BULLYING, WEAPONS CARRYING, AND MENTAL HEALTH OUTCOMES

AMONG U.S. HIGH SCHOOL STUDENTS

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DEDICATION

To Devon, my academic mentor who has given me so much guidance and support throughout my graduate career. My life changed the day I sat down in your undergraduate statistics course in the spring of 2016 and I will be forever grateful.

To Mom and Dad, thank you for teaching me the value of hard work and dedication and always reminding me that I can make a difference. My main goal in life is to make the world a better place and it is you who instilled this desire to serve in me.

To adolescents and adults across the world, may this research inform you about the consequences of bullying and how you can play a role in keeping those around you safe. Remember to be kind, reach out a hand to those who need help, and know that you are never, ever alone.

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Using data from the 2007-2017 cycles of the national Youth Risk Behavior Survey (YRBS), this researcher aimed to understand how weapons carrying mediates the association between bullying and mental health outcomes. I dichotomized four bullying outcomes to create one new carried a weapon after bullied (CWB) (no/yes; e.g. did not carry a weapon post-bullying vs. did carry a weapon post-bullying) for each bullying type. Mental health outcomes included (all dichotomized, past 2 weeks, no/yes): felt sad or hopeless, seriously considered suicide, had a plan for suicide and attempted suicide. I used descriptive statistics and binary logistic regression adjusted for YRBS sampling methods and weighting (Stata 15.0). Initial results showed that weapons carrying has a complex relationship with mental health after bullying. One notable finding is that that individuals who had been in a physical fight were the most likely to carry a weapon (N = 268), followed by those who had been threatened at school (N = 233). Additionally, more students who had been bullied at school (N = 185) carried a weapon than those who were victims of cyberbullying (N = 166). Another interesting result found that across all bullying types, males were 2 to 3 times more likely to carrying a weapon as a result of being bullied. In terms of mental health, being threatened at school was the most significant bullying type in relation to suicidal ideation.

Devon J. Hensel, MS, PhD, Chair

TABLE OF CONTENTS

CHAPTER 1: OVERVIEW

Introduction

Bullying, a pervasive adolescent health concern, is defined by the Centers for

Disease Control and Prevention (CDC) as:

> Any unwanted aggressive behavior(s) by another youth or group of youths
> who are not siblings or current dating partners that involves an observed or
> perceived power imbalance and is repeated multiple times or is highly
> likely to be repeated (Pham, Schapiro, John & Adesman, 2017).

One out of every five (20.8%) of students report being bullied and the number of

adolescents reporting an instance of bullying doubled between 2003 and 2012 (Sedghi,

2013; U.S. Department of Education, 2016). Experiences of bullying are not the only

concerning statistics. According to research by the American Society for the Positive

Care of Children (2018), 70.6% of students have reported witnessing bullying at school,

as have 70.4% of school staff. More specifically, in 2017, 62% of staff members

witnessed bullying two or more times a month and 41% saw it once a week or more

(American Society, 2018).

Being bullied is associated with a wide variety of adverse academic, social, and

health outcomes. It can lead to school disengagement, spotty attendance, dislike of

school, and poor grades, all of which can be detrimental to academic achievement

(Kowalksi & Limber, 2013; Turner, Exum, Brame, & Holt, 2013). Socially, victims of

bullying may suffer from anti-social personality disorder, have difficulty making or

keeping friends, and/or experience psychotic episodes (Lereya, Copeland, Zammit, &

Wolke, 2015; Wolke & Lereya, 2015). A few of the consequential health effects that

bullying victims may experience include stomach pain, sleep problems, headaches,

tension, bedwetting, fatigue, and poor appetite (Kowalksi & Limber, 2013; Perlus,

Brooks-Russell, Wang, & Iannotti, 2014; Wolke & Lereya, 2015). Smoking and

substance abuse (alcohol and drugs) also tends to be more frequent among victims of

bullying (Pham & Adesman, 2015; Wolke & Lereya, 2015). These findings are

supported by the 2017 Report on "Indicators of School Crime and Safety," which notes:

> Of students who reported being bullied at school during the school year in
> 2015, about 19% reported that bullying had somewhat or a lot of negative
> effect on how they felt about themselves, 14% reported that bullying had
> somewhat or a lot of negative effect on their relationships with friends or
> family and on their school work, and 9% reported that bullying had
> somewhat or a lot of negative effect on their physical health (Bureau of
> Justice Statistics, 2017, p. 9).

Both the prevalence and long lasting impact of bullying have spurred a mission

among researchers to better understand this phenomenon and how to effect change. As a

result, a radical switch has recently occurred in how researchers view bullying during

adolescence:

> Bullying is no longer seen as conflictual interactions that help youth
> become tougher, and it no longer is viewed as inevitable or beneficial…
> research has documented—both concurrently and longitudinally—adverse
> consequences of being bullied at school and online in children's and
> adolescents' lives, including psychological problems and physical health
> symptoms (Gini & Espelage, 2014, p. 545).

This change in perspective has led to more effective and expansive research

efforts, including focuses on the relationship between being bullied and academic

achievement, mental health, and suicide. These considerations are important for

understanding adolescent success and well-being, but they do not address important

behavioral outcomes, most prominent of which is violent behavior by bullying victims.

As such, bullying researchers have turned their attention to this line of inquiry. The

examination of the relationship between having been bullied and violent behavior also

stems from the critical need for answers and solutions, as in the United States "more than

187,000 students have been exposed to gun violence at school since Columbine" (Cox & Rich, 2018). Additionally, it is widely known that many perpetrators of recent school violence were once bullied themselves (Pham et al., 2017). Guided by these facts, researchers to date understand that violent behavior is often retaliatory and have established a link between bullying and general weapons carrying, as well as bullying and poor mental health. However, it remains unclear how weapons carrying varies across different types of bullying, how this variation links to mental health outcomes, and how these patterns differ by gender, age, race, and sexual orientation. This is a clear gap in the research – a gap that needs and deserves urgent action. This study will address the current hole in the literature by contributing valuable findings on how weapons carrying mediates the association between the different types of bullying and mental health outcomes among various adolescent subpopulations. Additionally, the findings of this study will be publicly available to help school and community leaders develop more strategic and effective bullying interventions for today's youth. The serious consequences of bullying are undeniable and it is the researcher's hope that this work will help prevent future tragedies resulting from bullying during adolescence.

Background

Peer bullying did not emerge as a research topic until the late 1960s and early 1970s. This initial work was generated in Sweden with the term "mobbing" being used to describe the act of bullying or specifically "the action of a school class or a group of soldiers ganging up against a deviating individual" (Olweus, 2013, p. 753). The concept of "mobbing" was discussed and debated at length between researchers and though it is no longer used, it paved the way for current academic and social research on bullying.

3

The modern day understanding of bullying encompasses three main types - physical, social/relational, and verbal, which were first distinguished from each other beginning in the mid-1990s (Monks & Coyne, 2011). The context for social/relational bullying was limited early on, but now includes peer-to-peer, boyfriend/girlfriend, in-person and anonymous, and all individuals – children as young as preschool-age through elderly adults (Monks & Coyne, 2011). Cyberbullying is another common form of bullying today, but research on it did not gain momentum until the early 2000s (Aboujaoude, Savage, Starcevic, & Salame, 2015; Monks & Coyne, 2011). Intital studies in the area of cyberbullying focused on the Internet as the sole medium, but the rise of social media, texting, email, and instant messaging has widened the research scope (Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Notar, Padgett, & Roden, 2013). Just as the understanding of bullying has broadened and become more inclusive, researchers now study more settings where bullying may occur, as well as more demographic considerations, such as socioeconomic status or parenting styles (Arango, Opperman, Gipson, & King, 2016; Goldweber, Waasdorp, & Bradshaw, 2013; Monks & Coyne, 2011; Reed, Nugent, & Cooper, 2015). The growth of bullying research speaks to its increased importance and relevance in the world today as only 146 publications existed between 1991 and 1995, compared to 6,095 from 2011 to 2015 (Sedghi, 2013).

