BULLYING AND CYBERBULLYING VICTIMIZATION: UNDERSTANDING THE ROLE OF INTIMATE PARTNER VIOLENCE DURING CHILDHOOD, ADOLESCENCE, AND EARLY ADULTHOOD

by

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ABSTRACT

ABIGAIL F. POST Bullying and Cyberbullying Victimization: Understanding the Role of Intimate Partner Violence during Childhood, Adolescence, and Early Adulthood. (Under the direction of DR. LARISSA BRUNNER HUBER)

Bullying and cyberbullying victimization are major public health problems that threaten the health of children, adolescents, and early adults across the U.S. Past research has suggested different types of interpersonal violence are related, but few studies have examined associations between intimate partner violence (IPV) experiences and bullying/cyberbullying victimization, specifically. Furthermore, little research has considered sex/gender identity as an effect modifier of these associations. Thus, the purpose of this dissertation was twofold. The primary objective was to examine associations between IPV experiences and bullying/cyberbullying victimization, and the secondary objective was to consider sex/gender identity as an effect modifier of these associations. To meet these objectives, three separate studies were conducted. Study one examined the association between witnessing parental IPV and in-person bullying victimization among children aged 6-9 using 2021 National Survey of Children's Health data. Study two examined associations between the frequency of IPV experiences and cyberbullying victimization among adolescents aged 14-18 using 2017-2019 Youth Risk Behavior Surveillance Survey data. Lastly, study three examined associations between IPV experiences and cyberbullying victimization among early adults aged 18-25 using 2021 National College Health Assessment Survey data. Taken together, findings suggest IPV experiences are associated with an increased odds of bullying/cyberbullying victimization, but the role of sex/gender identity as an effect modifier varied across the three studies. In turn, it is the hope of this author that this dissertation research may inform IPV, bullying, and cyberbullying prevention and intervention efforts in schools and universities across the U.S.

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LIST OF ABBREVIATIONS

ACHA	American College Health Association
ADHD	Attention Deficit/Hyperactivity Disorder
CDC	Centers for Disease Control and Prevention
CVT	Cultural Violence Theory
CI	Confidence Interval
DV	Dating Violence
FPL	Federal Poverty Level
FSI	Forced Sexual Intercourse
H	Hypothesis
IPV	Intimate Partner Violence
NCHA	National College Health Assessment
NSCH	National Survey of Children's Health
PDV	Physical Dating Violence
PTSD	Post Traumatic Stress Disorder
PRR	Prevalence Rate Ratio
RQ	Research Question
SDV	Sexual Dating Violence
UNESCO	United Nations Educational, Scientific, and Cultural Organization
WHO	World Health Organization
YRBSS	Youth Risk Behavior Surveillance Survey

CHAPTER ONE: INTRODUCTION

Terms and Definitions

Bullying and cyberbullying are well-recognized public health problems. Broadly, bullying is understood as any unwanted aggressive behavior used to inflict harm on another person; it is often repetitive, and it typically involves a power imbalance between individuals (Gladden et al., 2014, p.7). Some common examples of bullying include physical bullying (e.g., punching, kicking, shoving), verbal bullying (e.g., insults, name-calling, threats, intimidation), social bullying (spreading rumors or lies, ostracizing individuals from a group), and the intentional destruction of property (Centers for Disease Control and Prevention [CDC], 2021). In this dissertation, the term "bullying" primarily refers to bullying that occurs in-person.

Cyberbullying, a new and evolving type of bullying, differs from in-person bullying in that it is not hindered by the time or space restrictions of in-person bullying. Cyberbullying involves the use of electronic information and communication technology to purposefully embarrass, threaten, harass, or socially exclude an individual or a group of individuals (Hinduja & Patchin, 2009). Cyberbullying behaviors are complex and varied. For instance, cyberbullying may include using insults or threats, spreading rumors online, or sharing private information without consent through social media platforms, smartphones, or other technologies (Peebles, 2014). As a result, cyberbullying can occur constantly, as technological advances have afforded continuous communication via smartphones, social media, and other emerging technologies (Perren et al., 2012).

Intimate Partner Violence (IPV) is understood as any abuse or aggression that occurs within a romantic partnership and includes behaviors such as physical, sexual, or psychological violence and stalking (CDC, 2020). Exposure to IPV may also include witnessing parental IPV

as a child, referring to children who witness IPV between parents or caregivers (Stiller, Neubert, and Krieg, 2022). Dating violence (DV) is a term more commonly used to describe a pattern of coercion where one partner uses tactics, including physical, sexual, and/or psychological violence, to maintain power and control in a romantic relationship (National Resources Center on Domestic Violence [NRCDV], 2021). In this dissertation, DV is primarily used in relation to violence that occurs primarily during adolescence and early adulthood.

The terms children, adolescents, youth, early-adults, and college students are also used throughout this research. "Children" typically refers to individuals in elementary school (approximately aged 5-11). "Adolescents" refers to individuals in middle school and high school (approximately aged 12-17), and the term "youth" is also used to describe adolescents. "Early-adults" and "college students" are used to refer to individuals in college (approximately aged 18-25).

Bullying and Cyberbullying During Childhood, Adolescence, and Early Adulthood

Bullying is a prevalent issue in the U.S. as approximately 24% of U.S. children, 20% of U.S. adolescents, and between 20-25% of college students aged were bullied in-person within the past year (Lebrun-Harris et al., 2019). Because cyberbullying is a new issue that primarily affects older individuals (i.e., those who access and use technology more frequently), the prevalence of cyberbullying among U.S. children is not well known. Still, international research suggests that between 13-20% of elementary school students have been cyberbullied within the past year (DePaolis & Williford, 2014; Muller, Skues, & Wise, 2017). However, cyberbullying victimization is a prevalent concern among U.S. adolescents and college students as approximately 15% of U.S. high school students and 20% of college students have experienced cyberbullying (CDC, 2019; Lund & Ross, 2017). Additionally, while research has suggested that

rates of in-person bullying victimization have declined, rates of cyberbullying victimization have increased especially among older students (Luxemburg, Limber, & Olewus, 2019).

The negative mental, physical, and social consequences of bullying and cyberbullying are well-documented. In sum, in-person bullying victimization has been associated with mental health problems such as anxiety, depression, self-harm, and suicidality (Wolke & Lereya, 2015); physical health problems such as injury, headaches, and stomach aches (Juvonen & Graham, 2014); poor academic achievement (e.g., increased absenteeism and decreased academic functioning) and substance use (Rivara, & Le Menestrel, 2016). Cyberbullying victimization has been associated with similar negative outcomes, including depression and anxiety (Kim et al., 2019), low self-esteem (Patchin & Hinduja, 2010), suicidal ideation (van Geel, Vedder, Tanilon, 2014), substance use, self-harm, and social problems (Fisher, Gardella, & Teurbe-Tolon, 2016; Lee et al., 2018; Litwiller et al., 2013).

In response to the well-documented adverse consequences of bullying and cyberbullying and the increasing rates of victimization, Healthy People 2030 identified bullying reduction as one objective in promoting the health, safety, and learning of all individuals in school settings (U.S. Department of Health and Human Services, 2022). In turn, two steps toward bullying reduction are identifying those most vulnerable and examining less understood risk factors for victimization.

Bullying and Cyberbullying Disparities and Risk Factors

Literature has demonstrated that certain groups of people are more vulnerable to bullying than others. Racial and ethnic minority groups, sexual and gender minority groups, and those with intellectual or developmental disabilities are disproportionately affected by in-person

bullying and cyberbullying (Gage et al., 2021; Kahle, 2020). Research has also suggested that children are most vulnerable to in-person bullying, as one's risk of in-person bullying is highest during childhood but then gradually decreases over time (Marengo et al., 2019). Additionally, when compared to in-person bullying victimization, high school students and college students appear more vulnerable to cyberbullying than in-person bullying (Marengo et al., 2019). Social hierarchies are also an important consideration as those perceived as having less social power, those perceived as "weak," or those with fewer friends are also more susceptible to being bullied (U.S. Department of Health and Human Services, 2021).

While there is no sole risk factor for in-person bullying, certain factors have been linked with an increased risk of victimization. First, middle childhood (6-9 years old) represents the greatest risk period for experiencing in-person bullying in the U.S. (U.S. Department of Justice, 2009). Next, most scientific research has demonstrated that children who are disadvantaged or different from their peers in some way are at a greater risk for bullying victimization. For example, one recent U.S. population-based study among children aged 6-11 found statistically significant increased rates of bullying among children who were >100% of the federal poverty level (Prevalence Rate Ratio [PRR]: 1.49, $p < .00001$), had speech or language disorders (PRR: 1.65, $p < .00001$), had special health care needs (PRR: 1.28, $p < .00001$), and who had anxiety or depression (PRR: 1.47, $p < .00001$), as compared to children who did not have these characteristics (Lebrun-Harris et al., 2019).

In respect to cyberbullying, past research conducted among adolescents and college students have suggested that engaging in risky internet behaviors (i.e., communicating online with strangers) is associated with cyberbullying victimization (Guan et al., 2016). Research has also suggested that struggling with anxiety symptoms and playing violent video puts one at an

increased risk of cyberbullying victimization (Huang et al., 2021). And still, other studies have pointed to the ubiquitous and ever-increasing technology use as being a major risk factor for cyberbullying victimization (Zhu et al., 2021).

One less understood risk factor for in-person bullying and cyberbullying victimization is exposure to IPV. Although past studies have suggested that relationships between different types of interpersonal violence exist (Black, Sussman, & Unger, 2010), little is known about associations between IPV and in-person bullying or cyberbullying victimization. Furthermore, IPV-bullying associations may differ depending on the age group examined (Camacho, Ehrensaft, & Cohen, 2012) and associations may also vary according to sex/gender identity (Kim et al., 2019; Whitfield, et al., 2021). Yet, this has not been fully examined by previous research.

Two different forms of IPV were considered for this dissertation: witnessing parental IPV and experiencing DV in a romantic relationship. First, a review of witnessing parental IPV in relation to in-person bullying among children is provided using Attachment Theory as a guiding framework. Second, a review of DV and cyberbullying during adolescence and early adulthood is given using Cultural Violence Theory as a guiding framework. The role of sex/gender identity is also discussed in each section to provide necessary context for this research.

Witnessing Parental IPV and In-Person Bullying

Witnessing parental IPV is a far-reaching public health problem, as national-level research has estimated that approximately 25% of children in the U.S. have witnessed parental IPV before they reach adulthood (Finkelhor, et al., 2015). Witnessing parental IPV has been associated with a range of short- and long-term adverse outcomes, including other types of violence victimization (Hong et al., 2021). Strikingly, research has also suggested that exposure

to parental IPV is more strongly and more positively associated with negative consequences when compared to childhood physical abuse by parents (Huang et al., 2015).

Most prior research on the association between witnessing parental IPV and bullying among children is limited to studies of bullying perpetration, not victimization. Indeed, research has suggested that children and adolescents who are exposed to parental IPV are more like to bully others (Chesworth, Lanier, & Rizo, 2019; Knous-Westfall et al., 2012), but the body of research examining the association between witnessing parental IPV and childhood bullying victimization is inconsistent. Results derived from data collected in 2000 suggest that children exposed to parental IPV have a statistically significant, but marginal, increased risk of bullying victimization (approximately 9%), as compared to those who have not been exposed to parental IPV (Vikse, Nicholson, Chen, & Huang, 2018). In contrast, other research has found no significant association between witnessing parental IPV and bullying victimization (Bauer et al., 2006). Most recently, one population-based study found that exposure to parental IPV was positively associated with childhood bullying victimization among children and adolescents (β=.064, p=.009) (Hong et al., 2021). However, this study was limited to a population of older children and adolescents aged 10-14. Thus, prior research on the possible association between witnessing parental IPV and bullying among children aged 6-9 (i.e., those at greatest risk in middle childhood) is somewhat outdated with conflicting results.

Past research has noted differences in witnessing parental IPV during childhood according to sex/gender identity. While some research has suggested girls are more sensitive to witnessing parental IPV and are more likely to report witnessing parental IPV than boys (Hietamäki, Huttunen, & Husso, 2021), other research has suggested that boys may be more likely to approve of witnessing violence at home than girls (Roberts et al., 2010). There are also

possible differences in bullying victimization according to sex/gender identity. Congruent with some international research (Seo, et al., 2017), a few U.S. studies have found that girls are victimized by bullying more often than boys (Bouffard, L. A., & Koeppel, 2017; Guerra, Williams, & Sadek, 2011). In contrast, other studies suggest that boys are victimized by bullying more often than girls (Gendron, Williams, & Guerra, 2011; Napolitano, et al., 2010). And still, other research indicate that sex differences are only significant when comparing different types of bullying. For example, some research suggests that girls are more likely to experience indirect forms of bullying (i.e., social bullying) while boys are more likely to experience direct forms of bullying (i.e., verbal or physical bullying) (Carbone-Lopez, Esbensen, & Brick, 2010).

Attachment Theory

Attachment theory was used as a guiding framework to understand the association between witnessing parental IPV and in-person bullying among children. Attachment theory posits that the bond between children and their caregivers is critical to social development (Bowlby, 1988). During childhood, children develop beliefs about themselves and expectations for others based on sensitive or insensitive caregiving (Gustaffson et al., 2017). Sensitive caregiving refers to a caregiver's level of attention and response to a child's needs and has been identified by the World Health Organization as a requirement for healthy neurophysiological, physical, and psychological development (Richter, 2004, p.1). Conversely, insensitive caregiving has been conceptualized as inattentive or inconsistent caregiving or the harsh rejection of one's child (Skibo, Sturge-Apple, & Suor, 2020). Sensitive or insensitive caregiving contributes to a child's "internal working model," which impacts how children interact with their peers and is thought to facilitate relationship building early in life (Murphy, T. P., Laible, D., & Augustine, 2017).

Research has shown that children who witness parental IPV struggle to build positive relationships with their peers as their conflict resolution, emotional regulation, and communication skills are less developed (Camacho, Ehrensaft, & Cohen, 2012). Attachment Theory contends that this may be attributed to the effect of insensitive caregiving on one's internal working model, as witnessing parental IPV informs how children understand relationships (Shelton & Harold, 2007). Indeed, congruent with Attachment Theory, past research has demonstrated that children who witness parental IPV have trouble getting along with others and report more conflict in friendships, as compared to those who have not witnessed parental IPV (McCloskey & Stuewig, 2001). In turn, children who witness parental IPV may be more vulnerable to bullying victimization because they struggle to build positive relationships. Moreover, due to possible sex/gender differences, girls and boys may experience or perceive parental IPV differently which may result in differences among those who are bullied.

Dating Violence and Cyberbullying

DV is a major issue among during adolescence as it is estimated that approximately 15% of U.S. high school students have experienced some form of DV (Vagi et al., 2015). DV is also prevalent in early adulthood, as it is estimated approximately 20% of college students have experienced some type of DV (Brewer, Thomas, & Higdon, 2018). Longitudinal research has also demonstrated that DV victimization peaks around 20-25 years old, making college students an especially vulnerable population to this abuse (Johnson et al., 2014).

The mental and physical health consequences of DV across adolescent and early adult populations are widespread. Some of these negative consequences include suicide ideation, depressive symptoms, psychosomatic symptoms, anti-social behavior, academic problems, injury, and substance use (Vagi et al., 2015). DV is also associated with future interpersonal

violence victimization, as past research has demonstrated that those who experience DV in adolescence are at an increased risk of experiencing DV in adulthood (Exner-Cortens et al., 2016). Indeed, a remarkable body of empirical evidence supports the importance of this cycle of violence (Black, Sussman, & Unger, 2010).

