385	2.5
20 to 39 times	220	1.4
40 or more times	453	2.9
No response	1,414	9.2
During your life, how many times have you used hallucinogenic drugs, such as LSD, acid, PCP, angel dust, mescaline, or mushrooms?		
0 times	10,490	68.0
1 or 2 times	467	3.0
3 to 9 times	197	1.3
10 to 19 times	84	0.5
20 to 39 times	52	0.3
40 or more times	140	0.9
No response	3,995	25.9
During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?		
0 days	21,570	81.5
1 day	544	3.5
2 or 3 days	579	3.8
4 or 5 days	246	1.6
6 or more days	1,085	7.0
No response	401	2.6

Table 8: (continued)

During the past 30 days, on how many days did you carry a gun?		
0 days	13,747	89.1
1 day	242	1.6
2 or 3 days	203	1.3
4 or 5 days	63	0.4
6 or more days	252	1.6
No response	918	6.0
During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?		
0 days	14,160	91.8
1 day	220	1.4
2 or 3 days	155	1.0
4 or 5 days	66	0.4
6 or more days	325	2.1
No response	499	3.2
During the past 12 months, how many times were you in a physical fight?		
0 times	10,079	65.3
1 time	2,051	13.3
2 or 3 times	1,667	10.9
4 or 5 times	462	3.0
6 or 7 times	236	1.5
8 or 9 times	101	0.7
10 or 11 times	81	0.5
12 or more times	420	2.7
No response	319	2.1

Table 8: (continued)

During the past 12 months, how many times were you in a physical fight on school property?		
0 times	13,319	86.3
1 time	1,140	7.4
2 or 3 times	441	2.9
4 or 5 times	93	0.6
6 or 7 times	50	0.3
8 or 9 times	19	0.1
10 or 11 times	10	0.1
12 or more times	110	0.7
No response	243	1.6

Table 9 presents frequency counts and percentages of the random sample's participants' responses to the demographic variables from the Youth Risk Behavior Survey (YBRS) survey for the random sample (n = 350). The characteristics of the random sample were very similar to those of the total population: participants were approximately evenly distributed between the two genders, as 49.1% were females (n = 172) and 50.6% were males (n = 177 males); 26% (n = 91) were 15 years old, 27.5% (n = 96) were 16 years old, and 24.9% (n = 87) were 17 years old; 36% (n = 126) were White, 21.4% (n = 75) were Black, 14.9% (n = 52) were Hispanic, 18% were Multiple-Hispanic (n = 63), and 2% were Multiple-Non-Hispanic (n = 7).

Table 10 presents frequency counts and percentages of the random sample's participants' responses to the variables related to victimization. Among the results, 11.7% of sample participants (n = 41) participants had been electronically bullied during the previous 12 months; 17.1% (n = 60) had been bullied on school property during the previous 12 months; 9% (n = 31) had been threatened or injured by someone with a weapon on school property during the previous 12 months; 12.3% (n = 43) had been physically hurt by their partner during the previous 12 months.

Table 11 presents frequency counts and percentages of the random sample's participants' responses to the variables related to mental health factors. Results show that 29.4% (n = 103) had felt sad or hopeless almost every day for two weeks or more that they stopped doing usual activities; 16.6% (n = 58) had seriously considered attempting suicide during the previous 12 months; 14.9% (n = 52) had made a plan about how they would attempt suicide; and 5.7% (n = 20) had actually attempted suicide one time or more during the previous 12 months.

Table 12 presents frequency counts and percentages of the random sample's participants' responses to the variables related to delinquent behavior and substance use and abuse variables. Among the results, 4.9% (*n* = 17) had driven a car or other vehicle one time or more while they had been drinking alcohol; 33.3% (*n* = 116) had at least one drink of alcohol on one or more days during the previous 30 days; 67.7% (*n* = 237) had at least one drink of alcohol on one or more days during their life; 19.6% (*n* = 69) had used marijuana one time or more during the past 30 days; 36.5% (*n* = 128) had used marijuana one time or more during their life; 4.1% (*n* = 14) had used a form of cocaine, including powder, crack, or freebase one time or more during the previous 30 days; 7.1% (*n* = 25) had used heroin one time or more during their life; 3.8% (*n* = 13) had used methamphetamines one time or more during their life; 6.9% (*n* = 24) had used ecstasy one time or more during their life; 6.2% (*n* = 22) had used hallucinogenic drugs one time or more during their life; 19.7% (*n* = 69) had taken a prescription drug without a doctor's prescription; 4.2% (*n* = 50) had carried a weapon such as a gun, knife, or club on one or more days during the previous 30 days; 3.5% (*n* = 12) had carried a weapon onto school property on one or more days during the previous 30 days; 30.5% (*n* = 107) had been in a physical fight one time or more in the previous 12 months; 13.8% (*n* = 48) had been in a physical fight one time or more on school property during the past 12 months.

Table 9: Frequencies and percentages of demographic variables of study for the sample group (n = 350)

Variable	Frequency	Percent
Gender		
Female	172	49.1
Male	177	50.6
No response	1	0.3
Age		
12 years old or younger	---	---
13 years old	4	1.1
14 years old	29	8.1
15 years old	91	26.0
16 years old	96	27.5
17 years old	87	24.9
18 years or older	42	12.0
No Response	1	0.3
Grade		
9th Grade	96	27.4
10th Grade	75	21.4
11th Grade	100	28.6
12th Grade	76	21.7
No Response	3	0.9
Race/Ethnicity		
Am Indian / Alaska Native	10	2.9
Asian	11	3.1
Black or African American	75	21.4
Native Hawaiian/other PI	2	0.6
White	126	36.0
Hispanic / Latino	52	14.9
Multiple - Hispanic	63	18.0
Multiple - Non-Hispanic	7	2.0
No Response	4	1.1

Table 10: Frequencies and percentages of victimization variables of study for the sample group (n = 350)

Variable	Frequency	Percent
During the past 12 months, have you ever been electronically bullied? (Include being bullied through e-mail, chat rooms, instant messaging, Web sites, or texting.)		
Yes	41	11.7
No	275	78.6
No response	34	9.7
During the past 12 months, have you ever been bullied on school property?		
Yes	60	17.1
No	275	78.6
No response	15	4.3
During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?		
0 times	318	90.9
1 time	16	4.6
2 or 3 times	8	2.3
4 or 5 times	2	0.6
6 or 7 times	1	0.3
8 or 9 times	2	0.6
10 or 11 times	---	---
12 or more times	2	0.6
No response	1	0.3
During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?		
Yes	43	12.3
No	304	86.9
No response	3	0.9

Table 11: Frequencies and percentages of mental health factors variables of study for the sample group (n = 350)

Variable	Frequency	Percent
During the past 12 months, did you ever feel so sad or hopeless almost every day for two week or more in a row that you stopped doing some usual activities?		
Yes	103	29.4
No	242	69.1
No response	5	1.4
During the past 12 months, did you ever seriously consider attempting suicide?		
Yes	58	16.6
No	289	82.6
No response	3	0.9
During the past 12 months, did you make a plan about how you would attempt suicide?		
Yes	52	14.9
No	296	84.6
No response	2	0.6
During the past 12 months, how many times did you actually attempt suicide?		
0 times	278	79.4
1 time	20	5.7
2 or 3 times	5	1.4
4 or 5 times	2	0.6
6 or more times	2	0.6
No response	43	12.3

Table 12: Frequencies and percentages of delinquent behavior and substance use and abuse variables of study for the sample group (n = 350)

Variable	Frequency	Percent
During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol?		
0 times	325	92.9
1 time	8	2.3
2 or 3 times	5	1.4
4 or 5 times	2	0.6
6 or more	2	0.6
No response	8	2.3
During your life, on how many days have you had at least one drink of alcohol?		
0 days	89	25.4
1 or 2 days	72	20.6
3 to 9 days	54	15.4
10 to 19 days	37	10.6
20 to 39 days	33	9.4
40 to 99 days	21	6.0
100 or more days	20	5.7
No response	24	6.9
During the past 30 days, on how many days did you have at least one drink of alcohol?		
0 days	202	57.7
1 or 2 days	52	14.9
3 to 5 days	35	10.0
6 to 9 days	17	4.9
10 to 19 days	6	1.7
20 to 29 days	3	0.9
All 30 days	3	0.9
No response	32	9.1
During your life, how many times have you used marijuana?		
0 times	215	61.4
1 or 2 times	26	7.4
3 to 9 times	25	7.1
10 to 19 times	13	3.7

Table 12: (continued)

During your life, how many times have you used marijuana? (continued)		
20 to 39 times	15	4.3
40 to 99 times	21	6.0
100 or more times	28	8.0
No response	7	2.0
During the past 30 days, how many times did you use marijuana?		
0 times	274	78.3
1 or 2 times	19	5.4
3 to 9 times	16	4.6
10 to 19 times	11	3.1
20 to 39 times	11	3.1
40 or more times	12	3.4
No response	7	2.0
During your life, how many times have you used any form of cocaine, including powder, crack or freebase?		
0 times	321	91.7
1 or 2 times	11	3.1
3 to 9 times	6	1.7
10 to 19 times	1	0.3
20 to 39 times	---	---
40 or more times	7	2.0
No response	4	1.1
During the past 30 days, how many times have you used any form of cocaine, including powder, crack or freebase?		
0 times	317	90.6
1 or 2 times	9	2.6
3 to 9 times	1	0.3
10 to 19 times	1	0.3
20 to 39 times	---	---
40 or more times	3	0.9
No response	19	5.4

Table 12: (continued)

During your life, how many times have you used heroin (also called smack, junk, or China White)?		
0 times	316	90.3
1 or 2 times	4	1.1
3 to 9 times	---	---
10 to 19 times	---	---
20 to 39 times	---	---
40 or more times	3	0.9
No response	27	7.7
During your life, how many times have you used methamphetamines (also called speed, crystal, crank, or ice)?		
0 times	331	94.6
1 or 2 times	3	0.9
3 to 9 times	5	1.4
10 to 19 times	3	0.9
20 to 39 times	---	---
40 or more times	2	0.6
No response	6	1.7
During your life, how many times have you used ecstasy (also called MDMA)?		
0 times	309	88.3
1 or 2 times	10	2.9
3 to 9 times	6	1.7
10 to 19 times	4	1.1
20 to 39 times	1	0.3
40 or more times	3	0.9
No response	17	4.9

Table 12: (continued)

During your life, how many times have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription?		
0 times	251	71.7
1 or 2 times	30	8.6
3 to 9 times	18	5.1
10 to 19 times	8	2.3
20 to 39 times	6	1.7
40 or more times	7	2.0
No response	30	8.6
During your life, how many times have you used hallucinogenic drugs, such as LSD, acid, PCP, angel dust, mescaline, or mushrooms?		
0 times	234	66.9
1 or 2 times	12	3.4
3 to 9 times	4	1.1
10 to 19 times	4	1.1
20 to 39 times	---	---
40 or more times	2	0.6
No response	94	26.9
During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?		
0 days	295	84.3
1 day	14	4.0
2 or 3 days	11	3.1
4 or 5 days	4	1.1
6 or more days	21	6.0
No response	5	1.4

Table 12: (continued)

During the past 30 days, on how many days did you carry a gun?		
0 days	313	89.4
1 day	10	2.9
2 or 3 days	6	1.7
4 or 5 days	1	0.3
6 or more days	6	1.7
No response	14	4.0
During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?		
0 days	330	94.3
1 day	2	0.6
2 or 3 days	---	---
4 or 5 days	1	0.3
6 or more days	9	2.6
No response	8	2.3
During the past 12 months, how many times were you in a physical fight?		
0 times	242	69.1
1 time	42	12.0
2 or 3 times	34	9.7
4 or 5 times	12	3.4
6 or 7 times	5	1.4
8 or 9 times	5	1.4
10 or 11 times	2	0.6
12 or more times	7	2.0
No response	1	0.3

Table 12: (continued)

During the past 12 months, how many times were you in a physical fight on school property?		
0 times	301	86.0
1 time	30	8.6
2 or 3 times	13	3.7
4 or 5 times	1	0.3
6 or 7 times	3	0.9
8 or 9 times	---	---
10 or 11 times	---	---
12 or more times	1	0.3
No response	1	0.3

4.2 Hypothesis Testing Results

Inferential analyses for hypothesis testing included a series of McNemar's Tests for paired proportions or chi-square tests of independence for independent proportions (Hypothesis 1), binary logistic regressions (Hypothesis 2), and ordinal regressions (Hypothesis 3). Results of the inferential analyses are reported according to the specific aim and hypothesis tested.

Specific Aim 1. Examine the demographics and background characteristics (i.e., gender, race, ethnicity, age, grade level) associated with various issues of mental health, delinquent and substance use and abuse behaviors, and four types of adolescent victimization: being threatened or injured by a weapon, partner violence, traditional bullying, and cyberbullying.

Research Hypothesis 1. Adolescents are more likely to experience cyberbullying than individual traditional bullying, being threatened or injured by a weapon or partner violence; females are more likely to be victims of cyberbullying and partner violence than males; males are more likely to be victims of traditional bullying and being threatened or injured by a weapon; racial and ethnic minorities are more likely to be victims of traditional bullying and being threatened or injured by a weapon and White adolescents are more likely to be victims of cyberbullying; adolescent victimization is more likely to occur during grades 9 and 10 than 11 and 12.

Frequency counts and percentages of the variables of study are presented in Tables 5 through 12. A series of McNemar's Tests were performed to address hypotheses specific to the associations listed in Hypothesis 1. McNemar's Test is similar to a chi-square test of independence, but does not require the assumption of

independence, i.e. the test allows for an individual to be classified into more than one group. A total of 13 statistical hypotheses were tested. Results are presented according to each of the 13 hypotheses. Following the presentation of the findings, Table 13 presents a summary of the results for the 13 McNemar's Tests.

Null Hypothesis 1a. Adolescents experience the same proportion, or a lesser proportion, of cyberbullying than individual traditional bullying.

Alternative Hypothesis 1a. Adolescents experience a significantly greater proportion of cyberbullying than individual traditional bullying.

Results were statistically significant [χ^2 (1) = 4.17; p = .021, one-tailed test], indicating a difference in the proportions of cyberbullying and traditional bullying for the adolescents. However, the proportion of traditional bullying was greater than the proportion of cyberbullying.

Conclusion as relates to Hypothesis 1a. Do not reject Null Hypothesis 1a. There is not sufficient evidence to indicate that adolescents experience a significantly greater proportion of cyberbullying than individual traditional bullying.

Null Hypothesis 1b. Adolescents experience the same proportion, or a lesser proportion, of cyberbullying than being threatened or injured by a weapon at school.

Alternative Hypothesis 1b. Adolescents experience a significantly greater proportion of cyberbullying than being threatened or injured by a weapon at school.

Results were not statistically significant [χ^2 (1) = 2.44; p = .059, one-tailed test], indicating there was not a difference in the proportions of cyberbullying and being threatened or injured by a weapon at school for the adolescents.

Conclusion as relates to Hypothesis 1b. Do not reject Null Hypothesis 1b. There is not sufficient evidence to indicate that adolescents experience a significantly greater proportion of cyberbullying than being threatened or injured by a weapon at school.