Literature Review

Bullying Overview and Types. For the purpose of this research, bullying is defined as any aggressive behavior aimed at hurting someone or their belongings in order to gain power or control (Kowalski & Limber, 2013; Pham & Adesman, 2015; Smith, 2016; Waasdorp & Bradshaw, 2015; Yang & Salmialli, 2013). In 2015, among students

ages twelve (12) to eighteen (18), 18.8% of males and 22.8% of females said they had been bullied at school during the last year (Bureau, 2017). The study conducted by Waasdorp and Bradshaw (2015) produced similar findings: "Approximately 23% of the youth reported being victims of any form of bullying within the last month" (p. 483). As indicated in Waasdorp and Bradshaw's work, it is important to note that there are several different types of bullying. The most common forms include physical, verbal, social/relational, and cyberbullying (Bannink, Broeren, van de Looij-Jansen, de Waart, Raat, 2014; Barrlett & Wright, 2018; StopBullying.gov, 2018). The definitions of these bullying types can be found in Appendix A.

Physical bullying. Physical bullying is the act of "hurting a person's body or possessions" (StopBullying.gov, 2018, list 4). Research to date has indicated that of the different types of bullying, males are most likely to engage in or experience physical bullying such as hitting, kicking, shoving, and pinching (Hymel & Swearer, 2015; StopBullying.gov, 2018; Turner et al., 2013; U.S. Department of Education, 2016). Data from the Bureau of Justice (2017) supports this assumption by reporting that 6.0% of bullied males had been pushed, shoved, tripped, or spit on, compared to 4.2% of females. Additionally, more boys (4.8%) than girls (2.9%) reported being threatened with harm (Bureau, 2017). Physical fighting is a form of physical bullying and according to the U.S. Department of Education (2016), bullied individuals who had engaged in a physical fight was 9.3% compared to 1.4% of non-bullied students. Physical bullying has also been linked to other types of violent behavior with males being the most frequent perpetrators (Perlus et al., 2014; Turner et al., 2013).

Verbal and social/relational bullying. According to the United States

governmental site on bullying, verbal bullying involves saying or writing mean things

about another person (StopBullying.gov, 2018). Verbal bullying can involve name-

calling, mocking, insulting, and humiliation (Naidoo, Satorius, de Vries, & Taylor, 2016).

Social/relational bullying occurs when someone hurts another person's reputation,

relationships and friendships, or belongings (Chester, Spencer, Whiting, & Brooks, 2017;

Dane, Marini, Volk, & Vaillancourt, 2017; Monks & Coyne, 2011; StopBullying.gov,

2018). Verbal and social/relational bullying are often forms of indirect aggression and

are being employed by youth more frequently for both in-person and virtual

victimization. This increased prevalence is in part due to the anonymity social media and

other technology offers bullies (Yang & Salmivalli, 2013). Data from the U.S.

Department of Education (2016) align with the examples given previously: "Of those

students who reported being bullied, 13% were made fun of, called names or insulted;

12% were the subject of rumors… and 5% were excluded from activities on purpose" (p.

T-1). One of the greatest concerns about verbal and social/relational bullying is that it is

typically much harder to identify and reprimand, as compared to physical bullying

(Hymel & Swearer, 2015). Just as physical fighting is more prevalent among boys,

several studies site findings of greater verbal and social/relational bullying among

females (Hymel & Swearer, 2015; Juvonen & Graham, 2014; Menesini & Salmivalli,

2017).

Cyberbullying/electronic bullying. Cyberbullying, a rather recent phenomenon,

is a type of bullying that is virtual in nature. It typically occurs on the Internet through

blogs, social media sites, instant messaging, and chat-rooms, as well as via texting

6

(George & Odgers, 2015; Kowalski et al., 2014). The primary reason this type of bullying is of great concern is the fact that "95% of adolescents are connected to the Internet" and use it as their primary mean of communication (Nixon, 2014, p. 143; Ovejero, Yubero, larranaga, & Moral, 2016). Additionally, cyberbullying is often the least reported and hardest to trace back to the perpetrator because it is often done anonymously (Bonanno & Hymel, 2013).

Interestingly, present studies have shown a strong correlation between cyberbullying and physical, verbal, and social/relational bullying, which is an important consideration as research progresses (George & Odgers, 2015; Hamm et al., 2015; Hase, Goldberg, Smith, Stuck, & Campain, 2015; Myers, Swearer, Martin, & Palacios, 2017). Specifically, George and Odgers (2015) found that "90% of teens who report being cyberbullied have also been bullied offline" (p. 838). Similarly, among a United States sample of students who had been exposed to cyberbullying, "88% had been bullied in at least one traditional way" (Olweus, 2013, p. 767). Conversely, the percentage of students in this study who had only experienced one type of bullying was extremely small (10%) (Olweus, 2013). Researchers believe cyber victimization occurs in tandem with other forms of bullying because of a trans-contextual effect (Lazuras, Barkoukis, & Tsorbatzoudis, 2017). In other words, though they are different, the fact they are both forms of bullying connect them (Lazuras, et al., 2017; Thomas, Connor, & Scott, 2015). Furthermore, Thomas and colleagues (2015) argue the co-occurrence of traditional and cyberbullying has to do with the frequency of victimization, as well as the similar outcomes of each for adolescents. These perspectives were also supported by McCuddy and Esbensen (2017), Mustanski, Andrews, & Puckett (2016) and Myers et al. (2017).

Gender, age, race, and sexual orientation. As previously mentioned, males are more often victims of physical bullying, while girls experience more verbal and/or social/relational bullying (Hymel & Swearer, 2015; Juvonen & Graham, 2014; Lai & Kao, 2018; Menesini & Salmivalli, 2017). Bullying happens to adolescents of all ages, but younger victims often experience physical bullying, while older victims are subject to verbal and/or social/relational bullying (Menesini & Salmivalli, 2017; Smith, 2016). This however, is not always the case, as data has shown that older adolescents who have been bullied are more likely to exhibit violent behavior (Lai & Kao, 2018; McCuddy & Esbensen, 2017). Research has also highlighted that cyberbullying is more common among older adolescents because they are often less supervised and become more interested in social networking as they grow up (Hesapcioglu & Ercan, 2017). With regard to experiences of bullying by race, the 2013 Youth Risk Behavior Survey presented the following percentages:

> 22% of white students and 22% of Asian students reported being a victim of traditional bullying at least once in the past year, compared to 18% of Hispanic students and 13% of black students. With regard to cyberbullying, 9% of black students, compared to 17% of white students, 13% of Asian students, and 13% of Hispanic students reported being a victim (Pham & Adesman, 2015, p. 750).

Although these percentages between races do not appear to be largely different, there is cause for concern that ethnic minority students are less likely to report experiences of bullying when general measures are used (i.e. have you ever been bullied) (Lai & Kao, 2018). When measures pertaining to specific victimization behaviors were put in place instead, reports from numerous studies showed that Black, Hispanic, and Asian students were more frequently classified as victims of physical, verbal, and social/relational bullying than their White peers (Lai & Kao, 2018). Being aware of how

questions are asked about bullying may help prevent underreporting and result in a more accurate representation of experiences of bullying among adolescents.