There are possible differences in DV and cyberbullying according to sex/gender identity. First, large body of research has demonstrated that the risk of DV and consequences of DV are greater for women than men, especially as it relates to physical injury and psychological damage (Eisner, 2021; Kimmel, 2002; Stets & Straus, 1990). However, differences in cyberbullying victimization according to sex/gender identity are debated by researchers. While some studies suggest women are most vulnerable to cyberbullying victimization (Heiman and Olenik-Shemesh, 2015; Kim et al., 2019), other research suggests there are no differences in cyberbullying victimization according to sex/gender identity (Hinduja & Patchin, 2008; Mishna et al., 2010). Still, other studies suggest that cyberbullying victimization only differs by sex primarily through the electronic technology through which cyberbullying occurs (Foody et al., 2019). For example, results from a recent study of adolescents suggested that boys are more likely to be victimized by cyberbullying while playing large multiplayer video games and other online games through Xbox, PlayStation, Wii, or other similar devices, whereas girls are more likely to be victimized on social media and through online messaging platforms (smart phones, Facebook, etc.) (Foody et al., 2019).

In respect to the discussion of sex/gender identity, is important to also emphasize that among sex/gender identity groups, transgender individuals consistently experience higher rates of cyberbullying and DV victimization when compared to their cis peers (Whitfield, et al., 2021). Indeed, a systematic literature review of 28 studies demonstrated transgender students experience

substantially higher rates of cyberbullying victimization across studies when compared to cisgender students (Abreu & Kenny, 2018). Furthermore, results from a recent nationally representative study of DV among college students also demonstrated that transgender students were at a greater risk of DV when compared to their cisgender peers (Whitfield, et al., 2021).

Because research has suggested those who experience DV are vulnerable to future violence victimization, it may be possible that those who experience DV are also more vulnerable to other types of interpersonal victimization like cyberbullying. While limited, some research conducted in adolescent populations provides context for this association. For example, results from one study of high school demonstrated significant associations between physical bullying and DV (Ellis & Wolfe, 2015). However, the association between DV and cyberbullying, specifically, has not been examined. It has also been suggested that being perceived as "different" from one's peers puts one at an increased risk of being bullied (U.S. Department of Health and Human Services, 2021). In turn, those who experience DV often feel different from their peers, sometimes feeling isolated, making them especially vulnerable to other types of interpersonal violence (Ellis & Wolfe, 2015).

Cultural Violence Theory

Galtung's "Culture of Violence Theory" (CVT) is used to frame the association between DV and cyberbullying (1990). CVT emphasizes that acts of violence may be legitimized and rendered justifiable in society (Galtung, 1990). In sum, cultural violence functions by "changing the moral color" of a violent act, where violence is deemed acceptable in certain circumstances. Cultural violence also functions by distorting reality or making reality "opaque," meaning that violence may go unrecognized, or it may be perceived as less harmful or less serious (Galtung, 1990).

CVT asserts that there are two primary types of violence, direct violence and structural violence, and both types of violence can be positioned within Bronfenbrenner's Socioecological Model (1977) (a commonly used theoretical public health framework). In short, cultural violence operates at the individual or interpersonal levels of the Socioecological Model, whereas structural violence operates at community or societal levels of the Socioecological Model. Importantly, both types of violence are used to threaten life or diminishes one's capacity to meet basic human needs (Galtung, 1990). CVT also contends that direct violence and structural violence are used in response to survival needs, well-being needs, identity needs, or freedom needs. Survival needs refer to violence in response to a threat to one's life; well-being needs refer to violence in response to possible misery or morbidity; identity needs refer to violence in response to alienation or to personal values; and freedom needs refer to violence in response to oppression (Galtung, 1990). Furthermore, CVT asserts that societies deem violence acceptable when used to protect the collective whole or to maintain the "ecological balance" of society (Galtung, 1990). For example, capital punishment is one culturally "justified" act of violence, where murder is used to protect the collective well-being of society.

Through the lens of CVT, cyberbullying victimization may be considered a direct act of violence that is less damaging or less serious when compared to other types of abuse, as it is conducted in a virtual space rather than a physical space. Although DV is condemned by society, cultural beliefs such as rape myths and victim blaming attitudes still minimize the seriousness of victimization (Bandyopadhyay, Deokar, & Omar, 2014; Rollero, C., & De Piccoli, 2020). Furthermore, research has demonstrated these beliefs are often rooted in sexist stereotypes where men and women who experience DV are perceived differently by society (Lelaurain et al., 2019).

From a CVT perspective, these differential attitudes toward those who experience DV according to sex/gender identity might facilitate cultural violence by justifying victimization or undermining its impact on different sexes. For example, men have been stereotypically referred to as the "stronger" sex, and in turn, being labeled as a "victim" of dating violence may lead others to perceive them as "weak" (Taylor, Bates, & Colosi, 2021; Overstreet & Quinn, 2013). In contrast, women who experience DV might be labeled "liars" or even as deserving violence, especially if they are seen as trying to "control" their partners (Rollero & Piccoli, 2020). In turn, being perceived as a liar or deserving of violence may contribute to cyberbullying victimization, as prior research has noted that cyberbullying victims are often perceived as weaker or different than their peers.

Research Questions and Dissertation Purpose

The purpose of this dissertation was to examine associations between exposure to IPV and bullying/cyberbullying victimization among different age groups. In turn, the primary research question guiding this dissertation was, "What is the association between exposure to IPV experiences and bullying?" Because bullying, cyberbullying, and IPV experiences manifest differently according to the age of the population considered, specific associations most relevant to each age group were also of interest to this researcher. Furthermore, this dissertation also sought to examine if sex/gender identity modified the IPV-bullying associations. Thus, the secondary research question of this dissertation was, "Does sex/gender identity modify IPV-bullying associations?"

Preventing and reducing interpersonal violence victimization is a critical facet of public health promotion, as no person deserves to be bullied or cyberbullied and no person should experience IPV. An important part of addressing these issues is identifying risk factors for

victimization, and as others have noted, a better understanding of associations between different types of interpersonal violence is needed. Therefore, this dissertation aimed to fill multiple gaps in the literature by examining less understood violence-related risk factors for bullying and cyberbullying victimization. In turn, this dissertation may serve to inform future bullying, cyberbullying, and IPV prevention and intervention efforts across age groups and in different academic settings.

Study One

The target journal for Study One was the Journal of Family Violence. The research questions and associated hypotheses under consideration are described below.

Research question (RQ) 1: What is the association between witnessing parental IPV and bullying victimization among U.S. children aged 6-9?

Hypothesis (H) 1: Witnessing parental IPV is positively associated with bullying victimization among U.S. children aged 6-9.

RQ2: Does sex/gender modify the association between witnessing parental IPV and bullying victimization among children aged 6-9?

H2: Sex/gender is an effect modifier of the association between witnessing parental IPV and bullying victimization among U.S. children aged 6-9.

Study Two

Study Two was published in the *International Journal of Bullying Prevention*. The research questions and hypotheses used in this study are detailed below.

RQ1: What is the association between dating violence and cyberbullying victimization among adolescents aged 14-18?

H1: Dating violence is positively associated with cyberbullying victimization among adolescents aged 14-18.

RQ2: Does sex/gender modify the association between dating violence and cyberbullying victimization among adolescents aged 14-18?

H2: Sex/gender is an effect modifier of the association between dating violence and cyberbullying victimization among adolescents aged 14-18.

Study Three

The target journal for Study Three was the Journal of American College Health. The research questions and hypotheses used in this study are described below.

RQ1: What is the association between IPV and cyberbullying victimization among college students aged 18-25?

H1: IPV is positively associated with cyberbullying victimization among college students aged 18-25.

RQ2: Does sex/gender modify the association between IPV and cyberbullying victimization among college students aged 18-25?

H2: Sex/gender is an effect modifier of the association between IPV and cyberbullying victimization among college students aged 18-25.

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CHAPTER TWO: Study One

The Association Between Witnessing Parental IPV and Bullying Victimization during Childhood

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Abstract

Purpose: Nearly one-quarter of U.S. children are bullied, and middle childhood (6-9 years old) represents the greatest risk period for bullying victimization. While prior research has suggested older children and adolescents exposed to parental IPV have an increased risk of bullying victimization, this association has not been examined among children aged 6-9. Thus, the purpose of this study was to investigate the parental IPV-bullying in a population-based sample of U.S. children aged 6-9, and to evaluate if sex modifies the association.

Method: 2021 National Survey of Children's Health data from 8,851 children were used. Parents self-reported information on children's exposure to IPV and bullying victimization via an online questionnaire. Multivariate logistic regression was used to calculate odds ratios and 95% confidence intervals of the witnessing parental IPV-bullying association. A stratified analysis was conducted to determine if sex modified the association.

Results: Approximately 37% of children were bullied in the past year. After adjustment, children who witnessed parental IPV had over triple the odds of bullying victimization as compared to those who did not witness parental IPV (AOR: 3.15, 95% CI: 1.97, 5.05). Sex was an effect modifier of the association, with the odds of bullying highest among girls (Girls, AOR: 3.55, 95% CI: 1.86, 6.76; Boys, AOR: 2.92, 95% CI: 1.54, 5.51; Breslow Day test with Tarone adjustment: $p<0.0001$).

Conclusions: These results emphasize the need to address childhood exposure to violence as early as possible. This may protect against bullying early in life and promote health later in life.

Introduction

For many years, bullying was incorrectly considered a 'rite of passage' during childhood (Wolke & Lereya, 2015). Although this perspective has since evolved, bullying remains a well-recognized public health problem (United Nations Educational, Scientific, and Cultural Organization [UNESCO], 2019). Broadly, bullying is understood as any unwanted aggressive behavior used to inflict harm on another person; it is often repetitive and typically involves a power imbalance between individuals (Gladden et al., 2014, p.7). Some common examples of bullying include physical bullying (e.g., punching, kicking, shoving), verbal bullying (e.g., insults, name-calling, threats, intimidation), social bullying (e.g., spreading rumors or lies, ostracizing individuals from a group), and the intentional destruction of a victim's property (Centers for Disease Control and Prevention [CDC], 2021).

Bullying is a prevalent issue during childhood, as it is estimated that globally, nearly one in three children have been bullied within the last month (UNESCO, 2019, p.17). Although rates of bullying in the U.S. have declined marginally over the past decade, nearly one-quarter (24%) of U.S. children still experience bullying (Lebrun-Harris et al., 2020). Bullying prevention is critical, as the consequences of bullying are widespread. Bullying victimization is associated with mental health problems such as anxiety, depression, self-harm, and suicidality (Wolke & Lereya, 2015); physical health problems such as injury, headaches, and stomach aches (Juvonen & Graham, 2014); poor academic achievement, and substance use (Rivara, & Le Menestrel, 2016).

Middle childhood (6-9 years old) represents the greatest risk period for experiencing bullying in the U.S., and most scientific research has demonstrated that children who are disadvantaged or different from their peers in some way are at greater risk for bullying

victimization (U.S. Department of Justice, 2009). One recent U.S. population-based study among children aged 6-11 found statistically significant increased rates of bullying among children who were >100% of the federal poverty level (Prevalence Rate Ratio [PRR]: 1.49, p <.00001), had speech or language disorders (PRR: 1.65, p <.00001), had special health care needs (PRR: 1.28, p <.00001), and who had anxiety or depression (PRR: 1.47, p <.00001), as compared to children who did not have these characteristics (Lebrun-Harris et al., 2019). Racial and ethnic minority groups and those with intellectual or developmental disabilities are also disproportionately victimized by bullying (Gage et al., 2021). However, sex differences among childhood bully victims are less clear. Congruent with some international research (Seo et al., 2017), a few U.S.-based studies have also suggested that there are differences in bullying victimization based on children's sex, where girls are victimized by bullying more often than boys (Bouffard, & Koeppel, 2017; Guerra, Williams, & Sadek, 2011). Still, results from other studies have suggested that boys are victimized by bullying more often than girls (Gendron, Williams, & Guerra, 2011; Swearer et al., 2010).

Adverse childhood experiences have also been associated with an increased risk of bullying victimization among children (Lebrun-Harris et al., 2019). One adverse childhood experience that may disproportionately put children at risk for bullying victimization is witnessing parental intimate partner violence (IPV). IPV is understood as any abuse or aggression that occurs within a romantic partnership and includes behaviors such as physical, sexual, or psychological violence and stalking. IPV victimization is a persistent issue in the U.S., as it is estimated that approximately 36% of women and 33% of men have experienced IPV in their lifetime (Smith et al., 2018). Prior research has also suggested that the risk of IPV is greater in households with children as compared to households without children (Fantuzzo & Fusco,

2007). Furthermore, it is estimated that approximately 10% of U.S. children have witnessed parental IPV in the past year and 25% of children have witnessed at least one instance of parental IPV during childhood, according to results from the National Survey of Children's Exposure to Violence (Finkelhor et al., 2015).

Research has indicated that children who witness parental IPV experience greater physical, psychological, social, and behavioral consequences than children who do not witness parental IPV (Sharman et al., 2021). To begin, studies have suggested that during childhood witnessing parental IPV is associated with reduced quality of life satisfaction and sense of security, mental health disorders including post-traumatic stress disorder (PTSD), and poor academic performance (Stiller et al., 2022; Wood & Sommers, 2011). Moreover, research has also demonstrated that the consequences of witnessing parental IPV vary depending on the age of the child witness. For example, witnessing parental violence as an infant has been associated with poor sleeping habits and eating problems; witnessing parental violence from age 3-5 years old (pre-school age) has been associated with separation anxiety and regressive behaviors; and witnessing parental violence from age 6-11 has been associated with self-blame, aggressive behavior, and regressive behavior (Stiles, 2002). Furthermore, studies have suggested that children aged 6-9, also referred to as "middle-childhood," who witness parental IPV report blaming themselves for the abuse they witness more often than children of other age groups (Jaffe et al., 1986). During middle childhood, children who witness parental IPV also report greater rates of trouble making friends and lower rates of participation in extracurricular activities compared to preschool-aged children and adolescents (Weaver, Borkowski, & Whitman, 2008). Indeed, middle childhood represents an especially vulnerable period for experiencing violence, as results from the National Survey of Children's Exposure to Violence

also demonstrated that children aged 6-9 are at "peak" risk for experiencing assault by a sibling and assault with no weapon or injury when compared to preschool age children and adolescents (U.S. Department of Justice, 2009).

Literature has suggested that children who witness parental violence are at greater risk of experiencing violence themselves (Huecker et al., 2022). For instance, one recent longitudinal study demonstrated that witnessing parental violence during childhood is associated with future dating violence victimization in adolescence and IPV victimization in adulthood (Huecker et al., 2022). Given that witnessing parental IPV may be associated with future IPV victimization, it is vital to examine how witnessing parental IPV is related to other types of interpersonal violence. As previously mentioned, the consequences of witnessing parental IPV during middle-childhood are severe, with middle-aged children representing one of the most vulnerable populations for witnessing parental IPV. Notably, middle-childhood is also considered the greatest risk period for experiencing bullying, but the relationship between witnessing parental IPV and bullying victimization among children aged 6-9 is unclear.