Null Hypothesis 1c. Females experience the same proportion, or a lesser proportion, of cyberbullying than males.

Alternative Hypothesis 1c. Females experience a significantly greater proportion of cyberbullying than males.

Results were not statistically significant [χ^2 (1) = 0.67; p = .208, one-sided test].

Conclusion as relates to Hypothesis 1c. Do not reject Null Hypothesis 1c. There is not sufficient evidence to indicate that females experience a significantly greater proportion of cyberbullying than males.

Null Hypothesis 1d. Females experience the same proportion, or a lesser proportion, of partner violence than males.

Alternative Hypothesis 1d. Females experience a significantly greater proportion of partner violence than males.

Results were not statistically significant [χ^2 (1) = 0.04; p = .420, one-sided test].

Conclusion as relates to Null Hypothesis 1d. Do not reject Null Hypothesis 1d. There is not sufficient evidence to indicate that females experience a significantly greater proportion of partner violence than males.

Null Hypothesis 1e. Males experience the same proportion, or a lesser proportion, of traditional bullying than females.

Alternative Hypothesis 1e. Males experience a significantly greater proportion of traditional bullying than females.

Results were not statistically significant [χ^2 (1) = 0.92; p = .169, one-sided test].

Conclusion as relates to Null Hypothesis 1e. Do not reject Null Hypothesis 1e. There is not sufficient evidence to indicate that males experience a significantly greater proportion of traditional bullying than females.

Null Hypothesis 1f. Males experience the same proportion, or a lesser proportion, of being threatened or injured with a weapon at school than females.

Alternative Hypothesis 1f. Males experience a significantly greater proportion of being threatened or injured with a weapon at school than females.

Results were not statistically significant [χ^2 (1) = 0.76; p = .191, one-sided test].

Conclusion as relates to Null Hypothesis 1f. Do not reject Null Hypothesis 1f. There is not sufficient evidence to indicate that males experience a significantly greater proportion of being threatened or injured with a weapon at school than females.

Null Hypothesis 1g. Racial and ethnic minority adolescents experience the same proportion, or a lesser proportion, of traditional bullying than White adolescents.

Alternative Hypothesis 1g. Racial and ethnic minority adolescents experience a significantly greater proportion of traditional bullying than White adolescents.

Results were statistically significant [χ^2 (1) = 3.52; p = .030, one-sided test]. However, the results indicated that a significantly greater number of White students were subjected to traditional bullying than expected (28% observed, 21.7% expected), while fewer racial and ethnic minority adolescents were subjected to traditional bullying than expected (32% observed, 38.3% expected).

Conclusion as relates to Null Hypothesis 1g. Do not reject Null Hypothesis 1g. There is not sufficient evidence to indicate that racial and ethnic minority adolescents

experience a significantly greater proportion of traditional bullying than White adolescents.

Null Hypothesis 1h. Racial and ethnic minority adolescents experience the same proportion, or a lesser proportion, of being threatened or injured with a weapon at school than White adolescents.

Alternative Hypothesis 1h. Racial and ethnic minority adolescents experience a significantly greater proportion of being threatened or injured with a weapon at school than White adolescents.

Results were not statistically significant [χ^2 (1) =0.002; p = .484, one-sided test].

Conclusion as relates to Null Hypothesis 1h. Do not reject Null Hypothesis 1h. There is not sufficient evidence to indicate that racial and ethnic minority adolescents experience a significantly greater proportion of being threatened or injured with a weapon at school than White adolescents.

Null Hypothesis 1i. White adolescents experience the same proportion, or a lesser proportion, of cyberbullying than racial or ethnic minority adolescents.

Alternative Hypothesis 1i. White adolescents experience a significantly greater proportion of cyberbullying than racial or ethnic minority adolescents.

Results were statistically significant [χ^2 (1) = 4.69; p = .015, one-sided test]. The results indicated that a significantly greater number of White students were subjected to cyberbullying than expected (21% observed, 14.8% expected), while fewer racial and ethnic minority adolescents were subjected to cyberbullying than expected (20% observed, 26.2% expected).

Conclusion as relates to Null Hypothesis 1i. Reject Null Hypothesis 1i. There is sufficient evidence to indicate that White adolescents experience a significantly greater proportion of cyberbullying than racial or ethnic minority adolescents.

Null Hypothesis 1j. Adolescents in the 9th or 10th grades experience the same proportion, or a lesser proportion, of cyberbullying than adolescents in the 11th or 12th grades.

Alternative Hypothesis 1j. Adolescents in the 9th or 10th grades experience a greater proportion of cyberbullying than adolescents in the 11th or 12th grades.

Results were not statistically significant [χ^2 (1) = 0.12; p = .364, one-sided test].

Conclusion as relates to Null Hypothesis 1j. Do not reject Null Hypothesis 1j. There is not sufficient evidence to indicate that adolescents in the 9th or 10th grades experience a greater proportion of cyberbullying than adolescents in the 11th or 12th grades.

Null Hypothesis 1k. Adolescents in the 9th or 10th grades experience the same proportion, or a lesser proportion, of traditional bullying than adolescents in the 11th or 12th grades.

Alternative Hypothesis 1k. Adolescents in the 9th or 10th grades experience a greater proportion of traditional bullying than adolescents in the 11th or 12th grades.

Results were statistically significant [χ^2 (1) = 6.73; p = .005, one-sided test], and indicated a greater number of 9th or 10th grade students experienced traditional bullying than expected (38% observed, 29% expected) and a lesser number of 11th or 12th grade students experienced traditional bullying than expected (21% observed, 30% expected).

Conclusion as relates to Null Hypothesis 1k. Reject Null Hypothesis 1k. There is sufficient evidence to indicate that adolescents in the 9th or 10th grades experience a greater proportion of traditional bullying than adolescents in the 11th or 12th grades.

Null Hypothesis 1l. Adolescents in the 9th or 10th grades experience the same proportion, or a lesser proportion, of being threatened or injured with a weapon at school than adolescents in the 11th or 12th grades.

Alternative Hypothesis 1l. Adolescents in the 9th or 10th grades experience a greater proportion of being threatened or injured with a weapon at school than adolescents in the 11th or 12th grades.

Results were not statistically significant [χ^2 (1) = 2.65; p = .052, one-sided test].

Conclusion as relates to Null Hypothesis 1l. Do not reject Null Hypothesis 1l. There is not sufficient evidence to indicate that adolescents in the 9th or 10th grades experience a greater proportion of being threatened or injured with a weapon at school than adolescents in the 11th or 12th grades.

Null Hypothesis1m. Adolescents in the 9th or 10th grades experience the same proportion, or a lesser proportion, of being a victim of partner violence than adolescents in the 11th or 12th grades.

Alternative Hypothesis1m. Adolescents in the 9th or 10th grades experience a greater proportion of being a victim of partner violence than adolescents in the 11th or 12th grades.

Results were not statistically significant [χ^2 (1) = 0.80; p = .185, one-sided test].

Conclusion as relates to Null Hypothesis 1m. Do not reject Null Hypothesis 1m. There is not sufficient evidence to indicate that adolescents in the 9th or 10th grades

experience a greater proportion of being a victim of partner violence than adolescents in the 11^{th} or 12^{th} grades.

Table 13: Summary of inferential analysis findings for specific aim 1 regarding the research hypothesis

	Research (Alternative) Hypothesis	Test	χ^2	*p*-value	Supported?
1a.	Adolescents experience a significantly greater proportion of cyberbullying than individual traditional bullying.	McNemar's Test	4.17	.021	No
1b.	Adolescents experience a significantly greater proportion of cyberbullying than being threatened or injured by a weapon at school.	McNemar's Test	2.44	.059	No
1c.	Females experience a significantly greater proportion of cyberbullying than males.	Chi-square test of independence	.208	.208	No
1d.	Females experience a significantly greater proportion of partner violence than males.	Chi-square test of independence	0.04	.420	No
1e.	Males experience a significantly greater proportion of traditional bullying than females.	Chi-square test of independence	0.92	.169	No
1f.	Males experience a significantly greater proportion of being threatened or injured with a weapon at school than females.	Chi-square test of independence	0.76	.191	No

Table 13: (continued)

1g.	Racial and ethnic minority adolescents experience a significantly greater proportion of traditional bullying than White adolescents.			
		Chi-square test of independence	3.52	.030	No
1h.	Racial and ethnic minority adolescents experience a significantly greater proportion of being threatened or injured with a weapon at school than White adolescents.			
		Chi-square test of independence	0.002	.484	No
1i.	White adolescents experience a significantly greater proportion of cyberbullying than racial or ethnic minority adolescents.			
		Chi-square test of independence	4.69	.015	Yes
1j.	Adolescents in the 9th or 10th grades experience a greater proportion of cyberbullying than adolescents in the 11th or 12th grades.			
		Chi-square test of independence	0.12	.364	No
1k.	Adolescents in the 9th or 10th grades experience a greater proportion of traditional bullying than adolescents in the 11th or 12th grades.			
		Chi-square test of independence	6.73	.005	Yes
1l.	Adolescents in the 9th or 10th grades experience a greater proportion of being threatened or injured with a weapon at school than adolescents in the 11th or 12th grades.			
		Chi-square test of independence	2.65	.052	No

Table 13: (continued)

1m. Adolescents in the 9th or 10th grades experience a greater proportion of being a victim of partner violence than adolescents in the 11th or 12th grades.				
	Chi-square test of independence	0.80	.185	No

Specific Aim 2. Examine the mental health factors and delinquent and substance use and abuse behaviors associated with each type of adolescent victimization.

Research Hypothesis 2. Adolescents who have experienced each type of victimization are more likely to demonstrate adverse mental health and delinquent behaviors than adolescents who have not; cyberbullying is more strongly associated with adverse mental health outcomes than traditional bullying; traditional bullying, being threatened or injured by a weapon, and partner violence are more strongly associated with delinquent and substance use and abuse behaviors than cyberbullying.

Null Hypothesis 2a. None of the variables related to victimization, *age*, *gender*, or race/*ethnicity* will significantly predict the outcome of *recent gun carrying or recent weapon carrying*.

Alternative Hypothesis 2a. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent gun carrying or recent weapon carrying*. Table 14 presents the findings of the logistic regression analysis.

The Omnibus Tests of Model Coefficients gives an indication of how well the model performs over and above results that would be obtained for a model with no

predictors entered (an intercept only model). The test was statistically significant [χ^2 (9) = 51.88, p = <.0005], indicating that the predictors, as a set, reliably differentiated between those classified as *recent gun or weapon carrying* and those who were not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test [χ^2 (8) = 6.93, p = .544]. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .161) and Nagelkerke R-Square (R^2 = .280). These two tests indicated that between 16% and 28% of the variability in the dependent variable was explained by the predictors of the model. Percentage accuracy in classification (PAC) of the correct outcome category of *recent gun or weapon carrying* for the 10 predictor model was 86.8%, a slight improvement over the base model constant only (no predictors) percentage correct of 84.8%.

Wald statistics indicated that two of the predictors contributed significantly to the model. *Gender* was significant (OR = 9.70, 95% CI OR = [3.71, 25.33]; p = <.0005). The odds ratio for the *gender* variable indicated that the odds of a male recently carrying a gun or weapon were approximately 10 times the odds of a female recently carrying a gun or weapon. The predictor of *threatened or injured with a weapon at school* was also statistically significant (OR = 2.14, 95% CI OR = [1.28, 3.55]; p = .004). For every ordinal level increase in the *threatened or injured with a weapon at school* variable, the odds of an adolescent carrying a gun or weapon increased approximately 2 times.

Conclusion as relates to Null Hypothesis 2a. Reject Null Hypothesis 2a. There is sufficient evidence to indicate that at least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* significantly predicts the outcome of *recent gun carrying or recent weapon carrying*.

Table 14: Logistic regression analysis of *recent gun or weapon carrying* outcome as a function of victimization and control variables (n = 26)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	0.757	0.261	8.430	.004	2.132	1.279	3.554
Victim of partner violence	0.721	0.563	1.637	.201	2.056	0.682	6.200
Victim of traditional (face-to-face) bullying	0.489	0.478	0.963	.326	1.599	0.626	4.082
Victim of cyberbullying	-0.236	0.620	0.145	.703	0.789	0.234	2.663
Age	0.090	0.165	0.296	.586	1.094	0.792	1.510
Gender = Male	2.272	0.490	21.519	<.0005	9.699	3.714	25.330
Race = Hispanic	0.152	0.422	0.130	.718	1.164	0.509	2.661
Race = Black/African American	-0.324	0.524	0.382	.537	0.723	0.259	2.020
Race = Other	-1.025	0.899	1.300	.254	0.359	0.062	2.090
Constant	-4.775	1.036	21.253	---	---	---	---

Null Hypothesis 2b. None of the variables related to victimization, *age*, *gender*, or *ethnicity* will significantly predict the outcome of *recent fighting*.

Alternative Hypothesis 2b. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent fighting*. Table 15 presents the findings of the logistic regression analysis.

The Omnibus Tests of Model Coefficients give an indication of how well the model performs over and above results that would be obtained for a model with no predictors entered (an intercept only model). The test was statistically significant [χ^2 (9) = 56.54, p = <.0005], indicating that the predictors, as a set, reliably differentiated between those classified as *recent fighting* and those who were not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test [χ^2 (8) = 14.71, p = .065]. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .167) and Nagelkerke R-Square (R^2 = .234). These two tests indicated that between 17% and 23% of the variability in the dependent variable was explained by the predictors of the model. PAC of the correct outcome category of *recent fighting* for the 10 predictor model was 72.5 %, an improvement over the base model of constant only (no predictors) percentage correct of 68.0%.

Wald statistics indicated that five of the predictors contributed significantly to the model. *Gender* was significant (OR = 4.19, 95% CI OR = [2.40, 7.32)] p = <.0005). The odds ratio for the gender variable indicated that the odds of a male recently fighting were approximately 4 times the odds of a female recently fighting. The predictor of

threatened or injured with a weapon at school was statistically significant (OR = 1.86, 95% CI OR = [1.29, 3.08]; $p = .015$). For every ordinal level that the threatened or injured with a weapon at school variable increased, the odds of a respondent recently fighting increased approximately 2 times. The predictor of *victim of partner violence* was statistically significant (OR = 2.35, 95% CI OR = [1.05, 5.24]; $p = .037$). The odds ratio indicated that a respondent who had been a victim of partner violence had approximately 2 times the odds of recently fighting compared to a respondent who had not been a victim of partner violence. The predictor of *victim of traditional bullying* was statistically significant (OR = 2.67, 95% CI OR = [1.28, 5.56]; $p = .009$). The odds ratio indicated that a respondent who had been a victim of traditional bullying had approximately 3 times the odds of recently fighting compared to a respondent who had not been a victim of traditional bullying. The *race/ethnicity* group of Hispanic/Latino was statistically significant (OR = 2.63, 95% CI OR = [1.36, 5.09]; $p = .004$). The odds ratio indicated that an adolescent who was Hispanic/Latino had approximately 3 times the odds of recently fighting when compared to adolescents in the reference group of White.

Conclusion as relates to Null Hypothesis 2b. Reject Null Hypothesis 2b. There is sufficient evidence to indicate that at least one of the variables related to victimization, *age*, *gender*, or *ethnicity* significantly predicts the outcome of *recent fighting*.