In regard to sexual orientation and experiences of bullying, a study involving seven-thousand (7,000) LGBTQ youth ages thirteen (13) to twenty-one (21) found that "nearly 9 out of 10 LGBTQ students experience harassment at school" (Menesini & Salmivalli, 2017, p. 243). Specifically, according to the 2010-2011 National School Climate Survey, of the 705 high school transgender students surveyed, "75% reported being regularly verbally harassed, 32% regularly physically harassed (e.g., pushed, shoved), and 17% regularly physically assaulted (e.g., punched, kicked, or injured with a weapon) because of their gender expression" (Reisner, Greytak, Parsons, & Ybarra, 2015, p. 246). Overall, verbal bullying seems to be experienced most frequently by sexual minority adolescents; however, victimization via cyberbullying is also significantly higher for these youth (Espelage, Merrin, & Hatchel, 2018; Myers et al., 2017).

Impact of bullying on emotional and mental health.

Mental health and bullying. Research consistently reports that bullying negatively impacts adolescents' mental health. Bullying victims have been found to have increased rates of depression, anxiety, and emotional problems (Lereya et al., 2015; Olweus, 2013; Perlus, et al., 2014; Turner et al., 2013). This finding has remained seemingly stable across all types of bullying. For example, one study with a sample of 1,874 students in grades sixth (6th) through twelfth (12th) found that regardless of the bullying experienced, victims had significantly greater levels of depression (Turner et al., 2013). Mental health issues not only exist at the time of victimization, but also long after the experience: "…adolescent peer victimization is not only associated with acute

9

elevations in anxiety and depression, but may also contribute to the development of symptoms six months later" (Stapinski, Araya, Heron, Montgomery, & Stallard, 2015). Even worse, poly-victimization (being bullied in more than one way) has devastating consequences for mental health. McCuddy and Esbensen (2017) observed that "dual victims were four times more likely to report depression" (p. 416).

Another important finding regarding mental health and bullying is that they appear to have a reciprocal relationship (Gámez-Guadix, Orue, Smith, & Calvete, 2013; Menesini & Salmivalli, 2017; Rose & Tynes, 2015). A three-year study specifically looking at cyberbullying and mental health found that depression during the first year predicted cyber victimization the following year and this remained constant throughout the remaining years of study (Rose & Tynes, 2015). Cyber victimization at the beginning of the study was also related to experiences of depression in the following years (Rose & Tynes, 2015). Another longitudinal study completed by Chervonsky and Hunt (2018) found bi-directionality between mental health and victimization, which also reflects the interconnected nature of these variables and their influence on each other.

Gender, age, race, and sexual orientation. A meaningful interaction between bullying and victim gender seems to exist. One study found that among boys, victimization by means of traditional or cyberbullying was not significantly related to mental health problems, while both were associated with girls' mental health (Bannink et al., 2014; Reed et al., 2015). Similarly, Cross, Lester, and Barnes (2015) found in all three waves of their study that "females compared to males were more likely to report emotional problems" (p. 212). Depression and anxiety levels were higher for girls and self-esteem issues were more prominent among boys in the research completed by

10

Rueger and Jenkins (2014). The greater degree of mental health issues among females

than males is interesting, especially because several reports show males being bullied

more frequently (Turner et al., 2013). According to Reed and colleagues (2015)

experiences of depression tend to increase with age, meaning older bullying victims are

more prone to this adverse mental health outcome. Racial differences in levels of

depression among bullying victims appear to be nonexistent in the literature today.

However, sexual minorities who have been bullied do experience poorer mental health

outcomes (Mustanski et al., 2016; Price-Feeney, Jones, Ybarra, & Mitchell, 2018).

   Suicidal ideation and bullying. Experiences of bullying can lead to suicidal

ideation, which is when one thinks about, considers, or plans committing suicide

(American Psychological, 2018). Just as levels of depression where significantly higher

among bullying victims, the same is true for suicidal ideation (Turner et al., 2013).

Specifically, "suicidal ideation and attempts were significantly more prevalent among

victims… with rates three (3) to five (5) times higher than the rate of uninvolved youth"

(Hertz, Donato, & Wright, 2013, p. S1-S2). McCuddy and Esbensen's (2017) study on

victims of multiple types of bullying had similar findings: "…victims were four times

more likely to report suicidal ideation and five times more likely to report a suicide

attempt compared to non-victims" (p. 416). Currently, it is unclear if and how bullying

type affects the likelihood of suicidal ideation. Bannink and colleagues (2014) concluded

that traditional bullying (verbal, physical, social/relational) was associated with suicidal

ideation, while cyberbullying was not. However, the work of Bauman, Toomey and

Walker (2013), Gini and Espelage (2014), Hamm et al. (2015) and Litwiller and Brausch

(2013) reported the opposite finding – that cyberbullying, rather than traditional bullying

methods was associated with suicidal ideation. Understanding whether there is an effect of each bullying type on suicidal ideation is a research topic that needs greater attention. It is certain however, that being a victim of more than one type of bullying is a significant predictor of suicidality. Messias, Kindrick, and Castro (2014) found that "for those reporting having made a suicide attempt, 13.9% reported school bullying only, 13.7% reported cyberbullying only, and 27.3% reported both forms of bullying" (p. 1065). The frequency of bullying victimization also appears to make a difference. According to one study, "the association between suicidal ideation and bully victimization is consistent with a dose-response-relationship, as the frequency of victimization increases, the risk for suicidal ideation increases" (Arango et al., 2016, p. 20). Another influence on suicidal ideation among bullying victims is their level of depression and overall self-esteem (Brewer & Kerslake, 2015; Hase et al., 2015; Kodish et al., 2016; Reed et al., 2015).

Gender, age, race, and sexual orientation. The significance of gender is also at play with suicidal ideation. Many studies report that female victims of any type of bullying are at an increased risk for suicidal thoughts and attempts compared to their male counterparts (Edwards, Kontostathis, & Fisher, 2016; Espelage et al., 2018). In contrast, other work specifies that the type of bullying experienced does make a difference. For example, it has been suggested that female cyberbullying victims are at greater risk of suicide, as are male victims of school-based bullying, (Bauman et al., 2013; Edwards et al., 2016; Espelage & Holt, 2013; Hertz, Jones, Barrios, David-Ferdon, & Holt, 2015; Messias et al., 2014). Other studies minimize the impact of gender, as their results did not show a statistically significant connection between it and bullying and suicide (Bauman et al., 2013; Bannink, et al., 2014; Hase et al., 2015; Kodish et al.,

2016). As is evident by the mixed findings on how gender may impact suicidal ideation

for victims of bullying, work still needs to be done in this area. Similarly, there are

contradictory reports regarding the association between age and suicidality. Reed and

colleagues (2015) found suicidal ideation to decrease with age, while Klomek et al.

(2013) found it to increase with age. Different yet, Sibold, Edwards, Murray-Close and

Hudziak (2015) saw both increases and decreases among youth between the ages of

fourteen (14) and eighteen (18). As was the case for mental health and bullying, much of

the current research asserts that race does not seem to effect one's likelihood of suicidal

ideation or suicide attempts after being bullied (Edwards et al., 2016; Espelage et al.,

2018). However, sexual minority adolescents have repeatedly reported higher rates of

suicidal ideation and attempts (Espelage et al., 2018; Dunn, Clark, & Pearlman, 2017;

Duong & Bradshaw, 2014; Mueller, James, Abrutyn, & Levin, 2015).

Weapons carrying and bullying.

Several studies have been completed to better understand adolescent weapons

carrying and school violence, many of which have concluded that bullying plays a major

role. For example, researchers have found that "71% of school shooters had been victims

of bullying and in terms of school-related violent deaths, the perpetrators were more than

twice as likely to have been victims of bullying than other students" (Esselmont, 2014, p.