Theoretical Framework

Witnessing violence at home may normalize violence in peer relationships, putting those who witness parental IPV at greater risk for bullying victimization. One theory that may explain this relationship is Attachment Theory. Attachment Theory posits that the bond between children and their caregivers is critical to social development (Bowlby, 1988). Children develop beliefs about themselves and expectations for others during childhood based on sensitive or insensitive caregiving (Gustaffson et al., 2017). Sensitive caregiving refers to a caregiver's level of attention and response to a child's needs. It has been identified by the World Health Organization as a requirement for healthy neurophysiological, physical, and psychological

development (Richter, 2004, p.1). In short, sensitive caregiving has been conceptualized as the ability of a caregiver to notice and respond to a child's needs. Sensitive caregiving includes characteristics such as supportive behaviors (attentiveness, availability, providing a secure home base), positive affect (warmth, empathy, affection), and consistency in the presence and availability of the caregiver (Dunst & Kassow, 2008). Conversely, insensitive caregiving has been conceptualized as inattentive or inconsistent caregiving or the harsh rejection of one's child (Skibo, Sturge-Apple, & Suor, 2020). Sensitive or insensitive caregiving contributes to a child's "internal working model," which impacts how children interact with their peers and is thought to facilitate relationship-building early in life (Murphy, Laible, & Augustine, 2017).

Research has shown that children who witness parental IPV struggle to build positive relationships with their peers as their conflict resolution, emotional regulation, and communication skills are less developed (Camacho, Ehrensaft, & Cohen, 2012). Attachment Theory contends that this may be attributed to the effect of insensitive caregiving on one's internal working model, as witnessing parental IPV informs how children understand relationships (Shelton & Harold, 2007). Congruent with Attachment Theory, past research has demonstrated that children who witness parental IPV have trouble getting along with others and report more conflict in friendships than those who have not witnessed parental IPV (McCloskey & Stuewig, 2001). In turn, children who witness parental IPV may be more vulnerable to bullying victimization because they struggle to build positive relationships. There are also possible sex differences among children who witness parental IPV, as some research suggests that girls are more likely to report witnessing parental IPV than boys (Hietamäki, Huttunen, & Husso, 2021), and that boys may be more likely to approve of witnessing violence at home than

girls (Roberts et al., 2010). Moreover, if girls and boys experience or perceive parental IPV differently, this may result in sex differences among bullied people .

Most prior research on the association between witnessing parental IPV and bullying has examined bullying perpetration as the primary outcome. Indeed, research has suggested that children and adolescents who are exposed to parental IPV are more like to bully others (Chesworth, Lanier, & Rizo, 2019; Knous-Westfall et al., 2012), but the body of research examining the association between witnessing parental IPV and childhood bullying victimization, in particular, is inconsistent. Results derived from data collected in 2000 suggest that children exposed to parental IPV have a statistically significant but marginal increased risk of bullying victimization (approximately 9%), as compared to those who have not been exposed to parental IPV (Vikse Nicholson, Chen, & Huang, 2018). Conversely, even earlier research found no statistically significant association between witnessing parental IPV and bullying victimization (Bauer et al., 2006). More recently, one study that used population-based data from 2016 found that exposure to parental IPV was positively associated with childhood bullying victimization among children and adolescents aged 10-14 (β=.064, p=.009) (Hong et al., 2021). However, it is not clear if this relationship extends to children younger than 10 years old.

In summary, prior research on the possible association between witnessing parental IPV and bullying is sparse, with varied findings that are mostly limited to studies of older children and adolescents. Thus, the purpose of this study was to examine the association between witnessing parental IPV and bullying victimization among younger children aged 6-9 using 2021 National Survey of Children's Health data and to evaluate if this association is modified by sex. In turn, this study's two primary research questions were: what is the association between witnessing parental IPV and bullying victimization among U.S. children aged 6-9? And, does

sex modify the association between witnessing parental IPV and bullying victimization among children aged 6-9?

Methods

This secondary data analysis used 2021 National Survey of Children's Health (NSCH) data. The NSCH is a cross-sectional, nationally representative survey conducted by the Maternal and Child Health Bureau division of the U.S. Census Bureau for the Health and Human Resources Service Administration. The NSCH gathers data on children's mental and physical well-being, family life, school experiences, and neighborhood and community attributes (U.S. Census Bureau, 2021). A stratified random address-based sample of all 50 states and the District of Columbia was retrieved from the U.S. Census Bureau's Master Address File. Households were recruited by mail invitation and a brief screener was provided to identify if at least one child aged 0-17 residing in that household. Following screening and informed consent, researchers randomly selected one child to be the subject of the main topical questionnaire. One parent or caregiver familiar with the child's needs was then directed to fill out the survey linked to their child's age group (categorized as 0-5 years old, 6-11 years old, and 12-17 years old). The questionnaire took approximately 35 minutes, and the average weighted response rate was 40% (U.S. Census Bureau, 2021). Children aged 0-5 and children with special health care needs were oversampled and survey data were weighted to represent the population of non-institutionalized children residing in U.S. households (U.S. Census Bureau, 2021).

The total sample size for the 2021 NSCH was 50,892 participants. As this study aimed to examine the relationship between witnessing parental IPV and bullying victimization between children aged 6-9; participants were excluded if they were aged 0-5 or 10-17 (n=41,433). Participants were also excluded if they were missing data related to bullying (n=139), witnessing

parental IPV (n=302), family structure (n=52), attention deficit/hyperactivity disorder (ADHD) (n=44), autism (n=35), or behavior problems (n=36). Thus, the final analytic sample consisted of 8,851 participants.

The primary exposure in this study was witnessing parental IPV. Witnessing parental IPV was measured by the question, "To the best of your knowledge, has your child seen or heard parents or adults slap, hit, kick, or punch one another in the home?" Response options included "yes" or "no." If a parent responded "yes," the child was considered exposed, and the referent category included those who responded "no."

The outcome of interest in this study was bullying victimization. Bullying victimization was measured by the question, "During the past 12 months, how often was this child bullied, picked on, or excluded by other children?" Response options included: never (in the past 12 months), 1-2 times (in the past 12 months), 1-2 times per month, 1-2 times per week, or almost every day. Children who were bullied at least once in the past year were considered as having been bullied, and those who responded never were considered as having not been bullied, which is consistent with how bullying victimization has been defined in other studies (Lebrun-Harris, Sherman, Miller, 2020).

Sex was considered as a possible effect modifier of the witnessed parental IPV-bullying association. Sex was measured by the question, "What is the child's sex?" Response options included male or female. After a review of existing IPV and childhood bullying literature, ADHD, autism, behavior problems, family structure, family size, income, and race were considered as possible confounders in this analysis (Huecker et al., 2022).

Descriptive statistics were conducted using frequencies and percentages. Logistic regression was used to calculate unadjusted odds ratios (ORs) and 95% confidence intervals (CIs). Multivariate logistic regression was also used to obtain adjusted odds ratios (ORs) and 95% confidence intervals (CIs) of the association between witnessing parental IPV (exposure) and bullying victimization (outcome). The change in estimate criterion strategy (cutoff point of 10%) was used to determine confounding variables (Maldonado & Greenland, 1993). Stratified analysis and the Breslow Day test with Tarone adjustment of Homogeneity were conducted to examine whether sex modified the witnessing parental-IPV-bullying victimization association. Given the complex sampling design used by the NSCH, SAS 9.4 survey procedures were used to conduct a weighted analysis.

Results

As shown in Table 1.1, the majority of children aged 6-9 were non-Hispanic White (53.18%), male (51.36%), had two parents who were currently married (67.26%), and had at least one sibling (84.01%). Nearly 40% of children were bullied in the past year (37.03%) and approximately 4.73% witnessed parental IPV. Children diagnosed with ADHD had 2.5 times the odds of bullying victimization (OR: 2.5; 95% CI: 1.85, 3.37; Table 2.1) and children with diagnosed behavior problems had over three times the odds of bullying victimization (OR: 3.53, 95% CI: 2.59, 4.80; Table 2.1). Children living in households whose average household income was greater than 100% federal poverty level (FPL) had increased odds of bullying victimization, as compared to children from households within 0-99% FPL (100-199% FPL, OR: 1.26, 95% CI: 0.89, 1.77; 200-399% FPL, OR: 1.60, 95% CI: 1.17, 2.17; > 400% FPL, OR: 1.75, 95% CI: 1.29, 2.36; Table 2.1). In contrast, racial minority children had reduced odds of bullying compared to their non-Hispanic White counterparts (Hispanic, OR: 0.59, 95% CI: 0.44, 0.79; Non-Hispanic

Black, OR: 0.53, 95% CI: 0.39, 0.73; Non-Hispanic Multi-racial, OR: 0.67, 95% CI: 0.51, 0.88; Table 2.1).

In the unadjusted analysis, children who witnessed parental IPV had nearly triple the odds of bullying victimization as compared to those who had not witnessed parental IPV (OR: 2.84, 95% CI: 1.88, 4.31; Table 2.1). After adjustment for ADHD, family structure, and average household income, the association increased and remained statistically significant. Specifically, children who witnessed parental IPV had over triple the odds of bullying victimization as compared to those who did not witness parental IPV (AOR: 3.15, 95% CI: 1.97, 5.05; Table 3.1). Furthermore, results from the stratified analysis suggest that sex is a possible effect modifier of this association (Breslow Day Tarone test: $p<0.0001$; Table 4.1). Among female children, witnessing parental IPV was associated with over three and a half times the odds of bullying victimization (AOR: 3.55, 95% CI: 1.86, 6.76; Table 4.1), and among male children, witnessing parental IPV was associated with nearly triple the odds of bullying victimization (AOR: 2.92, 95% CI: 1.54, 5.51; Table 4.1).

Discussion

The purpose of this study was to examine the association between witnessing parental IPV and bullying victimization among a population-based sample of U.S. children aged 6-9. Results from this study suggest an association between witnessing parental IPV and bullying victimization, as children who witnessed parental IPV had increased odds of being bullied at least once in the past year. This is the first study to examine this relationship specifically during middle childhood (aged 6-9), filling a necessary gap in the literature. This study also builds upon the existing childhood violence and bullying literature by illuminating possible differences in

bullying victimization by sex, as the witnessing parental IPV-bullying relationship was highest among female children.

These findings build upon existing literature on witnessing parental violence and childhood bullying in many ways. Given that prior research has suggested older children and adolescents (aged 10-14) exposed to parental IPV have an increased risk of bullying victimization (Hong et al., 2021; Vikse Nicholson, Chen, & Huang, 2018), our results suggest that this relationship may also extend to younger children (aged 6-9). While some research has pointed to behavioral issues and income disparities as being responsible for an increased risk of bullying victimization among children who witness parental IPV, in the present study, the witnessing parental IPV-bullying association remained after controlling for ADHD and average household income, pointing to the possible direct influence that witnessing parental IPV has on childhood bullying.

Considering these findings within the context of the "intergenerational transmission of violence" and the key components of Attachment Theory is important. The intergenerational transmission of violence refers to the cyclical nature of witnessing or experiencing violence during childhood and future violence victimization in adulthood (Avakame, 1998). A large body of research supports the importance and influence of this cycle (Black, Sussman, & Unger, 2010). From the lens of Attachment Theory, the intergenerational transmission of violence is best understood by examining the influence witnessing violence during childhood has on one's internal working model. For example, children who witness violence may be more vulnerable to experiencing violence themselves because violence becomes "embedded" within their internal working model (McKellen & Killeen, 2000). When children are bystanders to violence between their parents, it is terrifying, especially because parents cannot console or care for them in the

moment (Gustaffson et al., 2017). If children's emotional needs are not met during a traumatizing experience, such as witnessing parental IPV, their view of personal relationships is negatively impacted (Shelton & Harold, 2007). This concept was best illustrated by Ehrensaft and colleagues (2003), who, in their 20-year longitudinal study, demonstrated that witnessing parental violence in childhood was the strongest predictor of experiencing IPV in early-adulthood. Most notably, their results suggest that witnessing parental violence was an even stronger predictor of future IPV than experiencing child abuse by parents, further emphasizing the importance of witnessing violence on children's internal working model (Ehrensaft, 2003). Regarding the current study, our results suggest that witnessing parental IPV may also result in more immediate interpersonal consequences (i.e., bullying), which may contribute to the cycle of violence.

The results from the present study also suggest that sex is an effect modifier of the witnessing parental IPV-bullying relationship, as the odds of bullying victimization were higher among female children who witnessed parental IPV than among male children who witnessed parental IPV. This is an interesting finding, and it is consistent with some other research suggesting that the prevalence of bullying victimization is greater among girls than among boys (Pontes, Strohacker, & Pontes, 2021). Still, to understand possible reasons for the observed differences in bullying victimization by sex, it is important to consider further how girls and boys view parental IPV. Research has consistently shown that girls and boys view witnessing violence between parents differently, where girls are more likely to report witnessing parental violence than boys (Hietmaki, Huttunen, & Husso, 2021). In turn, if girls and boys perceive parental IPV differently, this may result in sex differences among bullied people. Specifically, if girls are more likely to recognize violence as "violence," they would also be at greater risk for

experiencing the violence-related consequences (i.e., bullying). Another explanation for the differences in bullying victimization may be related to the broader gendered nature of violence. Literature suggests that boys who witness violence exhibit externalizing behaviors such as lashing out, hostility, and aggression. In contrast, girls who witness violence, tend to exhibit internalizing behaviors such as anxiety, depression, and somatic issues (Hietmaki, Huttunen, & Husso, 2021). Studies have also shown that boys may be more likely to view parental violence favorably, meaning that they do not recognize it as harmful or that it has been normalized (Roberts et al., 2010). In turn, if girls are more likely to recognize parental violence and internalize the impact of witnessing violence, they may be especially vulnerable to negative interpersonal consequences like bullying.

While the findings of this study are considerable, this study had several limitations. Due to the cross-sectional study design, a temporal relationship between the exposure and the outcome variable could not be established. Thus, it is not impossible to know whether witnessing parental IPV preceded bullying victimization or vice versa. Non-differential misclassification of the exposure variable, witnessing parental IPV, and the outcome variable, bullying, was possible as parents self-reported the behaviors of their children. Parents may have also underreported their children's experience of witnessing parental IPV as it is a sensitive topic that is difficult to disclose due to social desirability concerns. Still, parental self-report is frequently used to measure children's exposure to violence (Oh et al., 2018). Some research suggests that mothers are more likely to accurately report their children's exposure to violence than children who self-report their exposure to violence (Hamby & Finklelhor, 2000). In this study, 70% of the adult respondents were mothers, who could alleviate some concerns related to non-differential misclassification of the exposure. Parents may also underreport children's

experiences with bullying, as parents typically rely on children or teacher's verbal disclosure of their child's bullying experiences rather than witnessing the bullying themselves (Tremblay-Perreault, Hébert, & Amédée, 2022). However, some research has suggested that elementary school children (similar to the age range used in the present study) are more likely to disclose bullying victimization to their parents when compared to middle school children and adolescents (Holt et al., 2008). Finally, as this study utilized publicly available secondary data, it was impossible to control for all potential confounding factors.

Despite these limitations, this study also had many strengths. First, this study fills a gap in the children's health literature by examining a less understood risk factor for bullying victimization: witnessing parental IPV. To our knowledge, no previous study has explored the association between witnessing parental IPV and bullying victimization, specifically during middle-childhood. Again, middle-childhood represents the greatest risk period in one's life for bullying victimization, and these results reflect this vulnerable population. Additionally, no recent study has examined sex as an effect modifier of this association. As such, the results from the present study may contribute to gender and childhood interpersonal violence literature. Finally, this study was also strengthened by using a large, recent, nationally representative dataset, which may allow for generalizing these results to U.S. children aged 6-9.