Table 15: Logistic regression analysis of *recent fighting* outcome as a function of victimization and control variables (n = 309)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	0.623	0.256	5.912	.015	1.864	1.128	3.078
Victim of partner violence	0.854	0.409	4.353	.037	2.350	1.053	5.242
Victim of traditional (face-to-face) bullying	0.981	0.375	6.843	.009	2.666	1.279	5.560
Victim of cyberbullying	-0.644	0.495	1.691	.194	0.525	0.199	1.386
Age	-0.069	0.117	0.345	.557	0.933	0.742	1.175
Gender = Male	1.433	0.285	25.377	.0005	4.192	2.400	7.322
Race = Hispanic	0.968	0.336	8.272	.004	2.632	1.361	5.089
Race = Black/African American	0.598	0.378	2.500	.114	1.819	0.866	3.820
Race = Other	0.381	0.536	0.505	.477	1.463	0.512	4.184
Constant	-2.664	0.708	14.173	---	---	---	---

Null Hypothesis 2c. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent alcohol use*.

Alternative Hypothesis 2c. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent alcohol use*. Table 16 presents the findings of the logistic regression analysis.

The Omnibus Tests of Model Coefficients gives an indication of how well the model performs over and above results that would be obtained for a model with no predictors entered (an intercept only model). The test was statistically significant [χ^2 (9) = 27.64, p = .001], indicating that the predictors, as a set, reliably differentiated between those classified as *recent alcohol use* and those who were not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test [χ^2 (8) = 8.09, p = .425]. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .093) and Nagelkerke R-Square (R^2 = .127). These two tests indicated that between 9% and 13% of the variability in the dependent variable was explained by the predictors of the model. PAC of the correct outcome of *recent alcohol use* for the 10 predictor model was 68.9 %, an improvement over the base model of constant only (no predictors) percentage correct 62.5%.

Wald statistics indicated that one of the predictors contributed significantly to the model. The predictor of *victim of partner violence* was statistically significant (OR = 3.87, 95% CI OR = [1.68, 8.90]; p = .001). The odds ratio indicated that an adolescent who had been a victim of partner violence had approximately 4 times the odds of recently using alcohol than an adolescent who had not been a victim of partner violence.

Conclusion as relates to Null Hypothesis 2c. Reject Null Hypothesis 2c. There is

sufficient evidence to indicate that at least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* significantly predicts the outcome of *recent alcohol use*.

Table 16: Logistic regression analysis of *recent alcohol use* outcome as a function of victimization and control variables (n = 283)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	0.004	0.209	< .0005	.984	1.004	0.666	1.513
Victim of partner violence	1.353	0.425	10.115	.001	3.868	1.680	8.902
Victim of traditional (face-to-face) bullying	0.249	0.359	0.480	.488	1.283	0.634	2.595
Victim of cyberbullying	0.300	0.424	0.502	.479	1.350	0.588	3.100
Age	0.178	0.112	2.520	.112	1.195	0.959	1.4849
Gender = Male	0.349	0.263	1.765	.184	1.418	0.847	2.374
Race = Hispanic	0.408	0.302	1.825	.177	1.504	0.832	2.720
Race = Black/African American	-0.709	0.382	3.443	.064	0.492	0.233	1.041
Race = Other	-1.005	0.586	2.940	.086	0.366	0.116	1.155
Constant	-1.784	0.663	7.237	---	---	---	---

Null Hypothesis 2d. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent marijuana use*.

Alternative Hypothesis 2d. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent marijuana use*. Table 17 presents the findings of the logistic regression analysis.

The Omnibus Tests of Model Coefficients give an indication of how well the model performs over and above results that would be obtained for a model with no predictors entered (an intercept only model). The test was statistically significant [χ^2 (9) = 28.22, p = .001], indicating that the predictors, as a set, reliably differentiated between those classified as *recent marijuana use* and those who were not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test [χ^2 (8) = 8.76, p = .363]. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .089) and Nagelkerke R-Square (R^2 = .138). These two tests indicated that between 9% and 14% of the variability in the dependent variable was explained by the predictors of the model. PAC of the correct outcome category of *recent marijuana* use for the 10 predictor model was 77.6 %, a slight deterioration over the base model of constant only (no predictors) percentage correct of 78.9%.

Wald statistics indicated that two of the predictors contributed significantly to the model. *Gender* was significant (OR = 2.92 95% CI OR = [1.58, 5.39]; p = .001). The odds ratio for the gender variable indicated that the odds of a male recently using marijuana were approximately 3 times the odds of a female recently using marijuana. The predictor of *victim of partner violence* was statistically significant (OR = 2.57, 95% CI OR = [1.10, 6.04]; p = .030). The odds ratio indicated that an adolescent who had

been a victim of partner violence had approximately 3 times the odds of recently using marijuana than an adolescent who had not been a victim of partner violence.

Conclusion as relates to Null Hypothesis 2d. Reject Null Hypothesis 2d. There is sufficient evidence to indicate that at least one of the variables related to victimization, *age, gender,* or *race/ethnicity* significantly predicts the outcome of *recent marijuana use*.

Table 17: Logistic regression analysis of *recent marijuana use* outcome as a function of victimization and control variables (n = 303)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	0.229	0.197	1.354	.245	1.257	0.855	1.849
Victim of partner violence	0.945	0.435	4.729	.030	2.574	1.098	6.035
Victim of traditional (face-to-face) bullying	0.491	0.394	1.551	.213	1.634	0.754	3.541
Victim of cyberbullying	-0.336	0.524	0.412	.521	0.715	0.256	1.994
Age	0.095	0.131	0.526	.468	1.100	0.851	1.422
Gender = Male	1.072	0.313	11.754	.001	2.921	1.583	5.391
Race = Hispanic	0.643	0.348	3.418	.064	1.902	0.962	3.761
Race = Black/African American	-0.468	0.468	1.000	.317	0.626	0.250	1.567
Race = Other	-0.044	0.577	0.006	.939	0.957	0.309	2.965
Constant	-3.017	0.771	15.304	---	---	---	---

Null Hypothesis 2e. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *recent drug use*.

Alternative Hypothesis 2e. At least one of the variables related to victimization, *age*, g*ender*, or *race/ethnicity* will significantly predict the outcome of *recent drug use*. Table 18 presents the findings of the logistic regression analysis.

The Omnibus Tests of Model Coefficients give an indication of how well the model performs over and above results that would be obtained for a model with no predictors entered (an intercept only model). The test was statistically significant [χ^2 (9) = 18.34, p = .031], indicating that the predictors, as a set, reliably differentiated between those who were classified as recently using drugs and those who were not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test [χ^2 (7) = 3.56, p = .828]. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .072) and Nagelkerke R-Square (R^2 = .105). These two tests indicated that between 7% and 10% of the variability in the data is explained by the predictors of the model. PAC of the correct outcome category of *recent drug use* for the 10 predictor model was 75.6 %, an improvement over the base model of constant only (no predictors) percentage correct 74.0%.

Wald statistics indicated that one predictor, *threatened or injured with a weapon at school*, was statistically significant (OR = 1.56, 95% CI OR = [1.02, 2.38]; p = .041). For every ordinal level increase in the *threatened or injured with a weapon at school*

variable, the odds of a respondent recently using drugs increased approximately 1.5 times.

Conclusion as relates to Null Hypothesis 2e. Reject Null Hypothesis 2e. There is sufficient evidence to indicate that at least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* significantly predicts the outcome of *recent drug use*.

Table 18: Logistic regression analysis of *recent drug use* outcome as a function of victimization and control variables (n = 246)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	0.443	0.217	4.166	.041	1.558	1.018	2.384
Victim of partner violence	0.570	0.439	1.685	.194	1.768	0.748	4.182
Victim of traditional (face-to-face) bullying	0.489	0.393	1.549	.213	1.630	0.755	3.519
Victim of cyberbullying	0.255	0.470	0.296	.587	1.291	0.514	3.240
Age	0.037	0.133	0.076	.783	1.037	0.799	1.347
Gender = Male	0.518	0.310	2.790	.095	1.678	0.914	3.080
Race = Hispanic	0.510	0.366	1.940	.164	1.665	0.812	3.414
Race = Black/African American	0.143	0.441	0.104	.747	1.153	0.486	2.737
Race = Other	0.102	0.616	0.027	.869	1.107	0.331	3.701
Constant	-2.473	0.773	10.237	---	---	---	---

Null Hypothesis 2f. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of being *sad/hopeless*.

Alternative Hypothesis 2f. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of being *sad/hopeless*. Table 19 presents the findings of the logistic regression analysis.

The Omnibus Tests of Model Coefficients give an indication of how well the model performs over and above results that would be obtained for a model with no predictors entered (an intercept only model). The test was statistically significant [χ^2 (9) = 43.55, p = <.0005], indicating that the predictors, as a set, reliably differentiated between adolescents who were classified as *sad/hopeless* and adolescents who were not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test [χ^2 (8) = 5.24, p = .732]. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .133) and Nagelkerke R-Square (R^2 = .189). These two tests indicated that between 13% and 19% of the variability in the data were explained by the predictors of the model. PAC of the correct outcome category *sad/hopeless* for the 13 predictors model was 73.9 %, an improvement over the base model of constant only (no predictors) percentage correct 70.6%.

Wald statistics indicated that three of the predictors contributed significantly to the model. *Gender* was significant (OR = 0.49 95% CI OR = [0.29, 0.85]; p = .011). The odds ratio for the gender variable indicated that a male was approximately 51% less

likely to be classified as being sad/hopeless than a female. The predictor of *threatened or injured with a weapon at school* was statistically significant (OR = 2.83, 95% CI OR [1.56, 5.15]; $p = .001$). For every ordinal level increase in the *threatened or injured with a weapon at school* variable, the odds of an adolescent being *sad/hopeless* increased approximately 3 times. The predictor of *victim of traditional bullying* was also statistically significant (OR = 2.10, 95% CI OR = [1.04, 4.23]; $p = .038$). The odds ratio indicated that an adolescent who had been a victim of traditional bullying had approximately 2 times the odds of feeling sad/hopeless than an adolescent who had not been a victim of traditional bullying.

Conclusion as relates to Null Hypothesis 2f. Reject Null Hypothesis 2f. There is sufficient evidence to indicate that at least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* significantly predicts the outcome of *sad/hopeless*.

Table 19: Logistic regression analysis of *sad/hopeless* outcome as a function of victimization and control variables ($n = 306$)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	1.041	0.304	11.695	.001	2.833	1.560	5.145
Victim of partner violence	0.305	0.408	0.561	.454	1.357	0.610	3.017
Victim of traditional (face-to-face) bullying	0.741	0.358	4.292	.038	2.098	1.041	4.229
Victim of cyberbullying	0.187	0.434	0.186	.666	1.205	0.515	2.820

Table 19: (continued)							
Age	0.137	0.116	1.389	.239	1.147	0.913	1.439
Gender = Male	-0.707	0.279	6.395	.011	0.493	0.285	0.853
Race = Hispanic	0.526	0.339	2.410	.121	1.692	0.871	3.287
Race = Black/African American	0.368	0.389	0.894	.344	1.445	0.674	3.098
Race = Other	0.788	0.495	2.532	.112	2.199	0.833	5.806
Constant	-3.033	0.745	16.577	---	---	---	---

Null Hypothesis 2g. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *considered or planned suicide*.

Alternative Hypothesis 2g. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *considered or planned suicide*.

Table 20 presents the findings of the logistic regression analysis. The Omnibus Tests of Model Coefficients gives an indication of how well the model performs over and above results that would be obtained for a model with no predictors entered (an intercept only model). The test was statistically insignificant χ^2 (9) = 26.11, p = .002, indicating that the predictors, as a set, reliably differentiated between those classified as having considered or planned suicide and those who had not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test, χ^2 (8) = 6.74, p = .565. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .082) and Nagelkerke R-Square (R^2 = .167). These two tests indicated that between 8% and 17% of the variability in the data was explained by the predictors of the model. PAC of the correct outcome category of considered or planned suicide for the 13 predictor model was 89.3%, a slight deterioration over the base model of constant only (no predictors) percentage correct 89.6%.

Wald statistics indicated that three of the predictors contributed significantly to the model. *Gender* was significant (OR = 2.47 95% CI OR = [1.05, 5.79]; p = .038). The odds ratio for the gender variable indicated that the odds of a male considering or planning suicide were approximately 2.5 times the odds of a female considering or planning suicide. The predictor of *threatened or injured with a weapon at school* was statistically significant (OR = 0.55, 95% CI OR = [0.36, 0.83]; p = .005). For every ordinal level increase in the threatened or injured with a weapon at school variable, an adolescent was approximately 45% less likely to consider or plan suicide. The predictor of *victim of partner violence* was statistically significant (OR = 0.36, 95% CI OR = [0.14, 0.92]; p = .033). An adolescent who was the victim of partner violence was approximately 64% less likely to consider or plan suicide than an adolescent who was not the victim of partner violence.

Conclusion as relates to Null Hypothesis 2g. Reject Null Hypothesis 2g. There is sufficient evidence to indicate that at least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* significantly predicts the outcome of *considered or planned suicide*.

Table 20: Logistic regression analysis of *considered or planned suicide attempt* outcome as a function of victimization and control variables (n = 307)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	-0.604	0.214	7.942	.005	0.547	0.359	0.832
Victim of partner violence	-1.033	0.484	4.550	.033	0.356	0.138	0.920
Victim of traditional (face-to-face) bullying	-0.233	0.508	0.210	.647	0.792	0.293	2.144
Victim of cyberbullying	-0.215	0.587	0.134	.714	0.806	0.255	2.550
Age	0.246	0.172	2.041	.153	1.279	0.912	1.794
Gender = Male	0.903	0.435	4.309	.038	2.468	1.052	5.789
Race = Hispanic	-0.108	0.512	0.045	.832	0.897	0.329	2.448
Race = Black/African American	-0.224	0.563	0.158	.691	0.800	0.265	2.409
Race = Other	-0.710	0.641	1.229	.268	0.491	0.140	1.726
Constant	1.821	0.914	3.969	---	---	---	---

Null Hypothesis 2h. None of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *actual suicide attempt*.

Alternative Hypothesis 2h. At least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* will significantly predict the outcome of *actual suicide attempt*.

Table 21 presents the findings of the logistic regression analysis. The Omnibus Tests of Model Coefficients give an indication of how well the model performs over and above results that would be obtained for a model with no predictors entered (an intercept only model). The test was statistically significant [χ^2 (9) = 24.12, p = .004], indicating that the predictors, as a set, reliably differentiated between those classified as actual suicide attempt and those who were not. The logistic regression model's goodness-of fit was also assessed using the Hosmer and Lemeshow Test [χ^2 (8) = 6.70, p = .570]. For this test, a p-value greater than .05 indicates the data fits well with the model. Therefore, goodness-of-fit was indicated for this model.

Variability of the model was assessed using two statistics, Cox and Snell R-Square (R^2 = .085) and Nagelkerke R-Square (R^2 = .185). These two tests indicated that between 9% and 19% of the variability in the dependent variable was explained by the predictors of the model. PAC of the correct outcome *category actual suicide attempt* for the 10 predictor model was 91.9 %, an improvement over the base model of constant only (no predictors) percentage correct 90.8%.