215). These findings are supported by Pham and Adesman (2015) who suggest that in

general, there is an increased risk of weapons carrying and use among victims of

bullying. Other studies validate this belief, including Esselmont's (2014) which found

that "victims of bullying are approximately 47% more likely than non-victims to have

carried a weapon in the last thirty (30) days (p<0.01)" (p. 223). Victims of repeat

bullying have also been found to carry a gun more frequently in both the last thirty (30) days and last twelve (12) months (Turner, Phillips, Tigri, Williams, & Hartman, 2016). In relation to weapons carrying frequency, research shows that bullying victims carry a weapon to and in school at higher rates than they do outside of school (Valdebenito, Ttofi, Eisner, & Gaffney, 2017). It has also been identified that bullying victims with depressive symptoms are more likely to carry a weapon, which is most commonly a gun (Watts, Province, & Toohy, 2018).

A study completed by Perlus and colleagues (2014) found that a small, yet significant increase in weapons carrying frequency occurred between 1998 and 2010. Additionally, Perlus et al. (2014) found that of the approximately 1,640 students who reported carrying a weapon in 2010, the most frequently carried items were "a knife/pocket knife (58%), hand gun or firearm (20.5%), other item (7.7%), brass knuckles (6.3%), and stick or club (4.3%)" (p. 1103). The most commonly reported reasons for carrying a weapon by adolescents include not feeling safe at school, needing protection, and wanting to intimidate others (Esselmont, 2014; Holt & Gini, 2017; van Geel, Vedder, & Tanilon, 2014). The tendency for bullying victims to carry a weapon directly ties to a broader finding that "bullying perpetration and victimization are both related to involvement in violence in the future" (Perlus, et al., 2014, p. 1100).

Gender, age, race, and sexual orientation. Specific to this topic, an emerging trend in research is that male students who have been bullied are more likely to exhibit violent behavior, be it through physical fighting or carrying a weapon (Turner et al., 2013). The suspected reason for this stems from the ideas of masculinity and retaliation that often govern boys' socialization (Esselmont, 2014). The study conducted by

Esselmont (2014) supports this idea, as data showed that "boys, as compared to girls, are about four-an-a-half times more likely to have carried a weapon on average (p<0.001)" (p. 223). Interestingly, the increase in weapons carrying between 1998 and 2010 mentioned previously applied only to White students, while the rate remained stable for all other races/ethnicities (Perlus et al., 2014). Duong and Bradshaw (2014) concluded that sexual minority youth were more likely to engage in aggressive behaviors as a result of being bullied. Though some data exists on the demographics of interest, mainly gender, information on weapons carrying by bullying victims of different ages, racial backgrounds, and sexual orientation is quite limited. This study will aim to provide reliable and valid data that will help fill this gap that currently exists in the literature.

CHAPTER 2: RESEARCH STUDY DETAILS

Research Questions and Hypotheses

This study addressed three research questions:

1. How does weapons carrying vary across different types of bullying, including physical, social/relational, and cyberbullying?

    I hypothesized that weapons carrying would be most likely among victims of physical bullying, followed by victims of cyberbullying, and lastly, victims of social/relational bullying.

2. How does weapons carrying following different bullying types link to mental health outcomes, including depression and suicidal ideation?

    I hypothesized that comorbid mental health issues would increase the likelihood of an adolescent carrying a weapon, with suicidal ideation being strongly related to weapons carrying and depression moderately related.

3. How does the link between weapons carrying and mental health vary by gender, race, and sexual orientation?

    I hypothesized that male, non-White and sexual minority adolescents would be more likely to carry a weapon as a result of being bullied.

Methodology

This study was conducted using data from the 2007-2017 cycles of the national Youth Risk Behavior Survey (YRBS). The purpose of this biennial, nationally representative survey of United States (U.S.) high school students is to "1.) Describe the prevalence of health-risk behaviors among youths, 2.) Assess trends in health-risk behaviors over time and 3.) Evaluate and improve health-related policies and programs"

(Brener et al., 2013, p. 2). The sample of U.S. students in ninth through twelfth grade is obtained using a three-stage, cluster sample design (Brener et al., 2013; Pham et al., 2017). Participants come from private and public schools and voluntarily choose to participate, though parental permission procedures are in place (Hertz, Jones, Barrios, David-Ferdon, & Holt, 2015). This study started with the 2007 YRBS data because it was in this wave that questions about bullying were first asked. Respondents who reported any kind of bullying in the past twelve (12) months and had complete information on whether or not they carried a weapon were included in the analytic sample. This sample included the 89,452 high school students who participated in the 2007 – 2017 YRBS waves. The specific demographic information of the sample can be viewed in Table 1 (next page).

Table 1: Demographics

Table 1: 2007 – 2017 Youth Risk Behavior Survey (YRBS) Participant Information	
Characteristics	YRBS Sample (N, %)
Age N = 89,431	
12 years old or younger	222 (0.25%)
13 years old	106 (0.12%)
14 years old	9,530 (10.66%)
15 years old	20,911 (23.38%)
16 years old	22,726 (25.41%)
17 years old	22,643 (25.32%)
18 years old or older	13,293 (14.86%)
Gender N = 89,452	
Male	44,524 (49.77%
Female	44,928 (50.23%)
Grade N = 89,139	
9th grade	22,906 (25.70%)
10th grade	21,906 (24.58%)
11th grade	22,421 (25.15%)
12th grade	21,906 (24.58%)
Race N = 89,971	
American Indian or Alaska Native	1,150 (1.31%)
Asian	3,421 (3.89%)
Black or African American	15,986 (18.17%)
Native Hawaiian or Pacific Islander	759 (0.86%)
White	37,394 (42.51%)
Sexual Status N = 28,811	
Heterosexual (straight)	24,966 (86.65%)
Gay or lesbian	681 (2.36%)
Bisexual	2,059 (7.15%)
Not sure	1,105 (3.84%)
Bullying Types (yes)	
Physical bullying	9,379 (10.64%)
Threatened at school	6,517 (7.33%)
School-based bullying	13,737 (18.59%)
Electronic bullying	8,235 (14.49%)

Measures

Physical fighting. The following questions were used in YRBS to measure

physical fighting:

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

   – 0, 1, 2 or 3, 4 or 5, 6 or 7, 8 or 9, 10 or 11, 12 or more times

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

   on school property?

   – 0, 1, 2 or 3, 4 or 5, 6 or 7, 8 or 9, 10 or 11, 12 or more times

Cyberbullying/electronic bullying. YRBS measured cyberbullying/electronic

bullying using the following question:

1. During the past 12 months, have you ever been electronically bullied?

   – Yes, No

School-based bullying. School-based bullying was measured in YRBS using the

following questions:

1. During the past 30 days, on how many days did you not go to school

   because you felt you would be unsafe at school or on your way to or from

   school?

   – 0, 1, 2 or 3, 4 or 5, 6 or more times

2. During the past 12 months, how many times has someone stolen or

   deliberately damaged your property such as your car, clothing, or books

   on school property?

   – 0, 1, 2 or 3, 4 or 5, 6 or 7, 8 or 9, 10 or 11, 12 or more times

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, 1, 2 or 3, 4 or 5, 6 or 7, 8 or 9, 10 or 11, 12 or more times

4. During the past 12 months, have you ever been bullied on school property?

– Yes, No

Depression. YRBS asked the following questions related to depression:

1. 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?

– Yes, No

Suicidal ideation. Suicidal ideation was measured in YRBS using the following questions:

1. During the past 12 months, did you ever seriously consider attempting suicide?

– Yes, No

2. During the past 12 months, did you make a plan about how you would attempt suicide?

– Yes, No

3. During the past 12 months, how many times did you actually attempt suicide?

– 0, 1, 2 or 3, 4 or 5, 6 or more times

20

Weapons carrying. To measure weapons carrying, the follow questions were asked in YRBS:

1. Have you ever carried a weapon, such as a gun, knife, or club?

   – Yes, No

2. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?