Bullying prevention is critical across all ages and populations, as no person deserves to be bullied. Still, a more comprehensive understanding of how witnessing parental IPV operates as a risk factor for bullying victimization is needed and should be examined in future research. To best meet the needs of this vulnerable population of young people, future studies should also investigate sex as an effect modifier and explore if it functions similarly in older populations of

children. Given the far-reaching consequences of bullying victimization, preventing bullying as early in life as possible is of the utmost importance to promote health across the lifespan.

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Table 1.1: Descriptive statistics of children aged 6-9, 2021 NSCH (N=8,851)

Characteristic	Frequency	Weighted Percent
ADHD		
No	7,734	90.33%
Yes	917	9.67%
Age		
6 years old	2,403	24.49%
7 years old	2,149	24.76%
8 years old	2,134	25.17%
9 years old	2,165	25.58%
Autism		
No	8,539	96.28%
Yes	312	3.72%
Behavior problems		
No	7,866	90.55%
Yes	985	9.45%
Bullied in the past year		
No	5,010	62.97%

Yes	3,841	37.03%
Family structure		
Two parents currently married	6,346	67.26%
Two parents not currently married	527	6.00%
Single parent	1,679	22.96%
Grandparent or other family type	299	3.78%
Income		
0-99% FPL	1,117	17.84%
100-199% FPL	1,442	19.90%
200-399% FPL	2,754	28.63%
> 400% FPL	3,538	33.63%
Number of siblings		
0	2,198	15.99%
1	4,154	43.49%
2	1,703	26.94%
3 or more	796	13.58%
Race		
Hispanic	1,148	23.53%

Non-Hispanic White	5,926	53.18%
Non-Hispanic Black	528	12.59%
Non-Hispanic Multi-Racial	1,249	10.70%
Sex		
Female	4,194	48.64%
Male	4,657	51.36%
Witness Parental IPV		
No	8,434	95.27%
Yes	417	4.73%

Table 2.1: Unadjusted associations of select characteristics and bullying victimization, 2021 NSCH

Characteristic	Unadjusted Odds Ratio	95% Confidence Interval
ADHD		
No	1.00	Referent
Yes	2.50	(1.85, 3.37)
Age		
6 years old	1.00	Referent
7 years old	1.14	(0.90, 1.46)
8 years old	1.01	(0.77, 1.31)
9 years old	1.16	(0.91, 1.49)
Autism		
No	1.00	Referent
Yes	1.40	(0.87, 2.27)
Behavior problems		
No	1.00	Referent
Yes	3.53	(2.59, 4.80)
Family structure		
2 parents currently married	1.00	Referent

2 parents not married	0.90	(0.61, 1.34)
Single parent	0.83	(0.66, 1.04)
Grandparent or other family type	0.84	(0.54, 1.31)
Income		
0-99% FPL	1.00	Referent
100-199% FPL	1.26	(0.89, 1.77)
200-399% FPL	1.60	(1.17, 2.17)
> 400% FPL	1.75	(1.29, 2.36)
Number of siblings		
0	1.00	Referent
1	0.90	(0.72, 1.13)
2	0.80	(0.61, 1.03)
3 or more	0.73	(0.54, 0.99)
Race		
Hispanic	0.59	(0.44, 0.79)
Non-Hispanic White	1.00	Referent
Non-Hispanic Black	0.53	(0.39, 0.73)
Non-Hispanic Multi-Racial	0.67	(0.51, 0.88)

Sex		
Female	1.00	Referent
Male	1.33	(1.11, 1.59)
Witness Parental IPV		
No	1.00	Referent
Yes	2.84	(1.88, 4.31)

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Table 3.1: Adjusted association between witnessing parental IPV and bullying victimization

Characteristic	**Adjusted Odds Ratio**	**95% Confidence Interval**
Witness parental IPV		
No	1.00	Referent
Yes	3.15*	(1.97, 5.05)

*Adjusted for ADHD, family structure, and average household income

Table 4.1: Adjusted association of witnessing parental IPV and bullying victimization, stratified by sex

Characteristic	**Adjusted Odds Ratio**	**95% Confidence Interval**
Females		
Witness parental IPV		
No	1.00	Referent
Yes	3.55*	(1.86, 6.76)**
Males		
No	1.00	Referent
Yes	2.92*	(1.54, 5.51)**

*Adjusted for ADHD, family structure, and average household income
**Breslow Day Tarone Test for homogeneity of odds ratios (Pr > ChiSq = < .0001)

CHAPTER THREE: STUDY TWO

Associations Between the Frequency of Youth Dating Violence Victimization and Cyberbullying

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ABSTRACT

PURPOSE: The purpose of this study was to examine how the frequency of physical dating violence (PDV), sexual dating violence (SDV), and forced sexual intercourse (FSI) is associated with cyberbullying, and whether sex modified these associations among a nationally representative sample of U.S. youth.

METHODS: 2017 and 2019 Youth Risk Behavior Surveillance System survey (YRBSS) data from 14,655 students were used. Youth reported the frequency of PDV, SDV, and FSI in a self-administered questionnaire, with aggregate categories of 0 times, 1 time, 2-3 times, or 4 or more times. Cyberbullying was also self-reported. Multivariate logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs) of the PDV, SDV, FSI-cyberbullying associations. Stratified analyses were used to determine if sex was an effect modifier of the PDV, SDV, and FSI-cyberbullying associations.

RESULTS: Approximately 16% of students reported having been cyberbullied in the last 12 months. After adjustment, there was a statistically significant dose-response relationship between the frequency of SDV and cyberbullying (1 time: OR=3.09, 95% CI: 2.43, 3.93; 2-3 times: OR=3.81, 95% CI: 3.35, 7.97; ≥ 4 times: OR=5.17, 95% CI: 3.35, 5.17; referent 0 times). A similar dose-response relationship was observed for both PDV and FSI. Stratified analysis results suggest that sex may modify these associations.

CONCLUSIONS: These results underscore the need to address youth dating violence as early as possible, with special attention to gender, as this may also prevent other types of victimization, like cyberbullying.

Keywords: Intimate Partner Violence; Cyberbullying; Adolescent Health

List of Abbreviations

CDC: Centers for Disease Control and Prevention

YRBSS: Youth Risk Behavior Surveillance System survey

PDV: Physical dating violence

SDV: Sexual dating violence

FSI: Forced sexual intercourse

Introduction

Cyberbullying, known as psychological harm intentionally inflicted on others by individuals or groups using electronic technologies, is a serious health problem among U.S. youth (Kowalski & Limber, 2007). Cyberbullying behaviors are multifarious and may include insulting or threatening others, spreading rumors, or sharing private information without consent through social media platforms, cell phones, or other technologies (Peeble, 2014). Although cyberbullying research has grown considerably within the last fifteen years, the estimated prevalence of cyberbullying among U.S. youth is less clear. Estimates of the prevalence of U.S. youth cyberbullying victimization are inconsistent, ranging between 3-72% (Hinduja & Patchin, 2020; Selkie, Fales, & Moreno, 2016; Tokunaga, 2010). Researchers have suggested that the variation in estimates of cyberbullying prevalence is likely due to the mixed definitions of cyberbullying (Tokunga, 2010), the different temporal measurements of cyberbullying victimization (e.g., within the last year versus within the last six months), and the variation in study participants (e.g., age ranges, special populations, etc.) (Kowalski, Limber, & McCord 2019). Still, despite inconsistencies, it remains clear that a considerable number of U.S. youth experience cyberbullying.

The consequences of youth cyberbullying are far-reaching, as cyberbullying has been associated with a host of negative mental and physical health outcomes (Kowalski & Limber, 2013). For instance, cyberbullying has been associated with depression and anxiety (Kim et al., 2019), low self-esteem (Patchin & Hinduja, 2010), and suicidal ideation among youth (van Geel, Vedder, & Tanilon 2014). Cyberbullying has also been associated with negative physical and social health outcomes such as substance use, self-harm, and social problems (Fisher, Gardella, & Teurbe-Tolon, 2016; Lee et al., 2018; Litwiller et al., 2013).

Essentially any adolescent with access to the internet, cell phones, computers/tablets, or other technology devices can be affected by cyberbullying. Furthermore, studies show that these technologies are nearly commonplace among youth, as it is estimated that approximately 95% of U.S. youth between the ages of 13-17 own or have access to a smartphone and 45% report being online "nearly constantly" (Anderson & Jiang, 2018). That said, there are certain factors thought to be associated with an increased risk of cyberbullying victimization. For instance, emerging research has suggested that individuals who internalize symptoms such as depression, anxiety, or suicide ideation and those who externalize problems such as anger, aggression, and delinquency are at greater risk for cyberbullying victimization (Casper & Card, 2017; Fisher, Gardella, & Teurbe-Tolon, 2016; Holfeld & Mishna, 2019). In other words, the negative health outcomes that many victims suffer from also appear to put adolescents at greater risk for future victimization.

One theoretical model used to understand the reciprocal relationship between internalizing symptoms, externalizing problems, and the risk of cyberbullying is the Interpersonal Risk model. In short, the Interpersonal Risk model asserts that all relationships involve the exertion of influence and control for one's benefit (Lundstedt, 1966). As a result, individuals involved in harmful relationships may be more likely to experience internalizing symptoms or externalizing problems that also put them at risk for other types of victimization. Previous research has used the Interpersonal Risk model as a framework for understanding pathways between peer relationships and cyberbullying victimization (Holfeld & Mishna, 2019). Similarly, past research has also used this model to examine consequences related to adolescents in harmful romantic relationships, where these relationships are marked by the control of one partner over the other partner (Yeung & Leadbeater, 2010). This is an important consideration, as an estimated 50% of youth are involved in at least one dating relationship during high school

(Wolf & Temple, 2018). Therefore, using the Interpersonal Risk model as a framework, dating violence victims may be at an increased risk for cyberbullying victimization. However, to the best of our knowledge, this relationship has not yet been explored.

Like cyberbullying, youth dating violence is a serious health concern among U.S. youth. Youth dating violence is typically defined as experiencing physical violence (hitting or slapping), sexual violence (forcing a partner to engage in a sexual act when she/he does not want to), psychological violence (intentionally harmful verbal or non-verbal communication), or stalking (persistent, unwanted attention that causes fear) (Centers for Disease Control & Prevention [CDC], 2020). It is estimated that approximately 20% of U.S. females and 10% of U.S. males in high school have experienced some form of dating violence within the past year (Vagi et al., 2015). The negative consequences of youth dating violence victimization are widespread and include suicide ideation, depressive symptoms, anti-social behavior, and substance use (Vagi et al., 2015).

While on the surface youth dating violence and cyberbullying may appear to be conceptually similar, there are several key features that distinguish cyberbullying from youth dating violence. To begin, there are notable differences within the definitions of these constructs, with a primary distinction in the relationship between the perpetrator and the victim. Youth dating violence occurs between individuals in an affectionate (but harmful) romantic relationship, whereas cyberbullying occurs between individuals who generally have no affinity for one another (Hinduja & Patchin, 2011; Peters, Hatzenbuehler, & Davidson, 2017). Therefore, the most notable distinction between youth dating violence and cyberbullying is the relationship between the perpetrator and the victim. Another difference between cyberbullying and youth dating violence is that cyberbully perpetrators have a technological “barrier” between

themselves and their victim (Perren et al., 2012). As a result, cyberbullying is not limited by time or space restrictions (Mehari, et al., 2014). Similarly, another distinguishing feature between cyberbullying and youth dating violence is the potential for anonymity. Due to the nature of various technological applications and social media platforms, cyberbullying perpetrators can often remain anonymous (Slonje, Smith, & Frisen, 2012). In contrast, youth dating violence occurs between two individuals who know each other and are engaged in a romantic relationship.

Literature has suggested that individuals who bully others, including their romantic partners, often receive positive affirmation from their peers, thus increasing their popularity in social circles (Miller et al., 2013). This is problematic, in that it normalizes aggression in adolescent relationships and rewards dangerous behaviors. Furthermore, some literature has suggested that youth dating violence is associated with bullying victimization, as youth in volatile relationships may be more vulnerable to other types of peer aggression (Ellis & Wolfe, 2015; Miller et al., 2013). However, research on this topic typically limits their definition of bullying to face-to-face bullying. Whether this relationship also extends to cyberbullying is not fully known. Additionally, the frequency of dating violence experiences may impact the risk of cyberbullying victimization, as previous literature has indicated that youth who experience dating violence victimization more frequently are more vulnerable to increased negative health effects (Nahapetyan, et al., 2014).

A better understanding of the relationship between youth dating violence and cyberbullying is needed to inform prevention efforts among U.S. youth. To our knowledge, no nationally representative analysis of the relationship between the frequency of youth dating violence and cyberbullying victimization has been conducted. Therefore, the objective of the

current study was to examine the relationship between youth dating violence victimization and cyberbullying victimization. To also consider and compare the impact of other, related types of interpersonal violence among youth, the present study also examined the relationship between forced sexual intercourse outside of a dating relationship and cyberbullying victimization. Lastly, we also evaluated whether sex modified any of the aforementioned associations. As the Interpersonal Risk model asserts that harmful relationships may put individuals at risk for other types of victimization (via internalizing symptoms and externalizing problems) (Holfeld & Mishna, 2019), we hypothesized that youth who experienced dating violence and that youth who experienced forced sexual intercourse would have increased odds of cyberbullying victimization, and that sex would modify these associations.

METHOD

Data Source

Data were retrieved from the Centers for Disease Control and Prevention's 2017 and 2019 Youth Risk Behavior Surveillance System (YRBSS) survey. The YRBSS is a cross-sectional, nationally representative survey (conducted every two years) that tracks adolescent health behaviors associated with the leading causes of death in the U.S (Underwood et al., 2020). The YRBSS is administered at public and private high schools in every state and the District of Columbia. A three-stage cluster sampling protocol and the oversampling of minority students is utilized to achieve a nationally representative sample of 9-12th grade youth (Underwood et al., 2020). Student participation is voluntary, and the survey is administered during a regular class period where youth self-report their responses via computer-based questionnaire. The survey takes approximately 45 minutes to complete, and survey data are weighted to account for student non-response (Underwood et al., 2020). The Center's for Disease Control and Prevention's

Institutional Review Board approved the 2017 and 2019 YRBSS study designs. As this was a secondary data analysis of routinely collected, de-identified data, additional ethical approval was not necessary.

Participants

The total sample size for the combined 2017 and 2019 YRBSS was 28,442 students, and the overall response rate for both surveys was approximately 60% (Kann et al., 2018; Underwood et al, 2019). For this analysis, student participants were excluded if they did not date or go out with anyone during the past 12 months (n =8,746), if they were younger than 14 years old or did not provide their age (n = 143), or if they did not respond to questions related to forced sexual intercourse (n = 4,054), grade (n = 59), sex (n = 45), race/ethnicity (n = 217), sexual orientation (n = 429), or presence of cyberbullying (n = 76). Thus, the final analytic sample included 14,655 male and female high school students aged 14-18.

Measures

There were three main exposures in this study: physical dating violence (PDV), sexual dating violence (SDV), and forced sexual intercourse (FSI). These variables are all included as part of the YRBSS's sexual violence construct. PDV was measured by the question: "How many times did someone you were dating or going out with physically hurt you on purpose? (Count such things as being hit, slammed into something, or injured with an object or weapon)." SDV was measured by the question: "During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do?" FSI was measured by the question: "During the past 12 months, how many times did anyone force you to do sexual things that you did not want to do?" Both SDV and FSI questions specified

kissing, touching, or being physically forced to have sexual intercourse as being "unwanted sexual things."