Wald statistics indicated that two of the predictors contributed significantly to the model. The predictor of *threatened or injured with a weapon* at school was statistically significant (OR = 2.25, 95% CI OR = [1.38, 3.68]; p = .001). For every ordinal level increase in the threatened or injured with a weapon at school variable, the odds of an adolescent actually attempting suicide increased approximately 2 times. The predictor for the *race/ethnicity* group of Hispanic/Latino was statistically significant (OR = 5.34, 95% CI OR = [1.53, 18.70]; p = .009). The odds ratio indicated that an adolescent who

was Hispanic/Latino had approximately 5 times the odds of actually making a suicide attempt than an adolescent classified as White.

Conclusion as relates to Null Hypothesis 2h. Reject Null Hypothesis 2h. There is sufficient evidence to indicate that at least one of the variables related to victimization, *age*, *gender*, or *race/ethnicity* significantly predicts the outcome of *actual suicide attempt*.

Table 21: Logistic regression analysis of *actual suicide attempt* outcome as a function of victimization and control variables (n = 272)

Variable	*B*	*SE*	Wald χ^2	Sig.	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
Threatened or injured with a weapon at school	0.811	0.251	10.412	.001	2.250	1.375	3.682
Victim of partner violence	0.659	0.600	1.206	.272	1.932	0.596	6.261
Victim of traditional (face-to-face) bullying	0.097	0.647	0.023	.880	1.102	0.310	3.916
Victim of cyberbullying	-0.519	0.850	0.373	.541	0.595	0.113	3.147
Age	0.148	0.204	0.527	.468	1.160	0.777	1.730
Gender = Male	-0.119	0.460	0.067	.796	0.888	0.361	2.186
Race = Hispanic	1.676	0.639	6.877	.009	5.344	1.527	18.698
Race = Black/African American	1.036	0.739	1.967	.161	2.819	0.662	11.997

Table 21: (continued)

Race = Other	0.726	0.958	0.575	.448	2.067	0.316	13.511
Constant	-5.122	1.271	16.244	---	---	---	---

Specific Aim 3. Determine if being subjected to cumulative victimization is associated with increased mental health factors and participation in a greater amount of delinquent and substance use and abuse behaviors.

Research Hypothesis 3. Being a victim of cumulative victimization is associated with a greater amount of mental health factors and delinquent and substance use and abuse behaviors.

Null Hypothesis 3. There is not a statistically significant direct correlation between the summed variable constructs associated with cumulative victimization as relates to the amount of mental health factors, and/or amount of delinquent and substance use and abuse behaviors.

Alternative Hypothesis 3. There is at least one statistically significant direct correlation between the summed variable constructs associated with cumulative victimization as relates to the amount of mental health factors, and/or amount of delinquent and substance use and abuse behaviors.

The correlation findings for the summed constructs are presented in Table 22. All of the correlations were statistically significant at the $p < .01$ level, however, the effect sizes of the correlations were small. Cohen (1988) defined strength of association defined by correlation coefficients (effect size) as small (+/- .10 - .29), medium (+/- .30 - .49) and large (+/- .50 to 1.0).

A small indirect correlation was found between the variable constructs of cumulative victimization and amount of mental health factors ($r = -.278$, $p < .0005$). The indirect (negative) relationship between the variables suggests that when scores of cumulative victimization increase or decrease, scores for the amount of mental health factors move in an opposite direction. Greater victimization is associated with lesser mental health factors, and lesser victimization is associated with greater mental health factors.

A small direct correlation was found between the variable constructs of cumulative victimization and amount of delinquency behaviors ($r = .227$, $p < .0005$). The direct (positive) relationship between the variables suggests that when scores of cumulative victimization increase or decrease, scores for the amount of delinquency behaviors move in an opposite direction. Greater victimization is associated with a greater amount of delinquency behaviors, and lesser victimization is associated with a lesser amount of delinquency behaviors.

A small indirect correlation was found between the variable constructs of amount of delinquency behaviors and amount of mental health factors ($r = -.187$, $p < .0005$). The indirect (negative) relationship between the variables suggests that when the scores for the amount of delinquency behaviors increase or decrease, scores for the amount of mental health factors move in an opposite direction. Greater delinquency behavior is associated with lesser mental health factors, and lesser delinquency behavior is associated with greater mental health factors.

Conclusion as relates to Alternative Hypothesis 3. The cumulative victimization variable was directly associated with the amount of delinquent and substance use and

abuse behaviors variable. Therefore, reject Null Hypothesis 3. There is at least one statistically significant direct correlation between the summed variable constructs associated with cumulative victimization as relates to the amount of mental health factors, and/or amount of delinquent and substance use and abuse behaviors.

Table: 22 Spearman's rank order correlations for variable constructs used for inferential analysis of specific aim 3

Variable	1	2
1. Cumulative victimization		
2. Amount of mental health factors	-.278**	
3. Amount of delinquency behaviors	.227**	-.187**

Note: All correlations significant at the $p < .01$ level

4.3 Summary

Chapter 4 began with a description of the population and sample demographics of the participants in the study. Following the report of demographics, instrumentation and inferential analysis, variable constructs were briefly defined.

Hypothesis testing was performed via McNemar's Tests, chi-square tests of independence, logistic regression, and Spearman's Rank Order correlation analyses. Significant findings were found to support Research Hypotheses 1i, 1k, 2a through 2h, and Research Hypothesis 3. Greater victimization was associated with a greater amount of delinquency and substance use behaviors, lesser mental health factors, and a greater amount of delinquency and substance use behaviors. In addition, greater delinquency land substance use behavior was associated with lesser mental health factors.

CHAPTER 5: DISCUSSION

Previous research suggests an association between adolescent victimization, adverse health, and health-risk behavior. This study aimed to update the current state of knowledge by examining the individual effects multiple types of adolescent victimization have on mental health factors, participation in delinquent behaviors, and substance use and abuse. The effects of cumulative adolescent victimization were also explored. Significance lies in the fact that no previous studies have compared the adverse mental health outcomes and behaviors of these specific types of adolescent victimization together, using a nationally representative sample.

5.1 Victimization Prevalence

Regarding victimization among all participants, 13.4% reported cyberbullying, 17.1% reported being bullied on school property, 7.6% reported being threatened or injured by someone with a weapon on school property, and 10.3% reported being physically hurt by their boyfriend or girlfriend. These findings reveal that adolescents are more likely to be victims of traditional bullying and cyberbullying than being threatened or injured with a weapon or being a victim of partner violence. This is consistent with recent national statistics, which show that 4.9% of adolescents experienced violent victimization at school, 28% reported bullying, and 9% had experienced cyberbullying (Robers, Kemp, & Truman, 2013). Partner violence, according to various estimates, affects 9% to 34% of adolescents (Foshee & Reyes, 2012).

5.2 Significant Associations among Victimization, Mental Health, Delinquent and Substance Use and Abuse Behaviors, and Demographics

The first specific aim of this study examined the demographics and background characteristics (i.e., gender, race, ethnicity, age, grade level) associated with various issues of mental health, delinquent and substance use and abuse behaviors, and each type of adolescent victimization. The first statistically significant finding was that adolescents experience a significantly greater proportion of traditional bullying than cyberbullying. As previously stated, this finding is consistent with recent national statistics. Adolescents are increasingly gaining more access to devices that make them more susceptible to cyberbullying. A nationally representative study done by the Pew Research Center found that 74% of American adolescents ages 12-17 claim to have access to the Internet through at least one type of device and 78% have a cell phone (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013). These increases contribute to rising rates of cyberbullying, as evidenced by the prevalence of adolescent cyberbullying, which researchers estimate to be between 15% to 57%, depending on the definition and participants' characteristics (Aoyama & Talbert, 2010). Although the Cyberbullying Research Center has found that lifetime rates have increased since 2007, rates have varied from year to year and have an overall average of 24% (Cyberbullying Research Center, 2013), not nearly as high as the 77% lifetime rate for traditional bullying (DeVoe & Murphy, 2011).

The next significant finding was that White adolescents experience a greater proportion of traditional bullying than racial or ethnic minority adolescents. Research that has examined the relationships between race/ethnicity and traditional bullying reveal inconsistent results. Studies have found the most victimized groups to be White (Dinkes,

2009; Juvonen, Graham, & Schuster, 2003; Sawyer, Bradshaw, & O'Brennan, 2008; Seals & Young, 2002; Spriggs, Iannotti, Nansel, & Haynie, 2007); Black and Asian (Dinkes, 2009; Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004); Hispanic/Latino (Spriggs et al., 2007); and multiethnic (Stein et al., 2007). Studies have also found no differences between racial/ethnic groups (Swearer, Turner, Givens, & Pollack, 2008). This study found that White adolescents experience a greater proportion of traditional bullying than racial or ethnic minority adolescents. This result is consistent with a recent study by the National Center for Education Statistics, which found that 10.6% of White, 7.0% of Black, 7.6% of Hispanic, and 5.5% of Asian adolescents had experienced cyberbullying (Robers et al., 2013). A recent nationally representative study reported that 98% of White adolescents, 92% of Black, and 88% of Hispanics access the Internet (Madden et al., 2013). This study also found that White adolescents were most likely to have mobile access to the Internet (e.g., cell phone), own a computer, and own a tablet. This significant finding can be explained by the fact that adolescents who spend more time online are more likely to experience cyberbullying (Twyman, Saylor, Taylor, & Comeaux, 2010).

The last significant finding regarding the first specific aim was that adolescents in the 9th or 10th grades experience a greater proportion of traditional bullying than adolescents in the 11th or 12th grades. This finding is consistent with recent research, which contends that traditional bullying behavior peaks during middle school and tapers by early high school years (Bauer et al., 2006; Guerra, Williams, & Sadek, 2011; Pepler, Jiang, Craig, & Connolly, 2008; R. G. Smith & Gross, 2006).

The second specific aim examined mental health factors and delinquent and substance use and abuse behaviors associated with each type of adolescent victimization. There were several significant findings. The odds of a male recently carrying a gun or weapon were approximately 10 times the odds of a female. The association between males and weapon carrying is pronounced in research (Kodjo, Auinger, & Ryan, 2003; Pickett et al., 2005; Resnick, Ireland, & Borowsky, 2004) and has been explained using a number of theories, including the psychodynamic perspective, behavioral theory, cognitive theory, and personality theory (McMurtry & Curling, 2008). The predictor of *threatened or injured with a weapon at school* was also statistically associated with recent weapon carrying. This relationship is consistent with research that has found that adolescents who have been threatened or violently injured are at risk for retaliation (Chang et al., 2003; Patchin, Huebner, McCluskey, Varano, & Bynum, 2006).

Many variables significantly predicted the outcome of *recent fighting*. Similar to recent weapon carrying, the odds of a male recently fighting were approximately 4 times the odds of a female recently fighting and the predictor of *threatened or injured with a weapon at school* was significant. The significance of *victim of partner violence* predicting the outcome of *recent fighting* is of particular interest. The literature review of this study revealed that the majority of outcomes that have been associated with adolescent partner violence victimization are internal in nature (i.e., suicidal thoughts and attempts, depression, substance use and abuse, etc.) and reflect the outcomes of adult partner violence. Researchers, however, contend that adolescent partner violence is different from adult partner violence and should not be subjected to the same frameworks (Mulford & Giordano, 2008). One finding that is gaining more support concerning this

issue is the fact that adolescent females and males may perpetuate the same or similar frequencies of physical aggression towards partners (Capaldi, Kim, & Shortt, 2007; Giordano, 2007; Mulford & Giordano, 2008; O'Leary, Smith Slep, Avery-Leaf, & Cascardi, 2008). While rates may be similar, it should be noted that the types of victimizations and motivations behind them differ among genders. Males, for example, are more likely to report anger as a motivating factor, while females report more self-defense (Mulford & Giordano, 2008). This study supports these findings and points to the need for further research concerning the dynamics of adolescent relationships. The predictor of *victim of traditional bullying* was statistically significant and reflects the literature that guided this study, supporting the fact that victims of bullying are at risk for aggression, problem behavior, and even becoming bullies themselves. The last significant association with *recent fighting* was the *race/ethnicity* group of Hispanic/Latino. Although numerous studies have linked violent behavior to racial/ethnic minorities, the Surgeon General's Report on Youth Violence stresses that race/ethnicity alone does not explain violence and that other factors, such as social determinants, must be accounted for (United States Office of the Surgeon General, 2001). An extensive review of literature by Soriano, Rivera, Williams, Daley, and Reznik (2004) revealed an emerging body of research that reveals three cultural concepts that influence violence by racial/ethnic minority youth: acculturation, the "process whereby the attitudes and/or behaviors of persons from one culture are modified as a result of contact with a different culture (Taskforce on Violence, 1999);" ethnic identity, "a complex construct including a commitment and sense of belonging to the group, positive evaluation of the group, interest in, and knowledge about, the group, and involvement in

social activities of the group (Stewart, 1999);" and bicultural self-efficacy, "the extent to which ethnic minorities are able to act with confidence and acceptance of their own cultural background while holding some level of appreciation of the dominant cultural group within major life domains (Berry, Kim, Power & Young, 1989, p. 185)."

Victim of partner violence was the only statistically significant predictor of both *recent alcohol use* and *recent drug use*. Although the literature that served as a basis for this study focused on alcohol serving as a method of self-medicating, research also highlights the role alcohol (Eaton et al., 2007; Gover, 2004; Howard, Qiu, & Boekeloo, 2003) and marijuana use (Reingle, Staras, Jennings, Branchini, & Maldonado-Molina, 2012; Testa, Livingston, & Leonard, 2003) play towards becoming a victim of partner violence.

Gender was a significant predictor for the outcome of *recent drug use*. Males were approximately 3 times more likely than females to have recently used marijuana, which is a well-established relationship in the literature. All waves of Monitoring the Future, an ongoing study of the behaviors, attitudes, and values of adolescents, found that males have higher rates of illicit drug use and more frequent drug use (Johnston, 2010). Most of the research that has examined gender differences among adolescent drug use has focused on dissimilar parental monitoring and peer delinquent behavior (Bahr, Hoffmann, & Yang, 2005; Svensson, 2003).

One predictor*, threatened or injured with a weapon at school*, statistically predicted *recent drug use*. This relationship is established in the literature, but researchers often note the difficulty regarding the pattern of causation, as most drugs of abuse may lead to violent behavior, but often by different mechanisms, due to issues such

as biological pathways, type of drug, amount, and patterns of use (Boles & Miotto, 2003; Lavine, 1997).

The first variable that significantly predicted the outcome of *sad/hopeless* was *gender*, which reveals that a male was approximately 51% less likely to be classified as being *sad/hopeless* than a female. This is consistent with literature that indicates that female adolescents are more likely to report depressive symptomology than males (Ge, Natsuaki, & Conger, 2006; Hankin, Mermelstein, & Roesch, 2007; Sen, 2004). This disparity may be due to females being more likely to internalize disorders (e.g., depression, anxiety, eating disorders) (Crick & Zahn–Waxler, 2003) and evident in the fact that adolescent females are twice as likely to become depressed than males of the same age (McGuinness, Dyer, & Wade, 2012). The predictor of *threatened or injured with a weapon at school* was statistically significant. Based on previous literature, PTSD and depressive disorders are the most often reported mental health concerns associated with being violently threatened or injured, though this study did not have the means to examine PTSD. The last significant predictor was the outcome of *victim of traditional bullying*, which is also consistent with the literature that was reviewed for this study.