   – 0, 1, 2 or 3, 4 or 5, 6 or more days

3. 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, 1, 2 or 3, 4 or 5, 6 or more days

Demographics. The following questions were those that depicted the demographic information that was of interest to the researcher:

1. How old are you?

   – 12 years old or younger, 13, 14, 15, 16, 17, 18 years old or older

2. What is your sex?

   – Male, Female

3. In what grade are you?

   – 9th, 10th, 11th, 12th

4. What is your race?

   – American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Pacific Islander, White

5. Which of the following best describes you?

   – Heterosexual (straight), Gay or lesbian, Bisexual, Not sure

Control Variables. The following questions were those the researcher used as control variables:

1. During the past 12 months, how would you describe your grades in school?

   – Mostly A's, Mostly B's, Mostly C's, Mostly D's, Mostly F's, None of these grades, Not sure

2. How do you describe your weight?

   – Very underweight, Slightly underweight, About the right weight, Slightly overweight, Very overweight

3. When was the last time you saw a dentist for a check-up, exam, teeth cleaning, or other dental work?

   – During the past 12 months, Between 12 and 24 months ago, More than 24 month ago, Never, Not sure

4. A new variable was created to combine several types of substance use:

   a. During the past 30 days, on how many days did you have at least one drink of alcohol?

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

   b. During the past 30 days, on how many days did you use an electric vapor product?

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

c. During the past 30 days, on how many days did you smoke

cigarettes?

– 0 days, 1 or 2 days, 3 to 5 days, 6 to 9 days, 10 to 19 days, 20 to

29 days, All 30 days

d. During the past 30 days, on how many days did you use

marijuana?

– 0 days, 1 or 2 days, 3 to 5 days, 6 to 9 days, 10 to 19 days, 20 to

29 days, All 30 days

5. Have you ever had sexual intercourse?

– Yes, No

Planned Analysis

Variable construction. I first dichotomized the four (4) bullying variables

(school-based bullying, electronic/cyberbullying, engaged in a physical fight, and

threatened at school with a weapon [measurement: past twelve (12) months]) (e.g., did

not occur/did occur), as well as the weapons carrying variable (e.g., did not carry/did

carry). From here, I constructed one new outcome variable for analysis per bullying

variable (e.g., did not carry a weapon after bullying/did carry a weapon after bullying).

This process resulted in four binary variables that were used as primary predictor

variables.

Analysis for research question #1. How does weapons carrying vary across

different types of bullying, including physical, social/relational, and cyberbullying? I

used descriptive statistics – including frequencies and appropriate measures of centrality

and dispersion – to examine the prevalence and distribution of weapons carrying in each of the three bullying types.

      Analysis for research question #2. How does weapons carrying following different bullying types link to mental health outcomes, including depression and suicidal ideation? I used the four primary variables (described above) as simultaneous *independent variables* – controlling for age, gender, race, and sexual orientation – in ordinal (for categorical variables) and binary (for dichotomous outcomes) logistic regression models. All estimates were be adjusted for complex sampling design and population weights in the survey set suite of commands in Stata (15.0, all $p<0.05$). Each mental health outcome was modeled in a different model.

      Analysis for research question #3. How does the link between weapons carrying and mental health vary by gender, race and sexual orientation? I used the four primary variables in turn as *outcome variables* in binary logistic regression models. Gender, race, and sexual orientation were used as predictor variables. All estimates were adjusted for complex sampling design and population weights in the survey set suite of commands in Stata (15.0, all $p<0.05$).

      The YRBS data that were utilized for this study are publicly available and de-identified and therefore, were classified as exempt by Indiana University–Purdue University Indianapolis.

CHAPTER 3: RESEARCH STUDY RESULTS

Research Question #1

The first research question of this study was "How does weapons carrying vary across different types of bullying, including physical, social/relational, and cyberbullying?" The data showed that individuals who had been in a physical fight were the most likely to carry a weapon (N = 268; 21.5%), followed by those who had been threatened at school (N = 233; 26.6%). The least common types of bullying associated with weapons carrying were cyberbullying (N = 166; 8.1%) and school-based bullying (N = 185; 7.2%). These results confirmed the researcher's hypothesis that weapons carrying would be most likely among victims of physical bullying. It was also hypothesized that cyberbullying victims would be more likely to carry a weapon than those who experienced social/relational bullying. This was not supported by the data, as more students who had been bullied at school (N = 185; 7.2%) carried a weapon than those who were victims of cyberbullying (N = 166; 8.1%). The specific findings for this research question can be viewed in Table 2 below.

Table 2: Bullying Experience and Weapons Carrying			
	Overall prevalence (yes; N, %)	Carried a Weapon	
		No (N,%)	Yes (N,%)
Experienced Electronic Bullying	8,235 (14.49%)	1,880 (91.8%)	166 (8.1%)
Experienced School-based Bullying	13,737 (18.59%)	2,384 (92.8%)	185 (7.2%)
Threatened at School	6,517 (7.33%)	642 (73.3%)	233 (26.6%)
Been in a Physical Fight	9,379 (10.64%)	977 (78.4%)	268 (21.5%)

Research Question #2

The second research question was "How does weapons carrying following different bullying types link to mental health outcomes, including depression and suicidal ideation?" Although the researcher hypothesized there would be a connection between

bullying, weapons carrying, and mental health, there was little evidence of this in the

data. Of the four bullying types, individuals who had been threatened at school and

carried a weapon were the only group for which a significant correlation was found.

Exposure to this type of bullying increased the likelihood an individual would feel sad or

hopeless (OR = 2.61; 95% CI: 1.17 – 5.82) and consider attempting suicide (OR = 2.56;

95% CI: 1.11 – 5.89). In other words, having been threatened at school increased the

odds of depression and suicide consideration by two to three times. There was no

significance present for the other bullying types or aspects of suicidal ideation, including

creating a plan to commit suicide and tried committing suicide. The statistical results for

this research question can be viewed in Table 3 on the next page.

Table 3: Research Question #2

Table 3: Influence of Bullying Experience and Weapons Carrying on Suicidal Ideation				
	Feeling Sad or Hopeless OR (95% CI)	Made a Suicide Plan OR (95% CI)	Considered Suicide OR (95% CI)	Attempted Suicide OR (95% CI)
Experienced Electronic Bullying and Carried a Weapon	0.87 (0.50 – 1.52)	1.41 (0.68 – 2.91)	1.58 (0.73 – 3.43)	1.34 (0.64 – 2.81)
Experienced School-based Bullying and Carried a Weapon	1.00 (0.58 – 1.71)	1.00 (0.49 – 2.06)	1.23 (0.59 – 2.58)	1.32 (0.89 – 1.95)
Threatened at School and Carried a Weapon	2.61 (1.17 – 5.82)*	1.38 (0.58 – 3.29)	2.56 (1.11 – 5.89)*	1.56 (0.75 – 3.23)
Been in a Physical Fight and Carried a Weapon	1.39 (0.76 – 2.53)	1.00 (0.38 – 2.17)	1.44 (0.69 – 3.00)	1.02 (0.42 – 2.46)

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Research Question #3

　　The final research question asked in this study was "How does the link between weapons carrying and mental health vary by gender, race, and sexual orientation?" The researcher's hypothesis was that male, non-White and sexual minority adolescents would be more likely to carry a weapon as a result of being bullied. This hypothesis was partially supported. Across all types of bullying, males were more likely to carry a weapon (*Electronic bullying*: OR = 3.25; 99% CI: 1.66 – 6.36; *School-based bullying*: OR = 3.27; 99% CI: 1.98 – 5.40; *Threatened at school*: OR = 2.82; 95% CI: 1.18 – 6.75; and *Physical Fight*: OR = 2.17; 95% CI: 0.96 – 4.88). This finding mirrors the results of many previous studies and suggests that there is a relevant gender difference between how male and female adolescents deal with and react to being bullied. Ethnic minority students were more likely to carry a weapon only when they had been threatened at school (OR = 2.63; 99% CI: 1.34 – 5.16), but the other bullying types did not appear to be significant. Interestingly, sexual minority status does not seem to play a role in weapons carrying after any bullying experience. The results also showed that older adolescents tended to be less likely to carry a weapon as a result of being bullied, especially those of age seventeen. For example, having experienced cyberbullying and carried a weapon was higher for fourteen year olds than seventeen year olds (*Electronic Bullying, Age 14:* OR = 3.88; 95% CI: 0.38 – 39.52; *Electronic Bullying, Age 17:* OR = 0.42; 95% CI: 0.17 – 1.03). Table 4 on the next page includes the statistical results for this research question.