The exposures PDV, SDV, and FSI were measured using frequency scales. For PDV and SDV, students responded either: "I did not date or go out with anyone during the past 12 months," or " 0 times, 1 time, 2 or 3 times, 4 or 5 times, or 6 or more times." As previously mentioned, students who did not date or go out with anyone during the past 12 months were excluded from the analysis. For FSI, students responded either: "0 times, 1 time, 2 or 3 times, 4 or 5 times, or 6 or more times." Because the number of students reporting the frequency categories of "4 or 5 times" or "6 or more times" for PDV, SDV, and FSI exposure was small, these categories were collapsed into an aggregate category of "4 or more times" for all three exposures. The referent category used for each of the three exposure variables was "0 times."

The outcome variable considered in this study was cyberbullying. Cyberbullying was measured by the question: "During the past 12 months, have you ever been electronically bullied? (Count being bullied through texting, Instagram, Facebook, or other social media.)" Students responded either "Yes" or "No," where "Yes" was considered as having been cyberbullied.

After a conducting a review of youth dating violence literature, the following variables were considered as confounders for this analysis: sex, age, grade, sexual orientation, and race/ethnicity (Vivolo-Kantor, et al, 2014). Students had the ability to select one or more responses for race. As only a small number of students identified as American Indian, Asian, Native American, Native Hawaiian or Other Pacific Islander, these racial/ethnic groups were collapsed into one group.

Data Analysis

Descriptive statistics were reported using frequencies (n) and weighted percentages. Logistic regression was used to determine unadjusted odds ratios (ORs) and 95% confidence intervals (CIs). The change in estimate criterion strategy with a cutoff point of 10% was used to determine confounders (Maldonado & Greenland, 1993). Sex, age, grade, sexual orientation, and race/ethnicity were determined to be confounders of the SDV and FSI-cyberbullying associations; sex and sexual orientation were determined to be confounders of the PDV-cyberbullying association. Multivariate logistic regression was used to calculate adjusted odds ratios (ORs) and 95% confidence intervals (CIs) of the PDV, SDV, and FSI-cyberbullying association. Stratified analyses were used to evaluate whether sex modified any of the associations. Weighted analyses were utilized to account for the complex sampling design of the YRBSS. All data analysis was conducted using SAS 9.4.

RESULTS

As shown in Table 1.2, most of the students in this study were female (50.37%), between 15 and 17 years old (75.18%), non-Hispanic White (53.40%), and identified as heterosexual (86.37%). Approximately 16.5% of students reported having been cyberbullied in the last 12 months, 7% reported any PDV, 7% reported SDV, and 12% experienced FSI. Females had over two and a half times the odds of cyberbullying as compared to males (OR=2.52, 95% CI: 2.17, 2.92; Table 2.2). Sexual minorities also had elevated odds of cyberbullying compared to their heterosexual counterparts, where bisexual students had over twice the odds of cyberbullying (OR=2.12, 95% CI: 1.57, 2.88), gay or lesbian students had two and a half times the odds of cyberbullying (OR=2.50, 95% CI: 2.04, 3.07), and students who were unsure of their sexuality had nearly twice the odds of cyberbullying (OR=1.98, 95% CI: 1.41, 2.80; Table 2.2).

Additionally, there was a dose-response relationship between age and cyberbullying. Specifically, as age increased the odds of cyberbullying decreased (Referent: 14 years old; 15 years old, OR=0.87, 95% CI: 0.72, 1.04; 16 years old, OR=0.71, 95% CI: 0.57, 0.86; 17 years old, OR=0.64, 95% CI: 0.52, 0.79; 18 years old, OR=0.62, 95% CI: 0.50, 0.77; Table 2.2).

Physical Dating Violence-Cyberbullying

In the unadjusted analysis, students who experienced PDV once had nearly three times the odds of cyberbullying (OR=2.77, 95% CI: 2.10, 3.66; Table 2.2), while students who experienced PDV two or more times had over four times the odds of cyberbullying, as compared to those who had not experienced PDV (two or three times, OR=4.89, 95% CI: 3.64, 6.76; ≥ 4 times, OR=5.20, 95% CI: 3.54, 7.65; Table 2.2). After adjustment for sex and sexual orientation, the association between PDV and cyberbullying was attenuated, and all findings remained statistically significant. Specifically, students who reported PDV once had approximately 2.4 times the odds of cyberbullying (OR=2.36, 95% CI: 1.75, 3.18; Table 3.2), students who reported PDV two or three times had over three and a half times the odds of cyberbullying (OR=3.61, 95% CI: 2.59, 5.02), and students who reported PDV ≥ 4 times had over 4 times the odds of cyberbullying, as compared to those who had not reported PDV (OR=4.24, 95% CI: 3.03, 5.94; Table 3.2).

Sexual Dating Violence-Cyberbullying

In the unadjusted analysis, students who experienced SDV once had almost four times the odds of cyberbullying (OR=3.86, 95% CI: 3.10, 4.81; Table 2.2), and students who experienced SDV two or more times had nearly 5 times the odds of cyberbullying, as compared to those who had not experienced SDV (2-3 times, OR=4.89, 95% CI: 3.54 7.65; ≥ 4 times, OR=5.20, 95%

CI: 3.54, 7.65; Table 2.2). After adjusting for sex, age, grade, sexual orientation, and race/ethnicity, the association between SDV and cyberbullying was slightly attenuated, and all findings remained statistically significant. Compared to students who reported no SDV, students who reported SDV one time had three-fold increased odds of cyberbullying (OR=2.98, 95% CI: 2.31, 3.85; Table 3.2), and students who reported SDV two or three times had over three-fold increased odds of cyberbullying after adjustment (OR=3.57, 95% CI: 2.57, 4.96; Table 3.2). After adjustment, results were attenuated, as students who reported ≥ 4 SDV experiences had approximately four and a half-times the odds of cyberbullying, as compared to those who had not experienced SDV (OR=4.56, 95% CI: 2.93, 7.09; Table 3.2).

Forced Sexual Intercourse-Cyberbullying

In the unadjusted analysis, students who experienced FSI once had triple the odds of cyberbullying (OR=3.18, 95% CI: 2.58, 3.92; Table 2.2), while students who experienced FSI ≥ 2 times had over five times the odds of cyberbullying, as compared to those who had not experienced FSI (2-3 times, OR= 5.42, 95% CI: 4.44, 6.60; ≥ 4 times, OR=5.64, 95% CI: 4.17, 7.61; Table 2.2). After adjusting for sex, age, grade, sexual orientation and race/ethnicity, the FSI-cyberbullying association was attenuated but remained statistically significant. Compared to students who reported no FSI, students who reported FSI one time had over 2.5 times the odds of cyberbullying (OR=2.49, 95% OR: 2.97, 3.13; Table 3.2). Students who experienced FSI two or three times had quadruple the odds of cyberbullying (OR=4.10, 95% CI: 3.33, 5.05; Table 3.2). Lastly, similar to the unadjusted results, students who reported FSI ≥ 4 times had nearly five times the odds of cyberbullying, as compared to those who had not reported FSI (OR=4.82, 95% CI: 3.49, 6.65; Table 3.2).

PDV, SDV, & FSI-Cyberbullying associations, stratified by sex

Results from the stratified analysis indicated that sex was an effect modifier of the PDV, SDV, and FSI-cyberbullying associations (Table 4.2). Among both female and male students, those who experienced SDV one time had approximately triple the odds of cyberbullying after adjustment for age, grade, sexual orientation, and race/ethnicity (females, OR=2.95, 95% CI: 2.19, 3.97; males, OR=2.92, 95% CI: 1.14, 6.12; Table 4.2). Among female students, those who experienced SDV two or more times also had approximately three times the odds of cyberbullying (2-3 times, OR=3.24, 95% CI: 2.30, 4.56; ≥ 4 times, OR=3.34, 95% CI: 2.08, 5.37; Table 4.2). However, among male students, those who experienced SDV two or more times had nearly seven times the odds of cyberbullying (2-3 times, OR=6.90, 95% CI: 3.50, 13.62; ≥ 4 times, OR=6.45, 95% CI: 3.23, 12.88; Table 4.2). A similar pattern was observed for PDV and FSI-cyberbullying associations. Specifically, the magnitude of the association between reporting 1 PDV or FSI experience and cyberbullying was similar among female and male students. However, as the number of experiences of PDV or FSI experiences increased, the magnitude of the odds ratio was greater among male students than female students.

Discussion

In this population-based study of U.S. youth, our hypothesis was confirmed, as these findings suggest that youth dating violence is associated with increased odds of cyberbullying. Furthermore, these findings suggest that there is a dose-response relationship between the number of times an adolescent is victimized and the associated odds of cyberbullying. As the number of SDV and PDV experiences increased, so too did the odds of cyberbullying. All results were statistically significant. To consider and compare the effect of similar types of interpersonal violence outside of "dating" relationships among youth, this study also examined the relationship between FSI and cyberbullying. Consistent with the associations observed

between SDV, PDV and cyberbullying, FSI was also statistically significantly associated with cyberbullying in a dose-response fashion. The stratified analysis also indicated that youth dating violence and its association with cyberbullying may be modified by sex, as greater odds of cyberbullying victimization were observed among male students compared to female students.

The implications of these findings are considerable. First, our results suggest that youth dating violence victims are more susceptible to cyberbullying when compared to youth in non-violent relationships. Previous research has suggested that victims of dating violence are at greater risk of in-person bullying (Fisher, Gardella, & Teurbe-Tolon, 2016), and the results from the present study suggest that this might also extend to cyberbullying. Second, the dose-response relationship exhibited between the frequency of SDV, PDV, and FSI suggests that youth who experience victimization more frequently have greater odds of cyberbullying. This finding is consistent with youth dating violence literature, as previous studies have demonstrated that experiencing youth dating violence more often is associated with other health risks, such as interpersonal violence victimization in adulthood (Doty et al., 2017; Nahapetyan et al., 2014). While the primary objective of this study was to examine the dating violence-cyberbullying association specifically, we also sought to compare this relationship to sexual violence committed by a non-romantic partner. Notably, youth who experienced FSI four or more times had the greatest odds of cyberbullying victimization in our study population. Furthermore, the frequency of FSI experiences and associated odds of cyberbullying paralleled the dose-response relationship exhibited within PDV and the SDV-cyberbullying associations. Previous studies have suggested that bullying behaviors and sexual harassment tend to co-occur (Doty et al., 2017; Leemis et al., 2019), but to the best of our knowledge, this is the first study to examine FSI-cyberbullying associations specifically.

Lastly, the stratified analysis also illuminated differences among female and male students' odds of cyberbullying victimization. Most notably, the odds of cyberbullying victimization were higher among male students who experienced PDV, SDV, or FSI than among female students, suggesting that sex may be an effect modifier of these associations. Furthermore, our results also suggest that a dose-response relationship between the frequency of victimization and associated odds of cyberbullying remains after stratifying by sex, and that this relationship is especially magnified among males compared to females.

This is an interesting finding, given the conflicting results of previous studies of gender and cyberbullying victimization. For instance, some studies have suggested that gender does not modify cyberbullying victimization (Griezel et al., 2012; Hinduja & Patchin, 2008). Conversely, other research has suggested that gender does modify cyberbullying victimization, where females are more often victims of cyberbullying than males (Mark & Ratliff, 2011), or where males are more often victims of cyberbullying than females (Fanti, Demetrious, & Hawa, 2012). As well, it is important to consider the findings of the present study within the broader context of gender and the associated consequences of dating violence. A large body of research has demonstrated that, on average, some of the most serious consequences of dating violence, domestic violence, and intimate partner violence are experienced by female victims as compared to male victims (e.g., physical and psychological injury) (Eisner, 2021; Kimmel, 2002; Stets & Straus, 1990). Yet in our study, the adverse consequence of cyberbullying was greater among male victims of PDV, SDV, or FSI than among female victims.

One possible explanation for this finding may be the societal stigma against male victims of dating violence. Males have been historically and stereotypically referred to as the "stronger" sex, and in turn, being labeled as a "victim" might be unfairly and inaccurately associated with

being “weak” (Taylor, Bates, & Colosi, 2021; Overstreet & Quinn, 2013). Thus, male victims of dating violence may be especially likely to be cyberbullied for their victimization during high school, as this age group is at the highest risk of cyberbullying victimization (Patchin, 2019). Another possible explanation may be that when male victims disclose their experiences of dating violence to others, whether it be to their peers, to school administrators, or even to police, they are not taken as seriously as their female counterparts (Taylor, Bates, & Colosi, 2021). With this mind, it can also be argued that male victims of dating violence may be more likely than female victims to be discredited and harassed by others for their victimization, leading to cyberbullying victimization. As such, further research is needed to better understand how sex modifies the relationship between dating violence and cyberbullying among youth.

Limitations

While the findings of this study are notable, this study had several limitations. Due to the cross-sectional study design, a temporal relationship between the exposure variables and the outcome variable could not be established. Thus, it is not possible to know whether SDV, PDV, or FSI preceded cyberbullying victimization or vice versa. Non-differential misclassification of the exposure variables PDV, SDV, FSI, and the outcome variable, cyberbullying, was possible, as students self-reported all behaviors. However, it should be noted that self-report methods are the most commonly used measurement tools of dating violence and cyberbullying (Vivolo-Kantor et al., 2014). Additionally, as this study utilized publicly available, secondary data, it was not possible to control for all potential confounding factors. Our study was also limited by the definition of dating violence, as the dataset utilized did not include questions regarding psychological dating violence or stalking. Similarly, our study was also limited by the definition

of "sex" as this dataset did not include additional sexual identity options outside of "male" and "female."

Despite limitations, this study also had many strengths. Most notably, this study fills a gap in adolescent health literature by examining less understood risk factors for cyberbullying victimization. To the best of our knowledge, this is the first study to examine how the frequency of PDV, SDV, and FSI impact the odds of cyberbullying, as well as how sex modifies these associations. This study was also strengthened by the strong response rate of the 2017 and 2019 YRBSS, thus minimizing selection bias. These findings are bolstered by using a large, nationally representative sample of U.S. youth that may be generalizable to U.S. youth aged 14-18.

Implications And Future Directions

The findings from this study underscore the need to address youth dating violence as early as possible, as this may also prevent other types of victimization like cyberbullying. Furthermore, these results provide considerations for school-based prevention programs related to youth dating violence, bullying, and cyberbullying. Previous research has noted that there is often overlap between school-based youth dating violence programs and bullying prevention programs, but that youth dating violence programs focus primarily on education as opposed to prevention (Cascardi et al., 2018). Because our results suggest that experiencing youth dating violence victimization more frequently increases the odds of cyberbullying victimization, dating violence programs at schools could benefit from implementing evidence-based interventions aimed at preventing dating violence as soon as possible. For example, bystander interventions for dating violence prevention programs have shown promising results in reducing youth dating violence (Miller et al., 2012). Furthermore, studies have suggested that bystander intervention programs also reduce the acceptance of violence in relationships (Coker et al., 2018), as well as

the acceptance of sexual coercion and psychological dating violence victimization and perpetration (Coker et al., 2016). In turn, by reducing the acceptance of dating violence, youth may be less vulnerable to future victimization. Given the strong relationship between FSI and cyberbullying noted in this study, it is imperative that dating violence prevention programs and bystander intervention programs address sexual violence outside of a dating relationship, as well. As most youth currently have access to smart phones and the internet, school-based bullying prevention programs should be sure to include information related to cyberbullying, as well as in-person bullying. Finally, future research should examine comprehensive efforts to address dating violence and cyberbullying in schools, to protect this vulnerable population growing up in an increasingly technological world.