Gender significantly predicted the outcome of *considered or planned suicide*. The odds of a male considering or planning suicide were approximately 2.5 times the odds of a female considering or planning suicide. This is inconsistent with research, which indicates that adolescent females, and females in general, are more likely to report planning or considering suicide (Langhinrichsen-Rohling, Friend, & Powell, 2009). According to the most recent American adolescent suicide statistics, males committed suicide at a rate nearly five times that of females (CDC, 2012b) and were likely to do so

by using a gun or other weapon (Langhinrichsen-Rohling et al., 2009). Two victimization types were also significant predictors, but were negatively associated: *threatened or injured with a weapon at school* and *victim of partner violence*. There are, several studies that have associated high risks of suicide to dangerously violent adolescents (Apter et al., 1995; Evans, Marte, Betts, & Silliman, 2001; Flannery, Singer, & Wester, 2001). In this case, however, victims were less likely to consider suicide if they were threatened or injured by a weapon at school (45% less likely) and victims of partner violence (64% less likely). This situation calls for further research regarding the mechanisms behind these associations. It may be that these adolescents are victims due to victimizing others or defending themselves. In this case, adolescents who are more willing to fight back or start fights may have higher self-esteem and be less likely to internalize their symptoms (e.g., suicidal thoughts and planning). Another possible explanation is that environmental factors (e.g., peers and family) are contributing to their resiliency.

The predictor of *threatened or injured with a weapon at school* was the first statistically significant predictor for the outcome of *actual suicide attempt*. Similar to the findings concerning the outcome of *considered or planned suicide*, very few studies report associations between being threatened or injured with a weapon and suicide, indicating a specific area for more research. The *race/ethnicity* group of Hispanic/Latino was statistically significant, as an adolescent who was Hispanic/Latino had approximately 5 times the odds of actually making a suicide attempt than an adolescent classified as White. This is consistent with research and statistics that show that Latino/a youth are at a greater risk of suicide attempts than other racial and ethnic groups (Cash &

Bridge, 2009). Latina adolescents, particularly those ages 18 and under, are most likely to report suicide attempts out of all racial/ethnic and gender groups (Rew, Thomas, Horner, Resnick, & Beuhring, 2001). Some studies have taken a more in-depth look at why these disparities exist among the adolescent Hispanic/Latino population. Rew et al. (2001) found that Hispanic/Latina youth were more likely to report suicide attempts because of a family history of suicide attempts, friend's history of suicide attempt, history of sexual abuse, history of physical abuse, and environmental stress. Fortuna, Perez, Canino, Sribney, and Alegria (2007) reported that Puerto Ricans were more likely to report ideation as compared to other Latino subgroups, but this difference was eliminated after adjustments for psychiatric and sociocultural factors. In addition, female gender, acculturation (i.e., born in the United States and English speaking) and high levels of family conflict were independently and positively correlated with suicide attempts. Peña, Wyman, Brown, Matthieu, Olivares, Hartel, and Zayas (2008) found that second-generation Latinos (i.e., born in the United States with immigrant parents) were 2.87 times more likely to attempt suicide than first-generation (i.e., foreign-born) youth. A consistent trend was visible, as later-generations of U.S.-born Latino youth with U.S.-born parents were 3.57 times more likely to attempt suicide than were first-generation youth.

5.3 Cumulative Victimization

The third specific aim examined if being subjected to cumulative victimization is associated with increased mental health factors and participation in a greater amount of delinquent and substance use and abuse behaviors. The results of this study indicate that greater victimization was associated with a greater amount of delinquency and substance

use behaviors, and lesser victimization was associated with a lesser amount of delinquency and substance use behaviors. This was expected, as literature found that adolescents who were exposed to multiple forms and/or repeated victimization were more likely to be involved in delinquency, associate with delinquent peers, (Ford et al., 2010), and use drugs and alcohol (Espelage, Low, & De La Rue, 2012).

A surprising result is that greater victimization was associated with lesser mental health factors, and lesser victimization was associated with greater mental health factors. Although this is contrary to the literature that directed this study, the other two significant results of this specific aim shine light on a possible explanation. Adolescents who experienced a greater amount of victimizations may be reporting less adverse mental health outcomes because they are participating in more delinquent and substance use and abuse behavior, which serves as a coping mechanism, lessening (or possibly masking) a propensity toward feeling sad or hopeless for a two-week period, or considering or attempting suicide. This coping behavior among adolescents is supported in the literature (McKenzie, Jorm, Romaniuk, Olsson, & Patton, 2011; Patrick, Schulenberg, O'Malley, Johnston, & Bachman, 2011). This effect is not only visible in the first significant correlation, indicating that greater victimization was associated with a greater amount of delinquency and substance use behaviors, but also in the final significant correlation, which reveals that greater delinquency and substance use behavior is associated with lesser mental health factors. Another possible explanation is the construction of measures used for this study. In order to investigate this hypothesis, mental health factors were counted as feeling sad and hopeless for en extended period of time, planning or considering suicide, or an actual suicide attempt. Substance use and abuse is often

classified as a mental health disorder in the literature. Had substance use and abuse been classified as mental health factors in this analysis, correlations among victimization and mental health factors would have been evident. A final explanation is that adolescents who have experienced cumulative victimization may actually experience less mental health factors, possibly due to resiliency. Further research is necessary to explore these associations and mechanisms.

5.4 Limitations and Strengths

Certain study limitations should be considered. As this was a secondary data analysis, methods were limited by the data that had been collected by the CDC. Victimization types, for example, were measured using a single question each, which restricts analysis and implications that may be drawn from them. This is particularly true regarding measures of mental health factors. A single question was used to capture all mental health factors that did not pertain to suicide.

Although this study effectively used the SEM as its theoretical framework, there may be other factors that significantly contribute to the outcomes explored. The data provided did not allow the examination of many variables that have been linked to this study's subject matter in the literature (e.g., geographic area/region, specific or absent populations, academic achievement, socioeconomic status, sexual orientation, and mental or physical disability). Further, many of these factors occur in levels of the SEM that were not explored (i.e., community and society). These limitations could have resulted in omitted-variable bias, which occurs when one or more important causal factors are left out of an analysis.

The data is also limited in that it is self-reported, making it susceptible to bias. Most of the YRBS survey questions focus on a recollection timeframe of one year, which may have resulted in recall bias. In addition, the survey was administered in schools and a number of survey questions are sensitive in nature, providing the opportunity for social desirability bias.

Despite these limitations, this study displays several strengths. One is the large, nationally representative dataset that was used for analyses, which increases its generalizability. The YRBS displays great racial and ethnic diversity, which reflects the quickly changing dynamics of the adolescent population. Also, notable is the inclusion of cyberbullying, as this type of victimization is rarely studied at the national level. This study marks the first time cyberbullying data was collected by the YRBS. Another major strength is that the literature shows that in general, information self-reported by adolescents is reliable and valid (Brener, Billy, & Grady, 2003). The YRBS itself has also been found to be reliable and valid (Brener et al., 2002). From a methodological standpoint, this study's use of a random sample for regression analyses limited false statistical significance, which is often seen large datasets.

5.5 Implications for Health Policy

The results of the study have implications for policy, practice, and future research. Overall, the study made several significant contributions to the adolescent victimization knowledgebase. From a policy perspective, violence, whether partner, interpersonal, or threat of harm, is clearly outlined and against the law at any level. As this study has shown, adolescents are more likely to experience traditional bullying and cyberbullying, which are not as clearly spelled out under the law. There is no federal law that

specifically applies to bullying, but harassment based on race, color, national origin, sex, disability, or religion is addressed as unlawful. State and local lawmakers have enacted laws such as state education codes and policies to guide districts and schools. Most states have enacted both laws and policies against bullying. Eight states have enacted laws only (Tennessee, Illinois, Indiana, Texas, Arizona, Kansas, Minnesota, and North Dakota) and Montana is the single state to have enacted policy only (USDHHS, 2013a). These laws and policies vary in their definitions of bullying as well as how they address it. The findings of this study support the need for a federal law against bullying that would guide state and local governments to a comprehensive and uniform approach to addressing bullying. Federal bullying prevention legislation was first introduced in 2003 when Congresswoman Linda Sanchez (D-CA) proposed the Bullying Prevention for School Safety Act. In February of 2013, Senator Bob Casey (D-PA) reintroduced the Safe Schools Improvement Act (SSIA). Senator Casey first introduced this act in 2010 in order to require schools to address bullying and collect data on its incidence and response. President Barack Obama endorsed the SSIA in 2012 and support for federal bullying legislation has been gaining bipartisan support.

A similar situation is evident regarding legislation to address cyberbullying. States have enacted "cyberstalking" or "cyberharassment" laws or have included electronic communication within traditional stalking and harassment laws. In addition, several states have enacted actual "cyberbullying" laws. These examples demonstrate some of the many terms that have been used to organize these behaviors, which make it harder to determine how it is addressed. The National Conference of State Legislatures (NCSL) describes cyberstalking as a pattern of behavior that utilizes the

Internet, email or other electronic method to stalk in a threatening or malicious manner. Cyberharassment refers to threatening or harassing email messages, instant messages, blog entries or websites, but does not involve a credible threat (The National Conference of State Legislatures (NCSL), 2013). Recent data shows that 18 states have cyberbullying laws and 5 states have proposed laws, leaving 27 states with no current action regarding this issue (S. Hinduja & J. W. Patchin, 2011). As with traditional bullying, the findings of this study support the need for a federal law against cyberbullying that would guide state and local governments to a more uniform approach to protecting victims of cyberbullying. Although Section 113 of the Violence Against Women Act signed by President George W. Bush in 2006 includes cyberstalking, there are no federal laws that address cyberbullying. The most recent attempt was the Megan Meier Cyberbullying Prevention Act, proposed in 2009. As the bullying federal bill described earlier is gaining more support, a favorable option would be to include cyberbullying language.

At the local level, district officials, school administrators, and teachers should clearly express to students that any type of victimization will not be tolerated and convey all consequences. Although most schools take either a zero tolerance or care giving approach to victimization, a recent state-wide study found that combining both techniques into an authoritative approach resulted in less bullying and victimization (Gregory et al., 2010). Reviewing and updating school policies and handbooks to include all possible types of victimization, including cyberbullying, is also necessary. These policies should reflect any state laws and be supplemented with policies that specifically

address their student populations. This would be particularly beneficial regarding victimization that takes place off school grounds or electronically.

This study also highlights the importance of a range of available and accessible, culturally relevant mental health services (e.g., outpatient and inpatient services), especially for adolescents who have been victimized, or demonstrate substance use and delinquent behaviors. The Affordable Care Act (ACA) was passed by Congress in 2010 and addresses many aspects regarding access to mental health services. Of particular importance concerning adolescents, mental health and substance use disorder services are subject to federal parity requirements. As many of the issues examined throughout this study take place within schools and among peers, it is essential that school-based health centers be equipped to handle the physical and mental health care needs of adolescents. The Affordable Care Act allocates funds to new and existing school-based health centers to address these needs, providing $200 million in grants from 2010-2013.

Legislative action resulted in many states as a direct response to the December 2012 killings of 20 students and 6 adults at Sandy Hook Elementary School in Connecticut by Adam Lanza. There are 35 states that have increased funding for mental health services for fiscal year 2014 (Levit et al., 2013). Several states, including Connecticut, implemented new laws focusing on the mental health of public school students. Minnesota and Washington passed laws requiring training for school employees on how to identify students experiencing adverse mental health factors, and Minnesota also requires mental health education for middle and high school students. Based on the results of this study, it would behoove states, local governments, school

districts, and schools to enact policies such as these in order to ensure that culturally relevant mental health services are available and accessible to all students.

In addition, study findings, as well as the literature, point to adolescent delinquency as a significant issue regarding the mental health of this population and should be of utmost concern. The National Commission on Correctional Healthcare (1995) has released standards for the minimum required mental health services that should be provided by detention facilities. Yet, still many facilities currently do not meet these minimal standards and movement toward addressing this would improve the access and quality of mental health services available to juvenile delinquents (Desai et al., 2006).

5.6 Implications for Health Practice

Study results indicate that victimization prevention and intervention efforts be both gender-neutral and gender-specific, as different types of victimization affect males and females in different ways. These efforts should also include genders other than male and female. Schools would be able to improve and develop these efforts by collecting, analyzing, and documenting the circumstances of each event, including perpetrators, victims, settings, and how the situation was addressed. With regard to a comprehensive, school-based approach, the Olweus Bullying Prevention Program was designed to reduce bullying and partner violence by improving peer relations among students (Olweus & Limber, 2010). As cyberbullying and indirect bullying are often less overt than traditional bullying and physical violence, these forms of victimization require more careful attention. Teachers and school officials should offer an environment in which students feel comfortable voicing their concerns and reporting incidences of these events.

In order to do this, school personnel should be knowledgeable regarding their schools' victimization policies and best practices, able to assist in the intervention process, and willing to collaborate with other school personnel, parents, and community resources. There should be a standard course of action concerning cooperation with these resources, which could be local law enforcement, mental health services, and social workers. Many local law enforcement agencies, for example, are equipped with the ability to investigate cybercrimes.

Schools should educate and empower students by ensuring that all policies, procedures, and expectations are clearly defined and available to all students. Free age-appropriate ethics and law education on cyberbullying is available through CyberSmart, a national cybersafety and cybersecurity education program. Recently, a group of researchers developed simulations in a virtual environment, which were found to be engaging to youth, and to have the potential to be powerful tools in helping schools address cyberbullying prevention (V. H. Wright, Burnham, Inman, & Ogorchock, 2009). Education and empowerment can help students report, diffuse, and prevent situations before harm occurs. Peer-to-peer support groups, for example, give adolescents the opportunity to empower each other.

Based on the results of this study, health practitioners within schools and throughout various community organizations serving youth should screen for risk factors associated with adverse mental health and heath-risk behaviors, especially concerning violent and/or recurring victimization. The U.S. health system has recognized the importance of this issue and has made progress towards addressing it for the past 15 years. Throughout the early 2000s researchers began to note the shortcomings of the

U.S. healthcare system in regards to child and adolescent mental health prevention, assessment, and treatment. Inadequacies were attributed to a lack of cohesion, guidance, and proper policies (Mills et al., 2006). On April 29, 2002, President George W. Bush announced the creation of the New Freedom Commission on Mental Health to study the mental health service delivery system in order to make recommendations for improvement. The completed report, released on July 22, 2002, provided a comprehensive approach to addressing the mental health of children and adolescents. The fourth goal of the report is that early mental health screening, assessment, and referral to services become common practice (The President's New Freedom Commission on Mental Health, 2003). In order to accomplish this goal, the commissioners recommend the promotion of youth mental health; improvement and expansion of school mental health services; screening for co-occurring mental and substance use disorders in order to provide integrated treatment strategies; and screening for mental disorders in primary health care, across the life span, in order to refer to treatment and support (The President's New Freedom Commission on Mental Health, 2003). The current administration under the direction of President Barack Obama has continued this focus on mental health services. As previously stated, the ACA resulted in the expansion of mental heath services and provides service funding. This expansion allows access to behavioral health assessments and mental health screenings for children and adolescents, resulting in early intervention and improved current and long-term quality of life.