Table 4: Research Question #3

Table 4: Demographic Differences in Experiences of Bullying and Weapons Carrying				
	Experienced Electronic Bullying and Carried a Weapon OR (95% CI)	Experienced School-based Bullying and Carried a Weapon OR (95% CI)	Threatened at School and Carried a Weapon OR (95% CI)	Been in a Physical Fight and Carried a Weapon OR (95% CI)
Sexual Minority [yes]	0.88 (0.44 – 1.76)	1.01 (0.51 – 1.99)	1.10 (0.48 – 2.48)	0.63 (0.36 – 1.10)
Ethnic/Racial Minority [yes]	1.15 (0.61 – 2.15)	1.26 (0.70 – 2.26)	2.63 (1.34 – 5.16)**	1.74 (0.89 – 3.39)
Gender [Male]	3.25 (1.66 – 6.36)***	3.27 (1.98 – 5.40)***	2.82 (1.18 – 6.75)*	2.17 (0.96 – 4.88)*
Age				
14 years	3.88 (0.38 – 39.52)	1.08 (0.10- 11.14)	0.17 (0.02 – 1.31)	–
15 years	1.32 (0.19 – 9.09)	0.43 0.06 – 2.87)	0.04 (0.00 – 0.32)**	0.70 (0.22 – 2.24)
16 years	0.48 (0.12 – 1.84)	0.43 (0.12 – 1.53)	0.28 (0.07 – 1.08)	0.65 (0.12 – 3.43)
17 years	0.42 (0.17 – 1.03)*	0.41 (0.16 – 1.01)*	0.25 (0.08 – 0.73)*	0.99 (0.14 – 6.91)
18 years or older	–	–	–	1.12 (0.14 – 8.96)
Grade in School				
10th	1.30 (0.33 – 5.13)	1.32 (0.31 – 5.55)	0.31 (0.07 – 1.32)	1.23 (0.45 – 3.37)
11th	3.68 (0.66 – 20.38)	1.67 (0.28 – 9.80)	0.43 (0.09 – 1.87)	0.96 (0.31 – 2.93)
12th	3.83 (0.48 – 30.61)	2.28 (0.28 – 18.14)	0.17 (0.02 – 1.12)	0.79 (0.17 – 3.51)

*p< 0.05, **p<0.01, ***p<0.001

CHAPTER 4: DISCUSSION

Although a great deal of research on the topic of bullying has been conducted to date, very few of these studies have addressed the issue of victims carrying weapons. This major gap in the literature is perplexing considering the relevancy of this topic with a total of twenty-four school shootings having happened in 2018 alone, which injured or killed 114 people (Blad, et al., 2018). As such, the researcher wanted to address this gap and gain insight into this issue in order to inform anti-bullying policies and prevention programs. The overarching purpose of this study was to understand if and how experiences of bullying impact weapons carrying and mental health among various adolescent demographics.

The results of this study suggest that physical bullying is the most correlated bullying type with the outcome of weapons carrying. This is a logical finding as a great deal of literature highlights the fact that violent behavior often stems from previous experiences of violence, such as abuse or physical fighting (Perlus et al., 2014; Turner et al., 2013). Additionally, the data consistently show that males are at a higher risk of turning violent after being bullied, which the results of this study also support. This finding is historically evident as "for multi-victim (3+) school shootings, a whopping 97% of perpetrators are boys or men" (Marsden, 2018, p. 4). The fact that males tend to be more prone to violence is a crucial point of understanding for preventive measures moving forward. This gender difference may exist as a result of gender norms, socialization practices, and ideas of masculinity that boys grow up learning and therefore emulate (Esselmont, 2014).

The effect of bullying on adolescent mental health was seen in this study only as it related to having been threatened at school. The literature states that all aspects of mental health, including anxiety, depression, and suicidal ideation will be negatively impacted by bullying, so this study's results only confirms this in part (Hertz, Donato, & Wright, 2013; Lereya et al., 2015; Turner et al., 2013). The researcher found that being threatened at school was significantly correlated to depressive symptoms and considering suicide. Although a consensus has not yet been reached on the impact of the bullying type experienced on suicidal ideation, the results of this study supported the work of Bannink and colleagues (2014), which suggested that experiencing traditional forms of bullying (physical, verbal, social/relational) led to suicidal ideation, while cyberbullying did not. Being bullied by any means, but especially through threats, can have severe repercussions for an adolescent's mental health in the short-term and long-term, which is noteworthy for caregivers who may not know to stay attuned to adolescents' demeanor long after they first come forward.

The findings of this research study confirmed some of the assumptions in the current literature on bullying and weapons carrying. The gender differences in experiences of bullying outlined in modern research were upheld with this data showing that more boys were victims of physical bullying than their female classmates (Hymel & Swearer, 2015; Juvonen & Graham, 2014; Lai & Kao, 2018; Menesini & Salmivalli, 2017). Previous work has noted that 6% of male bullying victims have experienced physical bullying compared to only 4% of female victims (Bureau, 2017). However, racial and sexual minority status did not appear to have a significant impact on experiences of the different types bullying, which the literature suggested.

Existing research on weapons carrying suggests that male bullying victims are

more likely than female victims to arm themselves (Esselmont, 2014; Turner et al., 2013).

The results of this study align with this understanding and showed adolescent men

as two to three times as likely as their female classmates to carry a weapon after being

bullied. It is not well understood why this is the case, but as noted previously, it is

speculated that the socialization of males and how masculinity is defined plays a key role

in this gender difference (Esselmont, 2014). Including these potential social influences in

the study of bullying, weapons carrying, and mental health could provide clarity and

better understanding of the consistent results that males are more inclined to do harm than

females. The literature also suggests that individuals in protected groups have higher

odds of carrying a weapon after victimization, but this belief was not reflected in the

findings of this study. This belief has developed from the understanding that minority

groups are more likely to be bullied because of their differences and therefore, will

retaliate more aggressively at a higher rate (Duong & Brandshaw, 2014).

Limitations

There are several limitations that should be highlighted as it relates to the results

of this study. Firstly, the data set utilized for analyses did not have a large quantity of

bullying-related questions. Although there are four main categories of bullying in the

literature today (physical, verbal, social/relational, and cyberbullying), they were not all

addressed with the questions in the Youth Risk Behavior Survey (YRBS) which limited

the scope of this study. Furthermore, the category of "school-based bullying" was very

broad and likely encompassed all types of bullying. Similarly, the question regarding

"threatened at school" may have also fit into more than one bullying type. Additionally,

some individuals may have experienced bullying, but not thought of it as such. Having

had specific questions geared towards each bullying type would have been useful in

determining how frequently bullying occurs and having a more accurate link between

bullying type and weapons carrying. This would be an easy change to implement in

future studies and could include questions such as:

1. (Verbal Bullying) – In the last 30 days, how often have you ever been:
   a. Teased/taunted
   b. The subject of homophobic or racist remarks
   c. Called names
   d. The subject of inappropriate sexual comments
   e. Threatened to be harmed
   f. The subject of mean or rude hand gestures
   [Measurement: Never, 1-4 times, 5-8 times, 9-12 times, 13-16 times, and 17+ times]
2. (Social/Relational Bullying) – In the last 30 days, how often have you ever been:
   a. Left out of something on purpose
   b. Told you cannot be friends with someone
   c. The subject of a rumor spread by another person
   d. Had your reputation damaged/lost social acceptance from others
   e. Mimicked unkindly
   f. Embarrassed in public
   [Measurement: Never, 1-4 times, 5-8 times, 9-12 times, 13-16 times, and 17+ times]
3. (Physical Bullying):) – In the last 30 days, how often have you ever been:
   a. Kicked
   b. Pinched
   c. Hit/slapped/punched
   d. Spit on
   e. Tripped
   f. Pushed/shoved
   g. Had any of your belongings taken or broken
   [Measurement: Never, 1-4 times, 5-8 times, 9-12 times, 13-16 times, and 17+ times]

Additionally, no list of specific weapons was available so an analysis by weapon

type was not feasible. This could have provided a much more detailed insight into the

issue of bullying and weapons carrying that does not exist in the literature today. This is

an important consideration because students may have different intents with the

weapon(s) they may carry. For example, it has been found that carrying a knife is more

for personal protection, whereas a gun is to inflict harm on others (Wallace, 2017). Not

having insight into why an individual chose to carry a weapon after being bullied also

inhibited the researcher from understanding the larger picture. For example, knowing the

intent behind carrying a weapon could deeply inform school safety efforts. Potential

questions that could be asked to address this limitation include:

1. In the last 30 days, what type of weapon have you carried? (Check all that apply)
   a. Knife/pocket knife
   b. Hand gun or firearm
   c. Stick or club
   d. Other (Please specify): _____
   e. Prefer not to answer
2. In the last 30 days, why did you carry the weapon(s)? (Check all that apply)
   a. For protection
   b. To create fear/panic
   c. To hurt someone
   d. Other (Please specify): _____
   e. Prefer not to answer

The small sample size of respondents who had been a victim of bullying and

carried a weapon was also a limitation of this study. One way to solve this problem

would be to employ convenience and snowball sampling methods to obtain previous or

current victims of bullying who would be willing to participate in the study. Social

media could also be utilized to create awareness of the study, as well as in-school

recruitment.

Suggestions for Future Research

Future research studies should aim to use primary data sources instead of

secondary, since there is a limited amount of available data on bullying and weapons

carrying. This should include specific questions on each of the four bullying types and be more specific about the type of weapon (such as the example questions previously outlined). Literature on this topic does dive into why one may carry a weapon, which would be a valuable item to measure as well. Although quantitative data can tell an interesting story, it might also be meaningful to employ a mixed methods approach to obtain personal accounts that could be used to inform further research or prevention strategies. The control variables selected for future studies would also be a point of addition and/or change, as YRBS was limited in its data on physical health, socioeconomic status, living arrangements, and school type (public, private, charter, etc.) which all may be important considerations to fully understand the connection between experiences of bullying, weapons carrying, and mental health among adolescents.

CHAPTER 5: CONCLUSION

Bullying and weapons carrying is a major societal issue that needs to be addressed before more harm is committed against innocent individuals and communities. Since the Columbine school shooting in 1999, "more than 187,000 students have been exposed to gun violence at school" (Cox & Rich, 2018). It is critical that this number does not continue to rise, which was the purpose for this study. By understanding the types of bullying experienced, who the victims are, and how individuals are affected by the mistreatment, bullying interventions can be better developed and implemented. This information can also help inform school safety plans, teacher/staff training, and prevention strategies, so school shootings cease to occur. This research should also be used to develop and/or revise education and government policies regarding the discipline of bullies and consequences for their actions, as well as healthcare policies regarding adolescent mental health treatment.

The radical switch in the academic and medical view of bullying is positive, but it has not spread to the lay community. Parents, teachers, community leaders, etc. all need to understand that bullying is not just a "part of growing up" and that real consequences do exist that are harmful to adolescents' physical and psychological health (Gini & Espelage, 2014). Today's youth should not be subjected to bullying or the harmful behaviors it can induce, both of which can often be prevented just by awareness and understanding. If more youth and adults were able to recognize the signs of all four types of bullying (physical, verbal, social/relational, and cyberbullying), feel comfortable reporting acts of bullying, and help monitor weapons carrying, then this social epidemic that is affecting almost a quarter of today's adolescents could be put to an end.

Appendix A

Table of Definitions	
Term	*Definition*
Bullying[*]	Bullying is unwanted, aggressive behavior among school aged children that involves a real or perceived power imbalance. The behavior is repeated, or has the potential to be repeated, over time.
Cyberbullying (Electronic)[*]	Cyberbullying is bullying that takes place over digital devices like cell phones, computers, and tablets. Cyberbullying can occur through SMS, Text, and apps, or online in social media, forums, or gaming where people can view, participate in, or share content.
Depression[**]	Depression is more than just sadness. People with depression may experience a lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide.
Physical Bullying[*]	Involves hurting a person's body or possessions.
Social/Relational Bullying[***]	A distinct form of bullying which causes harm to the victim through the systematic manipulation and destruction of their peer relationships and social status.
Suicidal Ideation[****]	Thinking about, considering, or planning suicide.
Verbal Bullying[*]	The saying or writing of mean things.

[*]StopBullying.gov (2018)
[**]American Psychological Association (2018)
[***]Chester et al. (2017)
[****]Centers for Disease Control and Prevention (2018)

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    Bullying-victims versus bullies and victims. *European Journal of Developmental*

    Psychology, 10(6), 723-738.

CURRICULUM VITAE
Amber C. Kriech

EDUCATION:

GRADUATE

Indiana University Purdue University-Indianapolis Indianapolis, IN	M.A. Sociology	2019
Indiana University Purdue University-Indianapolis Indianapolis, IN	Certificate Human Resource Development	2019

UNDERGRADUATE

Indiana University Purdue University-Indianapolis Indianapolis, IN	B.S. Organizational Leadership	2017
Indiana University Purdue University-Indianapolis Indianapolis, IN	Certificate Human Resource Management	2017
Indiana University Purdue University-Indianapolis Indianapolis, IN	Certificate Technical Communication	2019

APPOINTMENTS:

ACADEMIA

University Fellow	Indiana University Purdue University-Indianapolis	2017 – 2019
Bepko Fellow	Indiana University Purdue University-Indianapolis	2017 – 2019
Teaching Assistant	Department of Sociology, Indiana University Purdue University-Indianapolis	2017 – 2019
Research Assistant	Department of Sociology, Indiana University Purdue University-Indianapolis	2017 – 2019
Bepko Scholar	Indiana University Purdue University-Indianapolis	2013 – 2017

BUSINESS

Research and Data Analyst	Advisa	Jan 2019 – Present
Leadership and Organization Development Intern	Advisa	Aug 2018 – Dec. 2018
Pittman Fellow in Human Resources and Organization Development	The Children's Museum of Indianapolis	Sept 2017 – May 2018
Total Rewards Intern	Greif, Inc.	May 2017 – Aug 2017
Human Resources Intern *Recruitment and HR Records*	State Farm Corporate Headquarters	May 2016 – Aug 2016
Human Resources Intern *Talent Management and Call-Center Quality Team*	State Farm Corporate Headquarters	May 2015 – Aug 2015

PROFESSIONAL ORGANIZATION MEMBERSHIPS:

Midwest Sociology Society	Student Member	2019 – Present
Project Management Institute	Student Member/ Central Indiana Chapter Member	2017 – Present
Society for Adolescent Health and Medicine	Student Member	2017 – 2019
Society for the Study of Social Problems	Student Member	2017 – 2018
Society for Human Resource Management	Student Member	2013 – Present

HONORS AND AWARDS:

ACADEMIC

Elite 50	Indiana University-Purdue University Indianapolis	2019
Chancellor's Scholar Award – Honorable Mention	Indiana University-Purdue University Indianapolis	2019
Student Commencement Speaker	Indiana University Purdue University-Indianapolis	2017

Top 100 Student	Indiana University Purdue University-Indianapolis	2017
Women's Leadership Award: Undergraduate Student	Indiana University Purdue University-Indianapolis	2017
Top 100 Student	Indiana University Purdue University-Indianapolis	2016
Outstanding Executive Committee Member of the Year	Student Organization for Alumni Relations (IUPUI)	2015

HONORS SOCIETIES

Alpha Kappa Delta		2017 – Present
Tau Alpha Pi		2014 – Present
Alpha Lambda Delta		2014 – Present
Phi Eta Sigma		2014 – Present

SERVICE

Plater Medallion Recipient	Indiana University Purdue University-Indianapolis	2019
Plater Medallion Recipient	Indiana University Purdue University-Indianapolis	2017
Indianapolis Mayor's Diversity Award	Indianapolis Mayor's Office	2015
Nestlé Very Best in Youth Award	Nestlé Corporation	2013
Indiana Governor's Service Award	Indiana's Governor's Office	2013
Girl Scout Gold Award	Girl Scouts of America	2012
All-America High School Service Team Award	GenerationON, Points of Light Institute, Parade Magazine	2011
Power of Children Award	The Children's Museum of Indianapolis	2009

SCHOLARSHIPS AND GRANTS

Graduate and Professional Educational Grant	Graduate and Professional Student Government, IUPUI	2019
Graduate and Professional Educational Grant	Graduate and Professional Student Government, IUPUI	2018
Lee Student Support Fund Travel Scholarship	Society for the Study of Social Problems	2018

PROFESSIONAL DEVELOPMENT:

Emerging Scholars in College Instruction Program	Center for Teaching and Learning, IUPUI	2017 – 2019
Preparing Future Faculty and Professionals Conference	Center for Teaching and Learning, IUPUI	2018
Leadership in Adolescent Health	Adolescent Medicine Department of Pediatrics, Indiana University School of Medicine	2017 – 2018
Global Leadership Summit	Willow Creek Association	2017
Global Leadership Summit	Willow Creek Association	2014
National Service Learning Conference	National Youth Leadership Council	2014

TEACHING ADMINISTRATION AND CURRICULUM DEVELOPMENT:

OLS 51500: Foundations of Human Resources *Online course review and assignment revisions*	Indiana University Purdue University -Indianapolis	Jan 2018 – May 2018
OLS 46700: Peer Mentoring Program (Service Learning) *In-person course development and mentor training*	Indiana University Purdue University -Indianapolis	Oct 2015 – May 2017
OLS 33100: Occupational Safety and Health *Online course development*	Indiana University Purdue University -Indianapolis	May 2015 – Aug 2015

TCM 39500: Grant Writing	Indiana University	Jan 2018 – May 2018
In-person course development	Purdue University	
	-Indianapolis	

BUSINESS TRAINING DEVELOPMENT:

Sports Legends Experience	The Children's	Oct 2017 – Jan 2018
Grand Opening	Museum of Indianapolis	
All staff training		

Social Media and Online	The Children's	Jan 2016 – April 2016
Presence	Museum of Indianapolis	
Intern program training		

RESEARCH/CREATIVE ACTIVITY:

ORAL PRESENTATIONS

Wager E.K., Kriech A.C., Murphy, L. Building Peer Mentoring into the Undergraduate Curriculum: From Pilot to High-Impact Practice, National Mentoring Symposium, November 2018

Kriech AC. The Influence of School Connectedness on Adolescents' Well-being and Academic Success. Indiana Academy of the Social Sciences Annual Meeting, October 2018, New Albany, IN.
    *Session Topic: "Sociology and Language Communications"

Kriech AC. The Power of Voice: Ryan White. Society for the study of Social Problems Annual Meeting, August 2018, Philadelphia, PA.
    *Session Topic: "Social Inequalities: Repression and Accomplishment"

Kriech AC. The Influence of School Connectedness on Adolescents' Well-being and Academic Success. Leadership Education in Adolescent Health Seminar Series, May 2018, Indianapolis, IN.

Kriech AC, Murphy L, Madrigal J, and Wager E. Building Leadership Student Success from the Inside: Integrating Peer Mentors to Practice What We Teach. National Mentoring Symposium, October 2017, Indianapolis, IN.

Woodlee KM, Clossin E, and Kriech AC. Building Mentoring Relationships Between First-Year and Upper-Class Scholars. National Mentoring Symposium, October 2016, Indianapolis, IN.

REFEREED – POSTER PRESENTATION:

Kriech AC. The Association Between Bullying, Weapon Carrying, and Mental Health: Results from a Nationally Representative Survey of High School Students. IUPUI Student Research Day, April 2019, Indianapolis, IN.

Kriech AC. The Association Between Bullying, Weapon Carrying, and Mental Health: Results from a Nationally Representative Survey of High School Students. American Association for Behavioral and Social Sciences Annual Conference, February 2019, Las Vegas, NV.

Kriech AC. The Influence of School Connectedness on Adolescents' Romantic Relationships and Condom Use Self-Efficacy. Midwest Graduate Research Symposium, April 2018, Toledo, OH.

Kriech AC. The Influence of School Connectedness on Adolescents' Romantic Relationships and Condom Use Self-Efficacy. IUPUI Student Research Day, April 2018, Indianapolis, IN.

Kriech AC. The Influence of School Connectedness on Adolescents' Romantic Relationships and Condom Use Self-Efficacy. American Association for Behavioral and Social Sciences Annual Conference, February 2018, Las Vegas, NV.

Kriech AC. Personal Leadership Development: Perceived Value of Peer Mentoring Experience. American Association for Behavioral and Social Sciences Annual Conference, January 2017, Las Vegas, NV.

REFEREED – CRITICAL DIALOGUE SESSIONS
Kriech AC. The Influence of School Connectedness on Adolescents' Well-being and Academic Success. Society for the Study of Social Problems Annual Meeting, August 2018, Philadelphia, PA.
    *Session Topic: "Examining Social Systems on Child Well-Being and Delinquency"

INVITED – POSTER PRESENTATIONS
Kriech AC. The Association Between Bullying, Weapon Carrying, and Mental Health: Results from a Nationally Representative Survey of High School Students. Midwest Sociological Society Annual Meeting, April 2019, Chicago, IL.

Kriech AC. The Association Between Bullying, Weapon Carrying, and Mental Health: Results from a Nationally Representative Survey of High School Students. Society for Adolescent Health and Medicine Annual Meeting, March 2019, Washington, D.C.

SERVICE:
UNIVERSITY

Committee Member	IUPUI Student Development Funding Committee	2016 – Present

Mentor	Organizational Leadership Peer Mentor Program, IUPUI	2016 – Present
Committee Member	Commencement Speaker Committee, IUPUI	2017 – 2018
Career Services Ambassador	School of Engineering And Technology, IUPUI	2016 – 2017
Committee Member	R.I.S.E. Steering Committee, IUPUI	2015 – 2017
Mentor Leader	Honors College Peer Mentoring Program, IUPUI	2015 – 2017
Mentor	Honors College Peer Mentoring Program, IUPUI	2014 – 2017

COMMUNITY

Board Member	Power of One Board	2016 – 2018
500 Festival Princess	500 Festival/Indianapolis Motor Speedway	2016 – 2017
Committee Member	Girl Scout Gold Award Committee, Girl Scouts Of Central Indiana	2014 – Present
Symposium Leader	Power of Children Symposium (annual), The Children's Museum of Indianapolis	2011 – Present

NATIONAL

Board Member	State Farm Youth Advisory Board	2014 – 2016