Conflict of Interest Statement

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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Table 1.2: Select characteristics of the 2017-2019 YRBSS (N=14,655)

Characteristics	Frequency (n)	Weighted Percent (%)
Sex		
Male	7,070	49.63
Female	7,585	50.37
Age		
14 years old	1,421	09.45
15 years old	3,282	22.52
16 years old	3,935	26.28
17 years old	3,941	26.38
18 years old	2,076	15.38
Grade		
9th grade	3,331	23.18
10th grade	3,747	24.99
11th grade	3,866	25.86
12th grade	3,711	25.84
Race/Ethnicity		
American Indian, Asian, Native American, or Other Pacific Islander	632	3.37
Black or African American	2,581	12.44
Hispanic or Latino	1,447	9.87
Multiple Race Hispanic	2,343	15.77
Multiple Race Non-Hispanic	772	5.14

Characteristics	Frequency (n)	Weighted Percent (%)
White	6,880	53.40
Sexual Orientation		
Bisexual	1,293	8.60
Gay or Lesbian	353	2.17
Heterosexual	12,569	86.37
Unsure	440	2.85
Physical Dating Violence Frequency		
0 times	13,591	93.12
1 time	467	2.89
2 or 3 times	310	2.01
4 or more times	287	1.99
Sexual Dating Violence Frequency		
0 times	13,649	92.87
1 time	481	3.26
2 or 3 times	317	2.34
4 or more times	208	1.53
Forced Sexual Intercourse		
0 times	12,823	87.55
1 time	798	5.50
2 or 3 times	649	4.36
4 or more times	385	2.61
Ever Electronically Bullied		

Yes	2,340	16.54
No	12,315	83.54

Table 2.2: Unadjusted odds ratios and 95% confidence intervals of select variables and presence of electronic bullying

Characteristics	Unadjusted Odds Ratio	95% CI
Sex		
Male (ref)	1.00	Referent
Female	2.52	(2.17, 2.92)
Age		
14 years old (ref)	1.00	Referent
15 years old	0.87	(0.72, 1.04)
16 years old	0.71	(0.57, 0.86)
17 years old	0.64	(0.52, 0.79)
18 years old	0.62	(0.50, 0.77)
Grade		
9th grade (ref)	1.00	Referent
10th grade	0.82	(0.70, 0.95)
11th grade	0.71	(0.60, 0.85)
12th grade	0.74	(0.63, 0.86)
Race/Ethnicity		
American Indian, Asian, Native American, or Other Pacific Islander	0.82	(0.59, 1.14)
Black or African American	0.46	(0.37, 0.56)
Hispanic or Latino	0.43	(0.32, 0.59)
Multiple Race Hispanic	0.70	(0.55, 0.81)
White (ref)	1.00	Referent

Table 2.2 (continued): Unadjusted odds ratios and 95% confidence intervals of select variables and presence of electronic bullying, Youth Risk Behavior Surveillance System 2017-2019

Characteristics	Unadjusted Odds Ratio	95% CI
Multiple Race Non-Hispanic	0.88	(0.68, 1.14)
Sexual Orientation		
Bisexual	2.12	(1.57, 2.88)
Gay or Lesbian	2.50	(2.04, 3.07)
Heterosexual	1.00	Referent
Unsure	1.98	(1.41, 2.80)
Sexual Dating Violence Frequency		
0 times (ref)	1.00	Referent
1 time	3.86	(3.10, 4.81)
2 or 3 times	4.89	(3.54, 6.76)
4 or more	5.20	(3.54, 7.65)
Physical Dating Violence Frequency		
0 times (ref)	1.00	Referent
1 time	2.77	(2.10, 3.66)
2 or 3 times	4.05	(2.95, 5.55)
4 or more times	4.03	(2.94, 5.54)
Forced Sexual Intercourse Frequency		

0 times (ref)	1.00	Referent
1 time	3.18	(2.58, 3.92)
2 or 3 times	5.42	(4.44, 6.60)
4 or more times	5.64	(4.17, 7.61)

Table 3.2: Adjusted odds ratios and 95% confidence intervals of select variables and presence of electronic bullying

Characteristics	Adjusted Odds Ratio	95% CI
Sexual Dating Violence Frequency*		
0 times (ref)	1.00	Referent
1 time	2.98	(2.31, 3.85)
2 or 3 times	3.57	(2.57, 4.96)
4 or more times	4.56	(2.93, 7.09)
Physical Dating Violence Frequency**		
0 times (ref)	1.00	Referent
1 time	2.36	(1.75, 3.18)
2 or 3 times	3.61	(2.59, 5.02)
4 or more times	4.24	(3.03, 5.94)
Forced Sexual Intercourse Frequency*		
0 times (ref)	1.00	Referent
1 time	2.49	(1.97, 3.13)
2 or 3 times	4.10	(3.33, 5.05)
4 or more times	4.82	(3.49, 6.65)

*Adjusted for sex, age, grade, sexual orientation, and race/ethnicity

**Adjusted for sex and sexual orientation

Table 4.2: Adjusted odds ratios and 95% confidence intervals of select variables and presence of electronic bullying - stratified by sex

Characteristics	Females		Males	
	Adjusted Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
Sexual Dating Violence Frequency*				
0 times	1.00	Referent	1.00	Referent
1 time	2.95	(2.19, 3.97)	2.92	(1.14, 6.12)
2-3 times	3.24	(2.30, 4.56)	6.90	(3.50, 13.62)
4 or more times	3.34	(2.08, 5.37)	6.45	(3.23, 12.88)
Physical Dating Violence Frequency**				
0 times	1.00	Referent		Referent
1 time	2.35	(1.68, 3.29)	2.25	(1.30, 3.89)
2-3 times	3.35	(2.33, 4.81)	4.38	(2.59, 7.39)
4 or more times	3.91	(2.59, 5.90)	4.43	(4.09, 7.20)
Forced Sexual Intercourse Frequency*				
0 times	1.00	Referent	1.00	Referent
1 time	2.43	(1.90, 3.12)	2.97	(2.38, 3.71)
2-3 times	3.91	(3.07, 4.98)	4.98	(4.09, 6.07)
4 or more times	4.63	(3.28, 6.53)	5.20	(3.81, 7.08)

*Adjusted for age, grade, sexual orientation, & race/ethnicity

**Adjusted for sexual orientation

CHAPTER FOUR: Study Three

Associations between dating violence and cyberbullying among U.S. college students

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Abstract

Objective: Cyberbullying is a serious, but understudied, issue among college students. Risk factors for cyberbullying victimization are not well known. This study examined the association between different types of dating violence (DV) and cyberbullying in a sample of college students, and whether any of these associations differed by sex/gender identity.

Methods: 2021 National College Health Assessment (NCHA) survey data from 30,124 U.S. college students were used. Students self-reported physical DV, psychological DV, sexual DV, and cyberbullying via an online questionnaire. Multivariate logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs) of the DV-cyberbullying associations. Stratified results were conducted to determine if sex/gender identity was an effect modifier of the associations.

Results: Approximately 3.5% of college students reported being cyberbullied in the past year. Students who experienced sexual DV had over five and a half greater odds of cyberbullying victimization, as compared to students who did not experience sexual DV (AOR: 5.60, 95% CI: 3.99, 7.85). Students who experienced physical DV or sexual DV also experienced significantly increased odds of cyberbullying victimization (physical DV, AOR: 3.38, 95% CI: 2.66, 4.29; psychological DV, AOR: 2.58, 95% CI: 2.23, 2.90). While stratified analyses revealed some differences in victimization among sex/gender identity groups, sex/gender identity was not determined to be an effect modifier (Breslow Day Test of Homogeneity $p>0.05$).

Conclusions: Cyberbullying is an evolving issue that threatens the health and well-being of college students. Additional research on the DV-cyberbullying association is needed to protect these students during an especially vulnerable period in their lives.

Introduction

College students spend countless hours engaging with technology, and during the COVID-19 pandemic, college students were online more than ever. Cyberbullying, known as psychological harm intentionally inflicted on others by individuals or groups using electronic technologies, is a prevalent issue among college students (Kowalski & Limber, 2007). Literature has suggested approximately 20% of U.S. college students experience cyberbullying (Lund & Ross, 2017). Cyberbullying behaviors are complex and vary by circumstance. For example, cyberbullying may include behaviors such as using insults or threats, spreading rumors, or sharing private information without consent through social media platforms, smartphones, or other technologies (Peebles, 2014).

Although cyberbullying is a serious issue among college students, the bulk of previous research has been conducted in high school settings with adolescents (Jenaro, Flores, & Frías, 2018). Indeed, cyberbullying has been primarily approached as a "youth problem," and as a result, the consequences of cyberbullying victimization among college students are not well understood in this population (Aboujaoude et al., 2015; Jenaro, Flores, & Frías, 2018). Still, results from studies of adolescent populations have shown cyberbullying victimization is associated with many negative mental and physical health consequences including anxiety, depression, academic problems, family problems, and suicide (Patchin & Hinduja, 2009). Moreover, it is reasonable to infer college students suffer from similar negative consequences (Huang et al., 2021).

While research on cyberbullying among U.S. college students is limited, some international studies have shown certain activities and characteristics are associated with an increased risk of victimization. Some of these risk factors include engaging in risky internet

behaviors (i.e., communicating online with strangers) (Guan et al., 2016), struggling with anxiety symptoms, and engaging with violent video games (Huang et al., 2021). A small body of research has also considered exposure to violence as a risk factor for cyberbullying victimization. In fact, one recent study conducted in Myanmar suggested that witnessing physical, psychological, or sexual violence was associated with nearly three times the odds of cyberbullying victimization among college students (OR: 2.94, 95% CI: 1.48, 5.91) (Khine, et al., 2020).

One less understood risk factor for cyberbullying victimization is experiencing, not just witnessing, violence. Dating violence (DV) is understood as experiencing physical violence (hitting or slapping), sexual violence (forcing a partner to engage in a sexual act when she/he does not want to), psychological violence (intentionally harmful verbal or non-verbal communication), or stalking (persistent, unwanted attention that causes fear) within a romantic partnership (Centers for Disease Control & Prevention [CDC], 2020). Like cyberbullying, DV is common among college students as it is estimated approximately 20% of college students have experienced DV (Brewer, Thomas, & Higdon, 2018). Longitudinal research has also demonstrated that DV victimization peaks around 20-25 years old, making college students an especially vulnerable population to this abuse (Johnson et al., 2015).

Although limited, some research conducted in adolescent populations has suggested there are relationships between different types of DV and in-person bullying, where those who experience DV are more likely to be bullied by others (Ellis & Wolfe, 2015). It has been suggested that being perceived as “different” from one’s peers puts one at an increased risk of being bullied (U.S. Department of Health and Human Services, 2021). Those who experience DV report feeling different from their peers, sometimes feeling isolated, making them a

susceptible group to victimization (Ellis & Wolfe, 2015). Yet, to our knowledge, no past study has examined the relationship between DV and cyberbullying among college students in the U.S.

One theory that may explain this possible relationship is Galtung's "Culture of Violence Theory" (CVT) (1990). CVT emphasizes that acts of violence may be legitimized and rendered justifiable in society (Galtung, 1990). In short, cultural violence functions by "changing the moral color" of a violent act, where violence is deemed acceptable in certain circumstances, such as protecting the collective whole or "good" of society (Galtung, 1990). As a result, some acts of violence are considered acceptable or justifiable (e.g., capital punishment). Cultural violence also functions by distorting reality or making reality "opaque," meaning violence may not be unrecognized as violence or it may be perceived as harmless (Galtung, 1990).

From a CVT lens, cyberbullying may be considered a type of culture violence that is "harmless" (as it does not cause direct physical pain). Moreover, sometimes cyberbullying is considered "justified" as literature has suggested that cyberbullies are occasionally viewed favorably by others (Ortega-Baron et al., 2017). While DV is not viewed in the same way, cultural beliefs such as rape myths and victim blaming attitudes rooted in sexist stereotypes still undermine and threaten the seriousness of DV experiences as well (Lelaurain et al., 2019; Rollero, C., & De Piccoli, 2020). For example, cisgender (cis) men may be considered the "stronger sex," and in turn, being labeled a DV "victim" may lead others to perceive them as "weak" (Taylor, Bates, & Colosi, 2021; Overstreet & Quinn, 2013). Being labeled as weak may put cis men at risk for cyberbullying victimization. In contrast, women who experience DV may be labeled as "liars" or even as deserving violence, especially if they are seen as trying to "control" their partners (Rollero & Piccoli, 2020). In turn, being labeled a liar may also put those at risk for cyberbullying.

It is important to consider how the relationship between DV and cyberbullying may be modified by sex/gender identity. One of the few studies examining cyberbullying experiences among college students specifically demonstrated that non-heterosexual college students (i.e., sexual minority students) experienced significantly higher rates of cyberstalking (a sub-type of cyberbullying behavior) when compared to heterosexual students (Reyns, Henson, & Fisher, 2012). Reyns and colleagues (2012) also demonstrated the rate of cyberstalking was significantly higher among cis women compared to cis men. However, it is important to emphasize that among sex/gender identity groups, transgender individuals consistently experience higher rates of cyberbullying and DV victimization when compared to their cis peers (Whitfield, et al., 2021). Indeed, a systematic literature review of 28 studies demonstrated transgender students experience substantially higher rates of cyberbullying victimization across studies when compared to their cis peers (Abreu & Kenny, 2018). Results from a recent nationally representative study of DV among college students found that compared to cisgender men, transgender students experienced significantly higher odds of physical DV (OR: 2.93, 95% CI: 1.78, 4.82) and psychological DV (OR: 1.99, 95% CI: 1.37, 2.88) (Whitfield, et al., 2021). While cisgender women had twice the odds of sexual DV when compared to cisgender men (OR: 2.22, 95% CI: 1.93, 2.56), transgender students had over six times the odds of sexual DV when compared to cisgender men (OR: 6.18, 95% CI: 3.77, 10.11) (Whitfield, et al., 2021).

An understanding of the relationship between DV and cyberbullying is needed to protect and promote the health of college students. Although a small body of international research has examined relationships between violence and cyberbullying, to our knowledge, no previous study has specifically examined DV and cyberbullying in this population. This study aimed to fill this important gap in the literature. Moreover, information on cyberbullying among U.S.

college students in general is extremely limited, representing another gap in scientific knowledge this study sought to address. Given the previous research that has examined sex/gender identity in relation to DV and cyberbullying, this study also considered sex/gender identity as an effect modifier of the DV-cyberbullying relationship.

Materials and Methods

Data Source

Data were retrieved from the 2021 iteration of the National College Health Assessment (NCHA). The NCHA is a cross-sectional survey administered by the American College Health Association (ACHA) that examines the most common health risk behaviors among U.S. college students (American College Health Association [ACHA], 2021). Individual schools may choose to participate in the NCHA for their own general health assessment, needs assessment, program planning, or pre-test post-test evaluation. Schools may also choose their own method of sampling students, but only colleges that randomly select students or classrooms to participate are included in the national dataset. This large national dataset, hereby referred to as "NCHA," contains information from all colleges that meet eligibility criterion and want to participate in identifying the most important health priorities among U.S. college students. Colleges must receive approval from their own institutional review board (IRB) to be included in the NCHA. Given the impact of the COVID-19 pandemic, the survey was only delivered online through Qualtrics. Student participation is voluntary and typically takes students about 30 minutes to complete (ACHA, 2021).