The National Association of School Nurses (NASN) has released a book of guidelines for addressing child and adolescent mental health in a school environment.

The authors recommend establishing a mental health screening action plan that includes: establishing a collaborative team comprising key stakeholders to investigate, develop, and implement a mental health screening process; planning screening as part of a comprehensive, coordinated continuum of support for the development of students; incorporating universal screening for mental health problems into the school's processes; deciding what will be screened; choosing appropriate screening procedures based on affordability, feasibility, and acceptance; considering legal and ethical issues; providing professional development for school personnel; gaining the support of teachers and administrative staff through promotion; conducting parent education sessions; discussing the benefits of mental health screening, how it will be conducted, how the results are to be used, and dispel misunderstandings; implementing the screening process and using the results to plan interventions (Desrochers & Houck, 2013).

Organizations throughout the community that serve adolescents, such as healthcare providers, social work programs, afterschool programs, and recreational facilities, also have an opportunity to be proactive concerning these issues. Tools and assessments are available to help screen for adverse mental health, problem behaviors, and risk factors such as victimization. Examples include depression (e.g., Patient Health Questionnaire [PHQ-9] and The MacArthur Foundation Initiative on Depression and Primary Care Depression Tool kit); drug and alcohol use (e.g., Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide, Alcohol Use Disorders Identification Test [AUDIT] and Drug Abuse Screen Test [DAST-10]); anxiety disorders (e.g., Generalized Anxiety Disorder [GAD-7] and Primary Care PTSD Screen [PC-PTSD]); suicide risk (e.g., Suicide Assessment Five-Step Evaluation and Triage [SAFE-

T] and The Suicide Behaviors Questionnaire-Revised [SBQR]); trauma (e.g., Life Event Checklist [LEC]); bullying (e.g., Olweus Bully/ Victim Questionnaire); partner violence (e.g., Hurt-Insult-Threaten-Scream [HITS]); and intentional injury (e.g., FiGHTS [Fi=fighting, G=gender, H=hurt while fighting, T=threatened, S=smoker]). Emergency rooms are an ideal location to utilize these tools, as violently injured youth are often admitted, but may not receive screening, treatment, or referrals for nonphysical health services.

5.7 Implications for Future Research

Study findings provide associations among adolescent victimization, adverse mental health, numerous delinquent behaviors and substance use and abuse, with these associations being especially evident among adolescent victims of interpersonal violence and partner violence. Taken together, these findings highlight the need for future health services research in several areas. Specifically regarding continuation of this study, the next steps will involve repetition, focusing on modifying methods that may have compromised the results. For example, missing data was addressed by using pairwise deletion. Follow-up analyses will utilize regression substitution, mean substitution, and deletion of cases with missing values in order to investigate possibly biased parameter estimates. Also, as the random sample generated to apply regression analyses represented a major component of the methodology, follow-up analyses will incorporate larger random sample sizes. It is essential to continue to identify these associations in order to craft interventions and provide services to adolescents that can alleviate the negative consequences associated with victimization. Longitudinal research studies concerning these associations should also be conducted, as they are able to extend beyond

a moment in time. Finally, qualitative research is necessary in order to provide a level of detail not available through quantitative research about the experience and effects of adolescent victimization.

In addition to these efforts, there are remaining areas that need to be addressed. LGBTQ youth and youth who are physically and/or mentally disabled are typically excluded from national surveys, including the YRBS, and have very high odds of becoming victims (Berlan, Corliss, Field, Goodman, & S., 2010). Future research, policy and practice should treat these and other vulnerable populations as a priority.

A major question is whether victimization and its associations are stable across pre-adolescence, adolescence, and adulthood. This is especially important given the major mental, physical, social, and environmental changes that take place throughout these periods of transition and development. This will help to determine whether victimization is primarily influenced by the environment, individual, or both equally. It will also help to reveal the effects and interactions between different types of victimization and aid in predicting who is at risk for victimization.

Another major question to address is how some adolescents are able to remain resilient to adverse mental health, substance use and abuse, and delinquent behavior, despite being victimized. Studies should continue to identify factors of resiliency such as healthy support systems that may help adolescents overcome victimization experiences. The research focus should then turn to understanding the biological and possible genetic mechanisms by which victimized children develop adverse health and demonstrate health-risk behaviors. Researchers and practitioners should also stay abreast regarding

emerging forms of victimization, as the population continues to become more diverse and technologically savvy.

Research will also play a major role in evaluating the resulting interventions and preventive methods that emerge. Adolescent victimization interventions must be formally evaluated in order to ensure their effectiveness and direct generalizability. For example, the Olweus (2010) Bullying Prevention Program, which takes a comprehensive approach to bullying, has been evaluated in multiple studies, and has demonstrated reliability and validity.

5.8 Conclusion

The importance of this research lies in the fact that early detection, assessment, and treatment for victimization and health-risk behaviors during adolescence can prevent mental and physical health problems from affecting current and future quality of life. This study aimed to update the current state of knowledge by examining the effects multiple types of adolescent victimization and cumulative victimization have on mental health factors, participation in delinquent behaviors, and substance use and abuse. Several significant results reveal that adolescents who experience victimization are at risk for the adverse mental health, substance use and abuse, and participation in delinquent behaviors.

Additional health services research is necessary, particularly concerning the measurement and defining of present and emerging forms of adolescent victimization, continued examination of the causes, associations, and outcomes of victimization, longitudinal and qualitative studies, and the evaluation of intervention and preventive efforts. This study, along with this additional research, will result in advances that are

helpful to parents and guardians; policy-makers; school officials; health practitioners; and most of all, the adolescents who depend on society to provide an environment that promotes healthy growth and development.

REFERENCES

Academy Health. (2013). What is HSR. from https://www.academyhealth.org/About/content.cfm?ItemNumber=831&navItemNumber=514

Ackard, D. M., Neumark-Sztainer, D., & Hannan, P. (2003). Dating violence among a nationally representative sample of adolescent girls and boys: Associations with behavioral and mental health. *The Journal of Gender-specific Medicine, 6*(3), 39-48.

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology, 30*(1), 47-88.

Agnew, R. (2001). Building on the foundation of general strain theory: Specifying the types of strain most likely to lead to crime and delinquency. *Journal of Research in Crime & Delinquency, 38*(4), 319-361.

Agnew, R. (2002). Experienced, vicarious, and anticipated strain: An exploratory study on physical victimization and delinquency. *Justice Quarterly, 19*(4), 603-632. doi: 10.1080/07418820200095371

Agresti, A. (2002). *Categorical data analysis* (Vol. 359). Gainesville, FL: John Wiley & Sons.

American Psychiatric Association. (2008). Children and Trauma Update for Mental Health Professionals (Public Interest Directorate Children Youth and Families Office, Trans.): American Psychiatric Association,.

Anderson, N. B. (1998). Levels of analysis in health science: A framework for integrating sociobehavioral and biomedical research. *Annals of the New York Academy of Sciences, 840*(1), 563-576.

Anne L., E., Nayak, M. B., Korcha, R. A., & Greenfield, T. K. (2011). Child physical and sexual abuse: a comprehensive look at alcohol consumption patterns, consequences, and dependence from the National Alcohol Survey. *Alcoholism: Clinical and Experimental Research, 35*(2), 317-325.

Aoyama, I., & Talbert, T. L. (2010). Cyberbullying Internationally Increasing: New Challenges in the Technology Generation. In J. B.-S. R. Zheng, C. Drew (Ed.), *Adolescent Online Social Communication and Behavior: Relationship Formation on the Internet* (pp. 183-201). Hershey, PA: IGI Global.

Apter, A., Gothelf, D., Orbach, I., Weizman, R., Ratzoni, G., Har-Even, D. O. V., & Tyano, S. A. M. (1995). Correlation of suicidal and violent behavior in different diagnostic categories in hospitalized adolescent patients. *Journal of the American*

Academy of Child & Adolescent Psychiatry, 34(7), 912-918. doi: http://dx.doi.org/10.1097/00004583-199507000-00015

Arseneault, L., Bowes, L., & Shakoor, S. (2010). Bullying victimization in youths and mental health problems: 'Much ado about nothing'? *Psychological Medicine, 40*(05), 717-729. doi: 10.1017/S0033291709991383

Bahr, S. J., Hoffmann, J. P., & Yang, X. (2005). Parental and peer influences on the risk of adolescent drug use. *Journal of Primary Prevention, 26*(6), 529-551.

Bates, M. E., & Labouvie, E. W. (1997). Adolescent risk factors and the prediction of persistent alcohol and drug use into adulthood. *Alcoholism: Clinical & Experimental Research, 21*(5), 944-950.

Bauer, N. S., Herrenkohl, T. I., Lozano, P., Rivara, F. P., Hill, K. G., & Hawkins, J. D. (2006). Childhood bullying involvement and exposure to intimate partner violence. *Pediatrics, 118*(2), e235-e242.

Baum, A. (1990). Stress, intrusive imagery, and chronic distress. *Health Psychology, 9*(6), 653-675.

Berlan, E. D., Corliss, H. L., Field, A. E., Goodman, E., & S., Bryn A. (2010). Sexual orientation and bullying among adolescents in the growing up today study. *Journal of Adolescent Health, 46*(4), 366-371.

Berry, J. W., Kim, U., Power, S., Young, M., & Bujaki, M. (1989). Acculturation attitudes in plural societies. *Applied psychology, 38*(2), 185-206.

Black, M. C., Basile, K. C., Breiding, M. J., Smith, S. G., Walters, M. L., Merrick, M. T., . . . Stevens, M. R. . (2011). The National Intimate Partner and Sexual Violence Survey: 2010 Summary Report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Blum, R.W., & Qureshi, F. (2011). Morbidity and Mortality among Adolescents and Young Adults in the United States. http://www.jhsph.edu/research/centers-and-institutes/center-for-adolescent-health/az/_images/US%20Fact%20Sheet_FINAL.pdf

Boles, S. M., & Miotto, K. (2003). Substance abuse and violence: A review of the literature. *Aggression and Violent Behavior, 8*(2), 155-174.

Brady, S. S., Tschann, J. M., Pasch, L. A., Flores, E., & Ozer, E. J. (2009). Cognitive coping moderates the association between violent victimization by peers and substance use among adolescents. *Journal of Pediatric Psychology, 34*(3), 304-310.

Breiding, M. J., Black, M. C., & Ryan, G. W. (2008). Chronic disease and health risk behaviors associated with intimate partner violence—18 US states/territories, 2005. *Annals of Epidemiology, 18*(7), 538-544.

Brener, N. D., Billy, J. O. G., & Grady, W. R. (2003). Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. *Journal of Adolescent Health, 33*(6), 436-457.

Brener, N. D., Kann, L., McManus, T., Kinchen, S. A., Sundberg, E. C., & Ross, J. G. (2002). Reliability of the 1999 Youth Risk Behavior Survey Questionnaire. *Journal of Adolescent Health, 31*(4), 336-342.

Broidy, L., & Agnew, R. (1997). Gender and crime: A general strain theory perspective. *Journal of Research in Crime & Delinquency, 34*(3), 275-306.

Brown, S. A., & Tapert, S. F. (2004). Adolescence and the trajectory of alcohol use: Basic to clinical studies. *Annals of the New York Academy of Sciences, 1021*(1), 234-244.

Butt, S., Chou, S., & Browne, K. (2011). A rapid systematic review on the association between childhood physical and sexual abuse and illicit drug use among males. *Child Abuse Review, 20*(1), 6-38.

Campbell, J. C., Glass, N., Sharps, P. W., Laughon, K., & Bloom, T. (2007). Intimate partner homicide: Review and implications of research and policy. *Trauma Violence & Abuse, 8*(3), 246-269. doi: 10.1177/1524838007303505

Campbell, M. L. C., & Morrison, A. P. (2007). The relationship between bullying, psychotic-like experiences and appraisals in 14–16-year olds. *Behaviour Research & Therapy, 45*(7), 1579-1591.

Capaldi, D. M., Kim, H. K., & Shortt, J. W. (2007). Observed initiation and reciprocity of physical aggression in young, at-risk couples. *Journal of Family Violence, 22*(2), 101-111.

Carbone-Lopez, K., Esbensen, F., & Brick, B. T. (2010). Correlates and consequences of peer victimization: Gender differences in direct and indirect forms of bullying. *Youth violence and juvenile justice, 8*(4), 332-350.

Cash, S. J., & Bridge, J. A. (2009). Epidemiology of youth suicide and suicidal behavior. *Current opinion in pediatrics, 21*(5), 613-619.

Catalano, S., Smith, E., Snyder, H., & Rand, M. (2009). Female victims of violence: U.S. Department of Justice Publications and Materials.

CDC. (2010). Intimate Partner Violence: Definitions. Retrieved May 4, 2012, from http://www.cdc.gov/violenceprevention/intimatepartnerviolence/definitions.html

CDC. (2012a). Teen Dating Violence. Retrieved December 10, 2012, from http://www.cdc.gov/violenceprevention/intimatepartnerviolence/teen_dating_violence.html

CDC. (2012b). Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. Retrieved 2012 Oct 19, from Centers for Disease Control and Prevention, National Center for Injury Prevention and Control www.cdc.gov/injury

CDC. (2013a). National Initiative to Improve Adolescent Health. from http://www.cdc.gov/HealthyYouth/AdolescentHealth/NationalInitiative/

CDC. (2013b). Suicide Prevention from http://www.cdc.gov/violenceprevention/pub/youth_suicide.html

Chang, J. J., Chen, J. J., & Brownson, R. C. (2003). The role of repeat victimization in adolescent delinquent behaviors and recidivism. *Journal of Adolescent Health, 32*(4), 272-280.

Chapman, D. P., Perry, G. S., & Strine, T. W. (2005). The vital link between chronic disease and depressive disorders. *Preventing Chronic Disease (electronic resourse), 2*(1).

Coker, A. L., Davis, K. E., Arias, I., Desai, S., Sanderson, M., Brandt, H. M., & Smith, P. H. (2002). Physical and mental health effects of intimate partner violence for men and women. *American Journal of Preventive Medicine, 23*(4), 260-268.

Committee on Adolescent Health Care Services et al. (2009). *Adolescent health services: Missing opportunities*. Washington, DC: The National Academies Press.

Crick, N. R., & Zahn–Waxler, C. (2003). The development of psychopathology in females and males: Current progress and future challenges. *Development and Psychopathology, 15*(03), 719-742.

Crofford, L. J. (2007). Violence, stress, and somatic syndromes. *Trauma, Violence, & Abuse, 8*(3), 299-313.

Cuevas, C. A., Finkelhor, D., Turner, H. A. , & Ormrod, R. K. (2007). Juvenile delinquency and victimization a theoretical typology. *Journal of Interpersonal Violence, 22*(12), 1581-1602.

Cyberbullying Research Center. (2013). Summary of our research (2004-2010). Retrieved September 15, 2013, from http://cyberbullying.us/summary-of-our-research/

Desai, R. A., Goulet, J. L., Robbins, J., Chapman, J. F., Migdole, S. J., & Hoge, M. A. (2006). Mental health care in juvenile detention facilities: A review. *Journal of the American Academy of Psychiatry and the Law Online, 34*(2), 204-214.