Participants

All college students were recruited to participate in the 2021 NCHA survey via email, and data were collected between March and May 2020. The total NCHA III sample size was 96,489 students representing 137 schools with a response rate of approximately 12.8% (ACHA, 2021). Given that the primary purpose of this study was to examine college students involved in a romantic relationship, students who had not been in a romantic relationship within the past year were excluded (n = 48,971). As this study also aimed to examine college students in early adulthood, graduate students (n = 1,159) and students who were older than 25 were also excluded (n = 15,295). Students missing information related to cyberbullying (n = 214), psychological dating violence (n = 138), physical dating violence (n = 65), sexual dating violence (n = 134), sex assigned at birth (n = 64), transgender identity (n = 46), sexual orientation (n = 126), and race/ethnicity (n = 153) were also excluded. The final analytic sample included 30,124 college students.

Measures

Exposure: Dating Violence

Three types of dating violence (DV) were considered as exposures: physical DV, psychological DV, and sexual DV. Students were given a series of statements to measure each dating violence experience. The series of statements was prefaced by the question, "Within the past 12 months, did you experience any of the following in an intimate (partner/coupled) relationship?" Students were then given the option to select yes or no for each statement. Physical DV was measured by the statement, "A partner pushed, grabbed, shoved, slapped, kicked, bit, choked, or hit me without my consent." Students who responded yes were considered exposed to physical DV and those who responded no were considered unexposed. Psychological DV was measured by the statement, "A partner called me names, insulted me, or

put me down to make me feel bad" and "A partner often insisted on knowing who I was with and where I was or tried to limit my contact with family or friends." Students who responded yes to either statement were considered exposed to psychological DV and those who responded no were considered unexposed. Sexual DV was measured statement, "A partner forced me into unwanted sexual contact by holding me down or hurting me in some way" and "A partner pressured me into unwanted sexual contact by threatening me, coercing me, or using alcohol or other drugs." Students who responded yes to either statement were considered exposed to sexual DV and those who responded no were considered unexposed.

Outcome: Cyberbullying Victimization

The main outcome of interest in this study was cyberbullying victimization. Cyberbullying victimization was measured by the question, "Within the last 12 months, have you had problems or challenges with cyberbullying (use of technology to harass, threaten, embarrass, or target another person)?" Students who responded yes to the question were considered as having been cyberbullied, while students who responded no were not considered as having been cyberbullied.

Covariates

Following a review of college dating violence and cyberbullying literature, academic year (Adhia et al., 2019), age (Zalaquett & Chatters, 2014), race/ethnicity (Albdour, M., & Krouse, 2014), sex/gender identity (Lund & Ross, 2016) and sexual orientation (Aboujaoude et al., 2015) were considered as possible confounders. Given the findings of prior studies on sex/gender differences among college-aged cyberbullying victims (Ahmadabadi et al., 2021; Amanor-Boadu, et al., 2011), sex/gender identity (cis men, cis women, and transgender men or women)

was considered as a possible effect modifier of the physical DV, psychological DV, and sexual DV-cyberbullying associations.

Data Analysis

Descriptive statistics, including frequencies and percentages, were used to describe the analytic sample. Logistic regression was used to measure unadjusted physical DV, psychological DV, sexual DV-cyberbullying associations, and to identify other factors associated with cyberbullying. Multivariate logistic regression was used to obtain adjusted odds ratios and 95% confidence intervals. Backward elimination was used to determine potential confounding factors (Budtz-Jorgensen et al., 2006). Stratified analysis and the Breslow Day Test of Homogeneity were conducted to evaluate whether sex/gender identity modified these associations. All data analysis was conducted using SAS 9.4.

Results

Most students in this study identified as cis women (73.15%), non-Hispanic White (61.72%), and heterosexual (75.81%), and (Table 1.3). Approximately 3.5% of students reported cyberbullying victimization. Nearly 12% of students experienced psychological DV, while approximately 2.6% experienced physical DV and less than 1% experienced sexual DV.

A dose-response relationship between age and odds of cyberbullying victimization was observed where odds of cyberbullying decreased as students' age increased. Students aged 18-19 had over 1.7 times the odds of cyberbullying (OR: 1.73, 95% CI: 1.40, 2.14); students aged 20-21 had 1.4 times the odds of cyberbullying (OR: 1.40, 95% CI: 1.14, 1.72); and, students aged 22-23 had nearly 1.2 times the odds of cyberbullying (OR: 1.19, 95% CI: 0.95, 1.49; Table 2.3) as compared to students aged 24-25. Compared to cis women, students who identified as

transgender men or women had over twice the odds of cyberbullying (OR: 2.40, 95% CI: 1.84, 3.14; Table 2.3), and students who identified as cis men had reduced odds of cyberbullying (OR: 0.77, 95% CI: 0.66, 0.90; Table 2.3).

Physical DV-Cyberbullying

In the unadjusted analysis, students who experienced physical DV had over three and a half greater odds of cyberbullying victimization (OR: 3.57, 95% CI: 2.82, 4.52; Table 2.3) as compared to students who did not experience physical DV. After adjustment for academic year, race, sex/gender identity, and sexual orientation, this association was attenuated but remained statistically significant. Specifically, students who experienced physical DV had over three times the odds of cyberbullying victimization, as compared to students who did not experience physical DV (AOR: 3.38, 95% CI: 2.66, 4.29; Table 3.3).

Psychological DV-Cyberbullying

Students who experienced psychological DV also had statistically significant increased odds of cyberbullying victimization prior to adjustment. In the unadjusted analysis, students who experienced psychological DV had approximately 2.60 times the odds of cyberbullying victimization, as compared to students who did not experience psychological DV (95% CI: 2.24, 2.99; Table 2.3). After adjusting for academic year, race, sex/gender identity, and sexual orientation, this association remained statistically significant and did not change in magnitude (AOR: 2.58, 95% CI: 2.23, 2.90; Table 3.3).

Sexual DV-Cyberbullying

A statistically significant association between sexual DV and cyberbullying was also observed in both the unadjusted and adjusted analyses. Compared to students who did not

experience sexual DV, students who did experience sexual DV had nearly seven times the odds of cyberbullying victimization in the unadjusted analysis (OR: 6.71, 95% CI: 4.82, 9.34; Table 2.3). After adjustment this association was attenuated but remained statistically significant. Students who experienced sexual DV had over five and a half greater odds of cyberbullying victimization, as compared to students who did not experience sexual DV (AOR: 5.60, 95% CI: 3.99, 7.85; Table 3.3).

Sex/Gender Identity Stratified Analysis

The physical DV-cyberbullying association was similar among cis women and cis men (Cis women, AOR: 3.31, 95% CI: 2.50, 4.39; Cis men, AOR: 3.40, 95% CI: 2.03, 5.70; Table 4.3). However, among transgender men and women, physical DV was associated with over four and a half times the odds of cyberbullying victimization (AOR: 4.63, 95% CI: 1.66, 12.88; Table 4.3), as compared to those who did not experience physical DV. Findings for the psychological DV-cyberbullying victimization association were similar in that the magnitude of the association was the same among both cis men and women (Cis women, AOR: 2.53, 95% CI: 2.14, 3.00; Cis men, AOR: 2.55, 95% CI: 1.84, 3.54; Table 4.3). However, among transgender men and women, psychological DV was associated with over three times the odds of cyberbullying victimization (AOR: 3.43, 95% CI: 1.77, 6.64; Table 4.3). With respect to the sexual DV-cyberbullying association when stratified by sex/gender identity, among cis women sexual DV was associated with nearly five times the odds of cyberbullying victimization (AOR: 4.74, 95% CI: 3.14, 7.17; Table 4.3). This association increased in magnitude among transgender men and women (AOR: 6.96, 95% CI: 2.01, 24.06; Table 4.3). However, the magnitude of the sexual DV-cyberbullying association was especially high among cis men. Specifically, among cis men, sexual DV was associated with over ten times the odds of cyberbullying victimization (AOR: 10.31, 95% CI:

5.09, 20.90; Table 4.3). Despite these differences in magnitude of each DV-cyberbullying association among sex/gender identity groups, results from the Breslow Day test of Homogeneity did not reveal any statistically significant differences at the $p < .05$ level.

Discussion

The purpose of this study was to examine the association between DV and cyberbullying among U.S. college students. Our results suggest that physical DV, psychological DV, and sexual DV are associated with cyberbullying victimization, as college students who experienced each type of DV had statistically significant increased odds of cyberbullying. This study fills an important gap in the literature as, to the authors' knowledge, it is the first study to investigate these associations in a sample of U.S. college students. This study also adds to the cyberbullying and DV literature by examining differences in DV-cyberbullying associations according to sex/gender identity.

In this study, the prevalence of DV and cyberbullying victimization was lower than previous national estimates (Brewer, Thomas, & Higdon, 2018; Lund & Ross, 2017). These differences may be due, in part, to the convenience sampling design utilized by the NCHA. Because colleges choose to participate in the NCHA, the sample of colleges included in the data may not be representative of U.S. college students. Thus, the sample population in this study may differ from the national population, leading to differences in the prevalence of DV and cyberbullying.

Past research on associations between DV and cyberbullying is limited, but studies conducted with high school students have suggested those who experience DV have a greater risk of in-person bullying victimization (Ellis & Wolfe, 2015; Fisher, Gardella, & Teurbe-Tolon, 2016). The present study examined the relationship between DV and cyberbullying, not in-

person bullying, but our results mirror these findings with the observed significant DV-cyberbullying associations. Moreover, the present study also suggests the DV-cyberbullying association is significant in early adulthood as well as in adolescence. Indeed, cyberbullying is not simply a "youth problem" (Jenaro, Flores, & Frías, 2018).

Most relevant to the present study, past research has suggested that *witnessing* physical DV, psychological DV, or sexual DV is associated with increased odds of cyberbullying victimization in college students (Khine, et al., 2020). The results from the current study were comparable to these findings in that college students who *experienced* each type of DV had increased odds of cyberbullying victimization. Furthermore, the association between DV and cyberbullying was similar in magnitude to that of past research (Khine et al., 2020). However, unlike previous studies, the present study considered physical DV, psychological DV, and sexual DV as separate exposures. As a result, differences in DV-cyberbullying victimization associations according to the type of DV experienced were revealed in the current research. For example, results suggest college students who experienced sexual DV had the greatest odds of cyberbullying victimization, followed by students who experienced physical DV and psychological DV, respectively.

To our knowledge, these associations have not been demonstrated in prior research of college students. However, results from one recent study of U.S. adolescents suggested that students who experienced sexual DV also had the greatest odds of cyberbullying (Post & Brunner Huber, 2023). The findings in the present study build upon this research by demonstrating similarly elevated odds of cyberbullying among college students who experienced sexual DV.

Individuals who experience DV are more vulnerable to other types of interpersonal violence (Piolanti et al., 2023). Findings in this study suggest that those who experience DV might also be more vulnerable to cyberbullying victimization. From a CVT perspective, this might be explained by society's perception of cyberbullying, where cyberbullying might be perceived as a less severe type of abuse when compared to other types of bullying or harassment (Bandyopadhyay, Deokar, & Omar, 2014). Furthermore, if those who experience DV are seen as "different" from their peers, or if myths about DV negatively impact society's perception of violence, DV victims may be more vulnerable to cyberbullying (Rollero, C., & De Piccoli, 2020).

Stratified analyses revealed differences in the DV-cyberbullying associations according to sex/gender identity. Although the stratified results were not statistically significant, it is still important to consider these results within the context of DV and cyberbullying literature as the sample size for transgender students was relatively small. The elevated odds of cyberbullying victimization among transgender students who experienced physical DV, psychological DV, and sexual DV is consistent with past sexual minority health literature (Whitfield et al., 2021). For instance, past research has demonstrated the odds of DV and cyberbullying victimization are increased among transgender high school students relative to cis students (Norris & Orchowski, 2020). Studies conducted in college populations suggest this disparity remains in adulthood. Among transgender college students, the risk of DV (Abreu & Kenny, 2018) and cyberbullying victimization is elevated when compared to other sex/gender identity groups (Reyns, Henson, & Fisher, 2012; Whitfield, et al., 2021).

Previous studies have also indicated cis women who experience sexual DV report, on average, the most severe, negative consequences of victimization when compared to cis men

who experience sexual DV (Harned, 2001; Kimmel, 2002). The results from the current study expand upon this research by noting differences in DV-cyberbullying associations among these two groups. In this study, the physical and psychological DV-cyberbullying associations were similar among cis men and women. This is inconsistent with past research demonstrating DV (Eisner, 2021) and cyberbullying victimization is more prominent among cis women (Reyns, Henson, & Fisher, 2012).

With respect to sexual DV, literature has suggested risk of sexual DV is higher among cis women in college when compared to cis men (Ahmadabadi et al., 2021), but among transgender students, risk of sexual DV is the highest (Whitfield, et al., 2021). Relatedly, other studies have shown consequences of sexual DV are greatest for cis women (Eisner, 2021) and transgender individuals (Abreu & Kenny, 2018). However, in the present study the sexual-DV-cyberbullying association was particularly elevated among cis men. In fact, this association was the most pronounced across the three sex/gender identity groups. To our knowledge, this has not been reported in other studies and warrants additional attention.

One reason for observing elevated odds of cyberbullying specifically among cis men who experienced sexual DV may be explained by the CVT. If college students' perception of sexual DV among cis men is "distorted," where cis men are not seen as being vulnerable to this type of victimization, cis men may be at risk for mistreatment (Galtung, 1990). This is likely rooted in sexist stereotypes noted by past researchers (Lelaurain et al., 2019). Additionally, past research examining consequences of DV victimization among male college student athletes has suggested male students are afraid to seek help (Cantor, N., Joppa, M., & Angelone, 2021). One explanation for this may be that when cis men disclose their experience of sexual DV in college to others, they are not taken as seriously or treated with the same respect (Rollero, C., & De

Piccoli, 2020). Indeed, previous research has noted this unfortunate problem (Taylor, Bates, & Colosi, 2021). With this mind, cis men who experience sexual DV may be discredited, isolated, and at an increased risk of cyberbullying victimization.

Study Limitations

This study had several limitations. Because student participants self-report all behaviors in the NCHA survey, non-differential misclassification of the exposure and outcome variables was possible. However, self-reporting methods are the most commonly used measure of DV and cyberbullying, as they allow researchers to gather data on multiple types of victimization while ensuring confidentiality (Vivolo-Kantor et al., 2014). Moreover, students may feel more comfortable honestly answering sensitive questions via self-report methods as opposed to other less confidential methods (i.e., interviews or focus groups). Additionally, past validity studies of self-report measures of DV and cyberbullying have shown to be valid and reliable in measuring these types of victimization (Alhajii, Bass, & Dai, 2019; Angoff & Barnhart, 2021; Li et al., 2020).

Given the cross-sectional study design of the NCHA, a temporal relationship between the exposure variables (physical DV, psychological DV, and sexual IPV) and the outcome variable (cyberbullying) cannot be determined. As a result, it is not clear if DV preceded cyberbullying victimization. Lastly, because the NCHA utilizes a convenience sampling method, results cannot be said to be generalizable to all colleges and students in the U.S. (ACHA, 2021). However, it is important to emphasize that only colleges using a random sampling method are eligible for participation in the NCHA which may help alleviate some concerns regarding generalizability .