Desrochers, J. E., & Houck, G. M. (2013). *Depression in children and adolescents: Guidelines for school practice*. Silver Spring, MD: National Association of School Nurses.

DeVoe, J. F., & Murphy, C. (2011). Student reports of bullying and cyber-bullying: Results from the 2009 school crime supplement to the National Crime Victimization Survey. Washington, DC: US Department of Education National Center for Education Statistics.

Dignan, J. (2005). *Understanding victims and restorative justice*. Berkshire, England: McGraw-Hill.

Dinkes, R. (2009). Indicators of School Crime and Safety (2008) (I. o. E. S. National Center for Education Statistics, Trans.). Washington, DC: U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice.

Eaton, D. K., Davis, K. S., Barrios, L., Brener, N. D., & Noonan, R. K. (2007). Associations of dating violence victimization with lifetime participation, co-occurrence, and early initiation of risk behaviors among US high school students. *Journal of Interpersonal Violence, 22*(5), 585-602.

Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., . . . Wechsler, H. (2012). Youth risk behavior surveillance - United States, 2011. *Mortality & Morbidity Weekly Report (MMWR), 61*(4), 1-162.

Elder, J. P., Lytle, L., Sallis, J. F., Young, D. R., Steckler, A., Simons-Morton, D., . . . Lohman, T. (2007). A description of the social–ecological framework used in the trial of activity for adolescent girls (TAAG). *Health Education Research, 22*(2), 155-165.

Elliott, D.S., Wilson, W.J., Huizinga, D., Sampson, R.J., Elliott, A., & Rankin, B. (1996). The effects of neighborhood disadvantage on adolescent development. *Journal of Research in Crime & Delinquency, 33*(4), 389-426.

Esbensen, F., & Carson, D. C. (2009). Consequences of being bullied results from a longitudinal assessment of bullying victimization in a multisite sample of American students. *Youth & Society, 41*(2), 209-233.

Espelage, D. L., Low, S., & De La Rue, L. (2012). Relations between peer victimization subtypes, family violence, and psychological outcomes during early adolescence. *Psychology of Violence, 2*(4), 313.

Espelage, D. L., & Swearer, S. M. (2004). *Bullying in American schools: A social-ecological perspective on prevention and intervention*. Mahwah, NJ: Routledge.

Estroff, T. W. (2008). *Manual of adolescent substance abuse treatment*. Washington, DC: American Psychiatric Publishing.

Evans, W. P., Marte, R. M., Betts, S., & Silliman, B. (2001). Adolescent suicide risk and peer-related violent behaviors and victimization. *Journal of Interpersonal Violence, 16*(12), 1330-1348.

Fagan, A. A. (2003). The short- and long-term effects of adolescent violent victimization experienced within the family and community. *Violence & Victims, 18*(4), 445-459.

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175-191.

Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect, 31*(1), 7-26.

Finkelhor, D., Turner, H., Ormrod, R., & Hamby, S. L. (2009). Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics, 124*(5), 1411-1423.

Flannery, D. J., Singer, M. I., & Wester, K. (2001). Violence exposure, psychological trauma, and suicide risk in a community sample of dangerously violent adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(4), 435-442. doi: http://dx.doi.org/10.1097/00004583-200104000-00012

Ford, J. D., Elhai, J. D., Connor, D. F., & Frueh, B. C. (2010). Poly-Victimization and risk of posttraumatic, depressive, and substance use disorders and involvement in delinquency in a national sample of adolescents. *Journal of Adolescent Health, 46*(6), 545-552. doi: http://dx.doi.org/10.1016/j.jadohealth.2009.11.212

Fortuna, L. R., Perez, D. J., Canino, G., Sribney, W., & Alegria, M. (2007). Prevalence and correlates of lifetime suicidal ideation and attempts among Latino subgroups in the United States. *The Journal of Clinical Psychiatry, 68*(4), 572.

Foshee, V. A., & Reyes, H. L. M. (2012). Dating abuse: Prevalence, consequences, and predictors *Encyclopedia of Adolescence* (pp. 602-615). Manhattan, NY Springer.

Foster, J. D., Kuperminc, G. P., & Price, A. W. (2004). Gender differences in posttraumatic stress and related symptoms among inner-city minority youth exposed to community violence. *Journal of Youth & Adolescence, 33*(1), 59-69. doi: 10.1023/a:1027386430859

Funk, R. R., McDermeit, M., Godley, S. H., & Adams, L. (2003). Maltreatment issues by level of adolescent substance abuse treatment: The extent of the problem at intake and relationship to early outcomes. *Child Maltreatment, 8*(1), 36-45.

Garbarino, J., & deLara, E. (2002). *And words can hurt forever: How to protect adolescents from bullying, harassment, and emotional violence*. New York, NY: Simon and Schuster.

Gauvain, M., & Cole, M. (2004). *Readings on the development of children*. New York, NY: Worth Publishers.

Ge, X., Natsuaki, M. N., & Conger, R. D. (2006). Trajectories of depressive symptoms and stressful life events among male and female adolescents in divorced and nondivorced families. *Development and Psychopathology, 18*(1), 253-273.

Giedd, J. N., Blumenthal, J., Jeffries, N. O., Castellanos, F. X., Liu, H., Zijdenbos, A., . . . Rapoport, J. L. (1999). Brain development during childhood and adolescence: A longitudinal MRI study. *Nature Neuroscience, 2*(10), 861-863.

Giordano, P. (2007). *Recent Research on Gender and Adolescent Relationships: Implications for Teen Dating Violence Research/ Prevention*. Presentation at the U.S. Departments of Health and Human Services and Justice Workshop on Teen Dating Violence: Developing a Research Agenda to Meet Practice Needs.

Gladstone, G. L., Parker, G. B., & Malhi, G. S. . (2006). Do bullied children become anxious and depressed adults?: A cross-sectional investigation of the correlates of bullying and anxious depression. *The Journal of nervous and mental disease, 194*(3), 201-208.

Glew, G., Rivara, F., & Feudtner, C. (2000). Bullying: Children hurting children. *Pediatrics in Review, 21*(6), 183-190.

Gover, A. R. (2004). Risky lifestyles and dating violence: A theoretical test of violent victimization. *Journal of Criminal Justice, 32*(2), 171-180. doi: http://dx.doi.org/10.1016/j.jcrimjus.2003.12.007

Gregory, A., Cornell, D., Fan, X., Sheras, P., Shih, T., & Huang, F. . (2010). Authoritative school discipline: High school practices associated with lower bullying and victimization. *Journal of Educational Psychology, 102*(2), 483.

Guerra, N. G., Williams, K. R., & Sadek, S. (2011). Understanding bullying and victimization during childhood and adolescence: A mixed methods study. *Child Development, 82*(1), 295-310.

Hankin, B. L., Mermelstein, R., & Roesch, L. (2007). Sex differences in adolescent depression: Stress exposure and reactivity models. *Child Development, 78*(1), 279-295.

Harrison, P. A., Fulkerson, J. A., & Beebe, T. J. (1997). Multiple substance use among adolescent physical and sexual abuse victims. *Child Abuse & Neglect, 21*(6), 529-539.

Hay, C., & Evans, M. M. (2006). Violent victimization and involvement in delinquency: Examining predictions from general strain theory. *Journal of Criminal Justice, 34*(3), 261-274. doi: http://dx.doi.org/10.1016/j.jcrimjus.2006.03.005

Haynie, D. L., Petts, R. J., Maimon, D., & Piquero, A. R. (2009). Exposure to violence in adolescence and precocious role exits. *Journal of Youth and Adolescence, 38*(3), 269-286.

Healthy People 2020. (2013). About Healthy People. from http://www.healthypeople.gov/2020/about/default.aspx

Heise, L., & Garcia-Moreno, C. (2002). Violence by intimate partners. In E. G. Krug, J. A. Mercy, L. L. Dahlberg & A. B. Zwi (Eds.), *World report on violence and health* (pp. 87–121). Geneva (Switzerland): World Health Organization.

Hinduja, S., & Patchin, J. W. (2007). Offline consequences of online victimization: School violence and delinquency. *Journal of School Violence, 6*(3), 89-112.

Hinduja, S., & Patchin, J. W. (2008a). *Bullying beyond the schoolyard: Preventing and responding to cyberbullying*. Thousand Oaks, CA: Corwin.

Hinduja, S., & Patchin, J. W. (2008b). Cyberbullying: An exploratory analysis of factors related to offending and victimization. *Deviant Behavior, 29*(2), 129-156. doi: 10.1080/01639620701457816

Hinduja, S., & Patchin, J. W. (2011). Electronic dating violence. Thousand Oaks, CA: Cyberbullying Research Center.

Hinduja, S., & Patchin, J. W. . (2011). *State cyberbullying laws: A brief review of state cyberbullying laws and policies*. Thousand Oaks, CA: Cyberbullying Research Center.

Hovell, M. F., Hillman, E. R., Blumberg, E., Sipan, C., Atkins, C., Hofstetter, C. R., & Myers, C. A. (1994). A behavioral ecological model of adolescent sexual development: A template for aids prevention. *Journal of Sex Research, 31*(4), 267-281.

Howard, D., Qiu, Y., & Boekeloo, B. (2003). Personal and social contextual correlates of adolescent dating violence. *Journal of Adolescent Health, 33*(1), 9-17. doi: http://dx.doi.org/10.1016/S1054-139X(03)00061-2

Johnson, D. H. (1999). The insignificance of statistical significance testing. *The Journal of Wildlife Management, 63*(3), 763-772.

Johnston, L. (2010). *Monitoring the future: National results on adolescent drug use: Overview of key findings*: DIANE Publishing.

Jonas, B. S., Franks, P., & Ingram, D. D. (1997). Are symptoms of anxiety and depression risk factors for hypertension? Longitudinal evidence from the National Health and Nutrition Examination Survey I Epidemiologic Follow-up Study. *Archives of Family Medicine, 6*(1), 43-49.

Jonas, B. S., & Mussolino, M. E. (2000). Symptoms of depression as a prospective risk factor for stroke. *Psychosomatic Medicine, 62*(4), 463-471.

Juvonen, J., Graham, S., & Schuster, M. A. (2003). Bullying among young adolescents: the strong, the weak, and the troubled. *Pediatrics, 112*(6), 1231-1237.

Juvonen, J., & Gross, E. F. (2008). Extending the school grounds?—Bullying experiences in cyberspace. *Journal of School health, 78*(9), 496-505.

Kessler, R. C., Berglund, P., Borges, G., Nock, M., & Wang, P. S. (2005). Trends in suicide ideation, plans, gestures, and attempts in the United States, 1990-1992 to 2001-2003. *JAMA: The Journal of the American Medical Association, 293*(20), 2487-2495. doi: 10.1001/jama.293.20.2487

Khansari, D. N., Murgo, A. J., & Faith, R. E. (1990). Effects of stress on the immune system. *Immunology Today, 11*, 170-175.

Kilpatrick, D. G., Smith, D. W. , & Saunders, B. E. (2003). Youth victimization: Prevalence and implications. Washington, DC: US Department of Justice, Office of Justice Programs, National Institute of Justice.

Knopf, D., Park, M.J. , & Mulye, T. P. (2008). The mental health of adolescents: A national profile, 2008: National Adolescent Health Information Center, University of California, San Francisco, San Francisco, CA

Kodjo, C. M., Auinger, P., & Ryan, S. A. (2003). Demographic, intrinsic, and extrinsic factors associated with weapon carrying at school. *Archives of Pediatrics & Adolescent Medicine, 157*(1), 96.

Kowalski, R. M., & Limber, S. P. (2007). Electronic bullying among middle school students. *Journal of Adolescent Health, 41*(6), S22-S30.

Krug, E. G., Mercy, J. A., Dahlberg, L. L., & Zwi, A. B. (2002). The world report on violence and health. *The Lancet, 360*(9339), 1083-1088.

Kumpfer, K. L., & Turner, C. W. (1990). The social ecology model of adolescent substance abuse: Implications for prevention. *Substance Use & Misuse, 25*(S4), 435-463.

Langhinrichsen-Rohling, J., Friend, J., & Powell, A. (2009). Adolescent suicide, gender, and culture: A rate and risk factor analysis. *Aggression and Violent Behavior, 14*(5), 402-414. doi: http://dx.doi.org/10.1016/j.avb.2009.06.010

Lataster, T., van Os, J., Drukker, M., Henquet, C., Feron, F., Gunther, N., & Myin-Germeys, I. (2006). Childhood victimisation and developmental expression of non-clinical delusional ideation and hallucinatory experiences. *Social Psychiatry and Psychiatric Epidemiology, 41*(6), 423-428.

Lavine, R. (1997). Psychopharmacological treatment of aggression and violence in the substance using population. *Journal of Psychoactive Drugs, 29*(4), 320-329.

Lenhart, A. (2007). *Cyberbullying and online teens*: Pew Internet & American Life Project.

Lenhart, A., Ling, R., Campbell, S., & Purcell, K. (2010). Teens and mobile phones *Pew Internet and American Life Project* (Vol. 20). Washington, DC: Pew Research Center

Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). Social media and young adults *Pew Internet & American Life Project* (Vol. 3). Washington, DC: Pew Research Center

Leserman, J., & Drossman, D. A. (2007). Relationship of abuse history to functional gastrointestinal disorders and symptoms some possible mediating mechanisms. *Trauma, Violence, & Abuse, 8*(3), 331-343.

Levit, K. R., Stranges, E., Coffey, R. M., Kassed, C., Mark, T. L., Buck, J. A., & Vandivort-Warren, R. (2013). Current and future funding sources for specialty mental health and substance abuse treatment providers. *Psychiatric Services, 64*(6), 512-519.

Limber, S. P., Olweus, D., & Luxenberg, H. (2013). Bullying in US Schools.

Madden, M., Lenhart, A., Duggan, M., Cortesi, S., & Gasser, U. (2013). *Teens and technology 2013*: Pew Internet & American Life Project.

Max, W., Rice, D. P., Finkelstein, E., Bardwell, R. A., & Leadbetter, S. (2004). The economic toll of intimate partner violence against women in the United States. *Violence Victims 19*(3), 259-272.

McCambridge, J., McAlaney, J., & Rowe, R. (2011). Adult consequences of late adolescent alcohol consumption: a systematic review of cohort studies. *PLoS medicine, 8*(2).

McGuinness, T. M., Dyer, J. G., & Wade, E. H. (2012). Gender differences in adolescent depression. *Journal of psychosocial nursing and mental health services, 50*(12), 17-20.

McKenzie, M., Jorm, A. F., Romaniuk, H., Olsson, C. A., & Patton, G. C. (2011). Association of adolescent symptoms of depression and anxiety with alcohol use disorders in young adulthood: Findings from the Victorian Adolescent Health Cohort Study. *Medical Journal of Australia, 195*(3), S27-S30.

McMurtry, R., & Curling, A. (2008). *The Review of the Roots of Youth Violence: Literature reviews*: [Government of] Ontario.

Menard, S. W. (2002). Short and long-term consequences of adolescent victimization. Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Mills, C., Stephan, S.H., Moore, E., Weist, M. D., Daly, B. P., & Edwards, M. (2006). The President's New Freedom Commission: Capitalizing on opportunities to advance school-based mental health services. *Clinical Child and Family Psychology Review, 9*(3-4), 149-161.

Mouttapa, M., Valente, T., Gallaher, P., Rohrbach, L. A., & Unger, J. B. (2004). Social network predictors of bullying and victimization. *Adolescence-San Diego, 39*(154), 315-336.

Mulford, C., & Giordano, P. C. (2008). Teen dating violence: A closer look at adolescent romantic relationships. *National Institute of Justice Journal, 261*, 34-40.

National Commission on Correctional Health Care. (1995). Standards for Health Services in Juvenile Detention and Confinement Facilities. Chicago, IL

NCAVP. (2013). NCAVP's 2012 report on intimate partner violence against LGBTQ and HIV-affected people in the United States.

Newman-Carlson, D., Horne, A. M. , & Bartolomucci, C. L. (2000). *Bully busters: A teacher's manual for helping bullies, victims, and bystanders:[Grades 6-8]*. Champaign, IL: Research Press.

O'Brennan, L. M., Bradshaw, C. P., & Sawyer, A. L. (2009). Examining developmental differences in the social-emotional problems among frequent bullies, victims, and bully/victims. *Psychology in the Schools, 46*(2), 100-115. doi: 10.1002/pits.20357

O'Leary, K .D., Smith Slep, A. M., Avery-Leaf, S., & Cascardi, M. (2008). Gender differences in dating aggression among multiethnic high school students. *Journal of Adolescent Health, 42*(5), 473-479.

Olweus, D. (1993). *Bullying at School: What We Know and What We Can Do*. Malden, MA: Wiley.

Olweus, D., & Limber, S. P. (2010). Olweus bullying prevention program. In S. R. Jimerson, Swearer, S. M., & Espelage, D. L. (Ed.), *The Handbook of Bullying in Schools: An International Perspective* (pp. 377-401). London, England Routledge/Taylor & Francis Group.

Ozer, E. M., Zahnd, E. G., Adams, S. H., Husting, S. R., Wibbelsman, C. J., Norman, K. P., & Smiga, S. M. (2009). Are adolescents being screened for emotional distress in primary care? *Journal of Adolescent Health, 44*(6), 520-527. doi: http://dx.doi.org/10.1016/j.jadohealth.2008.12.016

Patchin, J. W., & Hinduja, S. (2010). Cyberbullying and SelfEsteem. *Journal of School Health, 80*(12), 614-621.

Patchin, J. W., Huebner, B. M., McCluskey, J. D., Varano, S. P., & Bynum, T. S. (2006). Exposure to community violence and childhood delinquency. *Crime & Delinquency, 52*(2), 307-332.

Patrick, M. E., Schulenberg, J. E., O'Malley, P. M., Johnston, L. D., & Bachman, J. G. (2011). Adolescents' reported reasons for alcohol and marijuana use as predictors of substance use and problems in adulthood. *Journal of Studies on Alcohol and Drugs, 72*(1), 106.

Patrick, M. E., Wray-Lake, L., Finlay, A. K., & Maggs, J. L. (2010). The long arm of expectancies: Adolescent alcohol expectancies predict adult alcohol use. *Alcohol and Alcoholism, 45*(1), 17-24.

Peña, J. B., Wyman, P. A., Brown, C. H., Matthieu, M. M., Olivares, T. E., Hartel, D., & Zayas, L. H. . (2008). Immigration generation status and its association with suicide attempts, substance use, and depressive symptoms among Latino adolescents in the USA. *Prevention Science, 9*(4), 299-310.

Pepler, D., Jiang, D., Craig, W., & Connolly, J. (2008). Developmental trajectories of bullying and associated factors. *Child Development, 79*(2), 325-338.

Perry, B. D. (2001). The Cost of Maltreatment: Who Pays? We All Do. In K. Franey, Geffner, R. and Falconer, R. (Ed.), *The neuroarcheology of childhood maltreatment: The neurodevelopmental costs of adverse childhood events* (pp. 15-37). San Diego, CA: Haworth Press.

Pickett, W., Craig, W., Harel, Y., Cunningham, J., Simpson, K., Molcho, M., . . . Currie, C. E. (2005). Cross-national study of fighting and weapon carrying as determinants of adolescent injury. *Pediatrics, 116*(6), e855-e863.

Plichta, S. B. (2004). Intimate partner violence and physical health consequences policy and practice implications. *Journal of Interpersonal Violence, 19*(11), 1296-1323.

Reingle, J. M., Staras, S. A. S., Jennings, W. G., Branchini, J., & Maldonado-Molina, M. M. (2012). The relationship between marijuana use and intimate partner violence in a nationally representative, longitudinal sample. *Journal of Interpersonal Violence, 27*(8), 1562-1578.

Resnick, M. D., Ireland, M., & Borowsky, I. (2004). Youth violence perpetration: What protects? What predicts? Findings from the National Longitudinal Study of Adolescent Health. *Journal of Adolescent Health, 35*(5), 424. e421-424. e410.

Rew, L., Thomas, N., Horner, S. D., Resnick, M. D., & Beuhring, T. (2001). Correlates of recent suicide attempts in a triethnic group of adolescents. *Journal of Nursing Scholarship, 33*(4), 361-367. doi: 10.1111/j.1547-5069.2001.00361.x

Riner, M. E., & Saywell, R. M. (2002). Development of the social ecology model of adolescent interpersonal violence prevention (SEMAIVP). *Journal of School Health, 72*(2), 65-70.

Robers, S., Kemp, J., & Truman, J. (2013). Indicators of school crime and safety: 2012 NCES 2013-036/NCJ 241446. Washington, DC: National Center for Education Statistics, U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice.

Roberts, T. A., Klein, J. D., & Fisher, S. (2003). Longitudinal effect of intimate partner abuse on high-risk behavior among adolescents. *Archives of Pediatrics & Adolescent Medicine, 157*(9), 875-881.

Rusby, J. C., Forrester, K. K., Biglan, A., & Metzler, C. W. (2005). Relationships between peer harassment and adolescent problem behaviors. *The Journal of Early Adolescence, 25*(4), 453-477.

Rushton, J. L., Forcier, M., & Schectman, R. M. (2002). Epidemiology of depressive symptoms in the National Longitudinal Study of Adolescent Health. *J Am Acad Child Adolesc Psychiatry, 41*(2), 199-205. doi: 10.1097/00004583-200202000-00014

Rutter, M. (2005). Environmentally mediated risks for psychopathology: Research strategies and findings. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(1), 3-18.

Saltzman, L. E., Fanslow, J. L., McMahon, P. M., & Shelley, G. A. (2002). Intimate partner violence surveillance: Uniform definitions and recommended data elements. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control

Sawyer, A. L., Bradshaw, C. P., & O'Brennan, L. M. (2008). Examining ethnic, gender, and developmental differences in the way children report being a victim of "bullying" on self-report measures. *Journal of Adolescent Health, 43*(2), 106-114. doi: http://dx.doi.org/10.1016/j.jadohealth.2007.12.011

Seals, D., & Young, J. (2002). Bullying and victimization: Prevalence and relationship to gender, grade level, ethnicity, self-esteem, and depression. *Adolescence, 38*(152), 735-747.

Sen, B. (2004). Adolescent propensity for depressed mood and help seeking: Race and gender differences. *Journal of Mental Health Policy and Economics, 7*(3), 133-145.

Skowyra, K., & Cocozza, J. J. (2006). *A blueprint for change: Improving the system response to youth with mental health needs involved with the juvenile justice system*. Delmar, NY: National Center for Mental Health and Juvenile Justice

Smith, P. H., White, J. W., & Holland, L. J. (2003). A longitudinal perspective on dating violence among adolescent and college-age women. *American Journal of Public Health, 93*(7), 1104-1109.

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *J Child Psychol Psychiatry, 49*(4), 376-385. doi: 10.1111/j.1469-7610.2007.01846.x

Smith, R.G., & Gross, A. M. (2006). Bullying: Prevalence and the effect of age and gender. *Child & family behavior therapy, 28*(4), 13-37.

Soriano, F. I., Rivera, L. M., Williams, K. J., Daley, S. P., & Reznik, V. M. (2004). Navigating between cultures: The role of culture in youth violence. *Journal of Adolescent Health, 34*(3), 169-176. doi: http://dx.doi.org/10.1016/j.jadohealth.2003.07.015

Spear, L. (2000). Modeling adolescent development and alcohol use in animals. *Alcohol Research & Health, 24*(2), 115-123.

Spear, L. P., & Varlinskaya, E. I. (2005). Adolescence *Recent Developments in Alcoholism* (pp. 143-159). New York, NY: Springer.

Spriggs, A. L., Iannotti, R. J., Nansel, T. R., & Haynie, D. L. (2007). Adolescent bullying involvement and perceived family, peer and school relations: commonalities and differences across race/ethnicity. *Journal of Adolescent Health, 41*(3), 283-293. doi: http://dx.doi.org/10.1016/j.jadohealth.2007.04.009

Squeglia, L. M., Jacobus, J., & Tapert, S. F. (2009). The influence of substance use on adolescent brain development. *Clinical EEG & Neuroscience, 40*(1), 31-38.

Stein, J. A., Dukes, R. L., & Warren, J. I. (2007). Adolescent male bullies, victims, and bully-victims: A comparison of psychosocial and behavioral characteristics. *Journal of Pediatric Psychology, 32*(3), 273-282.

Stevenson, A., & Brown, L. (2007). *Shorter Oxford English Dictionary: On Historical Principles*. New York, NY: Oxford University Press, Incorporated.

Sullivan, T. N., Farrell, A. D., & Kliewer, W. (2006). Peer victimization in early adolescence: Association between physical and relational victimization and drug use, aggression, and delinquent behaviors among urban middle school students. *Development & Psychopathology, 18*(01), 119-137. doi: doi:10.1017/S095457940606007X

Svensson, R. (2003). Gender differences in adolescent drug use the impact of parental monitoring and peer deviance. *Youth & Society, 34*(3), 300-329.

Swearer, S. M. , & Doll, B. (2001). Bullying in schools: An ecological framework. *Journal of Emotional Abuse, 2*(2-3), 7-23.

Swearer, S. M. , Turner, R. K. , Givens, J. E., & Pollack, W. S. (2008). "You're So Gay!": Do different forms of bullying matter for adolescent males? *School Psychology Review, 37*(2), 160-173.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston, MA: Pearson/Allyn & Bacon.

Testa, M., Livingston, J. A., & Leonard, K. E. (2003). Women's substance use and experiences of intimate partner violence: A longitudinal investigation among a community sample. *Addictive Behaviors, 28*(9), 1649-1664.

The National Conference of State Legislatures (NCSL). (2013). State Cyberstalking And Cyberharassment Laws. from http://www.ncsl.org/research/telecommunications-and-information-technology/cyberstalking-and-cyberharassment-laws.aspx

The President's New Freedom Commission on Mental Health. (2003). Achieving the promise: Transforming mental health care in America. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration.

Thompson, E. A., Mazza, J. J., Herting, J. R., Randell, B. P., & Eggert, L. L. (2005). The mediating roles of anxiety, depression, and hopelessness on adolescent suicidal behaviors. *Suicide and Life-Threatening Behavior, 35*(1), 14-34.

Tjaden, P., & Thoennes, N. (2000). Full report of the prevalence, incidence, and consequences of violence against women: Findngs from the National Violence Against Women Survey (pp. 71). Washington, DC: United States Department of Justice.

Twyman, K., Saylor, C., Taylor, L. A., & Comeaux, C. (2010). Comparing children and adolescents engaged in cyberbullying to matched peers. *Cyberpsychology, Behavior, and Social Networking, 13*(2), 195-199.

United States Office of the Surgeon General. (2001). *Youth violence: A report of the Surgeon General*: Dept. of Health and Human Services, U.S. Public Health Service.

USDHHS. (2013a). Policies and Laws. Retrieved December 10, 2011, from http://www.stopbullying.gov/laws/

USDHHS. (2013b). What is Bullying? Retrieved December 10, 2011, from http://www.stopbullying.gov/what-is-bullying/index.html

USDHHS. (2013c). What is Cyberbullying. from http://www.stopbullying.gov/cyberbullying/what-is-it/index.html

Warshaw, C., Brashler, P., & Gil, J. (2009). Mental health consequences of intimate partner violence *Intimate partner violence: A health-based perspective* (pp. 147-170).

Waters, S. K., Cross, D. S., & Runions, K. (2009). Social and ecological structures supporting adolescent connectedness to school: A theoretical model. *Journal of School Health, 79*(11), 516-524. doi: 10.1111/j.1746-1561.2009.00443.x

Weaver, C. M., Borkowski, J. G., & Whitman, T. L. (2008). Violence breeds violence: Childhood exposure and adolescent conduct problems. *Journal of Community Psychology, 36*(1), 96-112. doi: 10.1002/jcop.20219

Wills, T. A., Sandy, J. M., Yaeger, A. M., Cleary, S. D., & Shinar, O. (2001). Coping dimensions, life stress, and adolescent substance use: A latent growth analysis. *Journal of Abnormal Psychology, 110*(2), 309-323.

Wolak, J., Finkelhor, D., Mitchell, K. J., & Ybarra, M. L. (2010). Online "predators" and their victims. *Psychology of Violence, 1*, 13-35.

Wolitzky-Taylor, K. B., Ruggiero, K. J., Danielson, C. K., Resnick, H. S., Hanson, R. F., Smith, D. W., . . . Kilpatrick, D. G. (2008). Prevalence and correlates of dating violence in a national sample of adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*(7), 755-762. doi: http://dx.doi.org/10.1097/CHI.0b013e318172ef5f

Wright, E. M. , & Vicniere, M. J. (2010). Economic costs of victimization. In S. P. L. B.S. Fisher (Ed.), *Encyclopedia of Victimology and Crime Prevention* (pp. 343-346). Thousand Oaks, CA: Sage Publications.

Wright, V. H., Burnham, J. J., Inman, C. T., & Ogorchock, H. N. . (2009). Cyberbullying: Using Virtual Scenarios to Educate and Raise Awareness. *Journal of Computing in Teacher Education, 26*(1).

Ybarra, M. L. (2004). Linkages between depressive symptomatology and Internet harassment among young regular Internet users. *CyberPsychology & Behavior, 7*(2), 247-257.

Ybarra, M. L., Diener-West, M., & Leaf, P. J. (2007). Examining the overlap in internet harassment and school bullying: Implications for school intervention. *Journal of Adolescent Health, 41*(6, Supplement), S42-S50. doi: http://dx.doi.org/10.1016/j.jadohealth.2007.09.004

Zeigler, D. W., Wang, C. C., Yoast, R. A., Dickinson, B. D., McCaffree, M. , Robinowitz, C. B., & Sterling, M. L. (2005). The neurocognitive effects of alcohol on adolescents and college students. *Preventive Medicine, 40*(1), 23-32.

Zhang, J., Truman, J., Snyder, T. D., & Robers, S. (2012). Indicators of school crime & safety, 2011. Washington, DC: National Center for Education Statistics (NCES),

Institute of Education Sciences (IES), in the U.S. Department of Education, and the Bureau of Justice Statistics (BJS) in the U.S. Department of Justice.