Study Strengths

This study also has many strengths. First, this study fills a gap in the scientific literature of cyberbullying victimization among college students. As noted by many cyberbullying literature reviews and past studies, cyberbullying among college students in general is not well-understood as most previous research has examined cyberbullying among children and adolescents (Aboujaoude et al., 2015; Jenaro, Flores, & Frías, 2018). Research on cyberbullying victimization is also largely limited to studies conducted outside of the U.S., meaning those results are not necessarily generalizable to U.S. college students. In turn, the results from this study may inform knowledge of cyberbullying at U.S. colleges and universities specifically.

This study fills another gap in the literature by examining a less understood risk factor for cyberbullying: DV. While some research has examined the association between DV and cyberbullying among high school students, to the authors' knowledge, no other study has examined this association among U.S. college students. As such, the results from this study provide new information about these associations. This study was also strengthened by considering sex/gender identity as an effect modifier. Although past research has noted disparities in DV and cyberbullying victimization according to sex/gender identity, research regarding how sex/gender identity may modify this specific association is lacking. Finally, this study was strengthened by the use of a large dataset that allowed for the consideration of multiple DV exposures. Previous researchers have noted that the definition of DV is often limited to physical or sexual DV (Dokkedahl, 2019). In the present study, psychological DV was also considered as an exposure which provides a more thorough spectrum of DV experiences.

Findings from the current study shed light on associations between DV and cyberbullying that could be used to inform prevention approaches (e.g., faculty and staff training programs), intervention efforts (e.g., bystander intervention programs), and treatment services, such as

student health centers or mental health counseling programs on college campuses. Additionally, research on the possible association between DV and in-person bullying (often referred to as "interpersonal harassment" among adults) is needed, as college students are threatened by harassment both online and offline. Importantly, future research should also examine how sex/gender identity modifies associations between different types of interpersonal violence, including DV, and cyberbullying. In turn, prevention, intervention, and treatment strategies for universities may be better tailored to meet the needs of all students.

College students exist in an ever-evolving, technological world, and no person deserves to experience violence of any kind. Protecting those most susceptible to cyberbullying and DV is of the utmost importance to promote the health of all U.S. college students during a critical period in their lives.

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Table 1.3: Descriptive statistics of college students aged 18-25, NCHA 2021 (N=30,124)

Characteristic	Frequency	Percent
Academic Year		
1st year	5,030	16.70%
2nd year	5,343	17.74%
3rd year	7,026	23.32%
4th year or higher	12,725	42.24%
Age		
18-19 years old	7,363	24.44%
20-21 years old	11,138	36.97%
22-23 years old	7,002	23.34%
24-25 years old	4,621	15.34%
Race		
AANHPI* & AIAN**	4,188	13.9%
Black or African American	635	2.11%
Hispanic or Latino/a/x	4,252	14.11%
Multiple race	1,709	5.67%
Other race	746	2.48%
White	18,594	61.72%
Sex/Gender Identity		
Cis Women	22,037	73.15%
Cis Men	7,320	24.30%
Transgender Men or Women	767	2.55%

Sexual orientation		
Heterosexual	22,836	75.81%
Bisexual	4,142	13.75%
Gay or Lesbian	1,067	3.54%
Other orientation	2,079	6.90%
Cyberbully victimization		
No	29,065	96.48%
Yes	1,059	3.52%
Physical dating violence		
No	29,355	97.45%
Yes	769	2.55%
Psychological dating violence		
No	26,553	88.15%
Yes	3,571	11.85%
Sexual dating violence		
No	29,888	99.22%
Yes	236	0.78%

*AANHPI: Asian American and Native Hawaiian Pacific Islander

** AIAN: American Indian and Alaskan Native

Table 2.3: Unadjusted associations of select characteristics and cyberbullying victimization, NCHA 2021

Characteristic	Unadjusted Odds Ratio	95% Confidence Interval
Academic Year		
1st year	1.65	(1.39, 1.95)
2nd year	1.56	(1.31, 1.84)
3rd year	1.26	(1.07, 1.49)
4th year or higher	1.00	Referent
Age		
18-19 years old	1.73	(1.40, 2.14)
20-21 years old	1.40	(1.14, 1.72)
22-23 years old	1.19	(0.95, 1.49)
24-25 years old	1.00	Referent
Race		
AANHPI* & AIAN**	1.20	(1.01, 1.43)
Black or African American	0.99	(0.63, 1.54)
Hispanic White	0.80	(0.65, 0.97)
Multiple race	1.53	(1.21, 1.93)
Other race	1.98	(1.47, 2.69)
Non-Hispanic White	1.00	Referent
Sex/Gender Identity		
Cis Women	1.00	Referent
Cis Men	0.77	(0.66, 0.90)
Transgender Men or Women	2.40	(1.84, 3.14)

Sexual orientation		
Heterosexual	Referent	
Bisexual	2.11	(1.80, 2.46)
Gay or Lesbian	2.34	(1.80, 3.04)
Other orientation	2.76	(2.29, 3.32)
Physical dating violence		
No	1.00	Referent
Yes	3.57	(2.82, 4.52)
Psychological dating violence		
No	1.00	Referent
Yes	2.59	(2.24, 2.99)
Sexual dating violence		
No	1.00	Referent
Yes	6.71	(4.82, 9.34)

*AANHPI: Asian American and Native Hawaiian Pacific Islander

** AIAN: American Indian and Alaskan Native

Table 3.3: Adjusted associations between physical, psychological, sexual dating violence and cyberbullying victimization, NCHA, 2021

Characteristic	**Adjusted Odds Ratio**	**95% Confidence Interval**
Physical dating violence		
No	1.00	Referent
Yes	3.38*	(2.66, 4.29)
Psychological dating violence		
No	1.00	Referent
Yes	2.58*	(2.23, 2.90)
Sexual dating violence		
No	1.00	Referent
Yes	5.60*	(3.99, 7.85)

*Adjusted for academic year, race, sex/gender identity, and sexual orientation

Table 4.3: Adjusted odds ratios and 95% confidence intervals of select characteristics and presence of cyberbullying- stratified by sex assigned at birth.

Characteristics	Cisgender Women		Cisgender Men		Transgender Men or Women		
	Adjusted Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI	BDT**
Physical DV							
No	1.00	Referent	1.00	Referent	1.00	Referent	
Yes*	3.31	(2.50, 4.39)	3.40	(2.03, 5.70)	4.63	(1.66, 12.88)	p< .6646
Psychological DV							
No	1.00	Referent	1.00	Referent	1.00	Referent	
Yes*	2.53	(2.14, 3.00)	2.55	(1.84, 3.54)	3.43	(1.77, 6.64)	p<.9619
Sexual DV							
No	1.00	Referent	1.00	Referent	1.00	Referent	
Yes*	4.74	(3.14, 7.17)	10.31	(5.09, 20.90)	6.96	(2.01, 24.06)	p<.1489

*Adjusted for academic year, race, and sexual orientation
**Breslow Day Test for Homogeneity of odds ratios: p<.05

CHAPTER FIVE: CONCLUSION

The primary aim of this dissertation was to answer the research question, "What is the association between exposure to IPV experiences and bullying?" Three separate studies, using three different age groups (children, adolescents, and early-adults), were conducted to examine associations between IPV experiences and bullying/cyberbullying. Consistently across each study, major results suggested those who experienced IPV (whether by witnessing IPV as a child or experiencing DV as an adolescent or college student) had increased odds of bullying/cyberbullying victimization. These associations remained statistically significant after controlling for a number of known confounding factors (e.g., age, race/ethnicity, sexual orientation, etc.).

In the study of children aged 6-9 (Study One), an association between witnessing parental IPV and in-person bullying victimization was observed, where children who witnessed parental IPV had increased odds of bullying victimization (Table A). In the study of adolescents aged 14-18 (Study Two), statistically significant associations between experiencing physical DV, sexual DV, FSI, and cyberbullying victimization were observed (Table A). These results also demonstrated a dose-response relationship between the number of times an adolescent experienced each type of DV and associated increased odds of cyberbullying (Table A). In the final study of DV experiences and cyberbullying victimization among college students aged 18-25 (Study Three), statistically significant associations between physical DV, psychological DV, and sexual DV and cyberbullying were also observed (Table A). Of these three DV-cyberbullying associations, college students who experienced sexual DV had the greatest odds of cyberbullying victimization, even after controlling for known confounding variables.

The secondary aim of this dissertation was to answer the research question, "Does sex/gender identity modify IPV-bullying associations?" In turn, associations between IPV experiences and bullying/cyberbullying were stratified according to sex/gender identity. In Papers One and Two, sex/gender identity did modify the association between witnessing parental IPV and bullying among children (aged 6-9) and experiencing DV and cyberbullying among adolescents (aged 14-18) (Table B). However, despite differences in DV-cyberbullying victimization associations among cis men, cis women, and transgender men or women, sex/gender identity was not found to be an effect modifier of the DV-cyberbullying associations among college students (aged 18-25), as results from the Breslow-Day Test of Homogeneity were not significant ($p<.05$) (Table B).

Taken together, the findings in this dissertation suggest that IPV experiences and bullying/cyberbullying victimization are associated. Evidence from this research also suggests that sex/gender identity may function as an effect modifier of these associations, but additional research is needed. Moreover, bullying, cyberbullying, and IPV/DV are complex problems, and there were differences and similarities in the results from these three studies that warrant further discussion.

One key difference across the three studies was in how IPV experiences were conceptualized for children, adolescents, and early adults. In Paper One, the exposure of interest was *witnessing* parental IPV. In Papers Two and Three, the exposure of interest was *experiencing* IPV/DV in a romantic partnership because, unlike young children, high school and college students are at risk for DV. Despite the differences in IPV exposures across the three studies, the same pattern remained: any exposure to IPV experiences was associated with increased odds of bullying/cyberbullying.

Papers Two and Three examined associations between experiencing different types of DV and odds of cyberbullying. These studies differed from Paper One in that in-person bullying was not the outcome of interest. In Paper Two, it was also possible to examine if the frequency of DV experiences was related to odds of cyberbullying victimization. Given the design of the NCHA survey, the frequency of DV could not be measured among college students in Paper Three. However, the magnitude of the DV-cyberbullying associations was similar across these two studies (Table A). More specifically, adolescents who experienced physical DV or sexual DV two or three times had similar odds of cyberbullying to college students who experienced any physical DV or sexual DV in the past year.

The results from Paper Two also suggest the frequency of DV experiences is relevant in its association with cyberbullying. As the number of times an adolescent experienced DV increased, odds of cyberbullying victimization also increased. For example, while youth who experienced physical DV once had twice the odds of cyberbullying, youth who experienced physical DV two or three times had triple the odds of cyberbullying, and youth who experienced physical DV four or more times had over quadruple the odds of cyberbullying (Table A). This pattern was consistent in the strength and direction of each type of DV-cyberbullying association.

In respect to the stratified analyses, differences in associations between IPV experiences and cyberbullying according to sex/gender identity were also present. A selection of the stratified results are provided in Table B, with special attention to the exposure sexual DV among adolescents and college students. In Paper One, sex did modify the witnessing parental IPV-bullying association, where the odds of bullying victimization were especially elevated among female children who witnessed parental IPV. This is consistent with previous research demonstrating that girls are more sensitive to witnessing parental IPV and are more vulnerable to

in-person bullying during childhood (Louis & Reyes, 2023). Stratified results from Paper Two suggested that sex/gender also modified the DV-cyberbullying association. However, in contrast to the results of Paper One, odds of cyberbullying victimization were especially elevated among males who experienced physical DV, sexual DV, or FSI. Although results from the Breslow Day Test of Homogeneity were not statistically significant in Paper Three, stratified results were similar to paper two in that, among cis men, sexual DV was associated with the highest odds of cyberbullying victimization. Furthermore, among transgender men or women, experiencing physical DV or psychological DV was associated with odds of cyberbullying that were particularly elevated. These associations are consistent with past research demonstrating transgender individuals are most vulnerable to DV and cyberbullying victimization (Whitfield, et al., 2021).

There were several limitations to the studies included in this dissertation. Because each of the three studies utilized cross-sectional data, a temporal relationship between exposure and outcome variables could not be established. Thus, it was not possible to know if witnessing parental IPV preceded in-person bullying victimization among children, or if experiencing DV preceded cyberbullying victimization among adolescents and early adults.

Non-differential misclassification of the exposure variables (witnessing parental IPV and DV experiences) and outcome variables (in-person bullying and cyberbullying) was also possible across studies, as each study design utilized self-report data. In respect to Paper One specifically, parents/guardians self-reported all behaviors on behalf of their child. In turn, it is possible that parents may have underreported their child's experience witnessing parental IPV or bullying victimization (Goodman, De Los Reyes, & Bradshaw, 2010). However, it is important to reiterate that self-report methods are the most commonly used way of measuring IPV and

bullying/cyberbullying across these populations (Vivolo-Kantor et al., 2014). Moreover, it is likely that any misclassification would result in findings biased toward the null.

Because each study utilized publicly available data sets (i.e., NSCH, YRBSS, NCHA), it was also not possible to control for all known confounding variables. Additionally, there were differences in how the YRBSS and NCHA conceptualized and measured DV. In the YRBSS, the DV was considered physical DV, sexual DV, or FSI, while in the NCHA, DV measures included physical DV, sexual DV, and psychological DV. Thus, the spectrum of DV experiences may not be fully captured as stalking (another type of DV) was not measured in either study design.

Implications

To this author's knowledge, the studies conducted in this dissertation were the first of their kind in that no prior research had examined associations between IPV experiences and bullying or cyberbullying among these populations. In turn, the findings of Papers One, Two, and Three are useful in providing new information about less understood associations, and as a result, there may be many implications for interpersonal violence-based research and prevention efforts. Furthermore, as Papers One and Two utilized nationally representative data, these results may also be generalizable to U.S. children aged 6-9 and adolescents aged 14-18 and could be used to inform school-based bullying/cyberbullying and DV prevention in the U.S.

One implication from this dissertation is to encourage the integration of bullying/ cyberbullying and IPV/DV prevention efforts at schools. There are many bullying/cyberbullying prevention programs (e.g., *Take A Stand; OLWEUS Bullying Prevention Program; Steps to Respect,* etc.) and IPV/DV prevention programs are currently implemented at U.S. elementary schools and high schools (e.g., *Safe Dates; Dating Matters; Start Strong*, etc.). These programs

excel in delivering bullying/cyberbullying prevention information and reducing violence victimization among students of different ages. However, in general, bullying/cyberbullying and IPV/DV victimization are approached as different topics. Future programs might also choose to include information about relationships *between* these issues, as opposed to addressing them separately.

Results from Papers Two and Three demonstrated differences in cyberbullying victimization with respect to the type of DV experienced. Among both adolescents and college students, the sexual DV-cyberbullying association was the strongest association, meaning that students who experience this type of DV may be at the greatest risk of cyberbullying. In turn, cyberbullying prevention efforts at high schools and universities might expand resources for sexual DV victims, specifically, to build awareness about online safety. Importantly, results from the stratified analysis among adolescents indicate that adolescent boys who experience sexual DV are especially at risk of cyberbullying victimization. If boys who experience sexual DV are most vulnerable to cyberbullying victimization, high schools might train faculty and staff to look out for warning signs of this abuse both online and offline.

Bystander intervention programs are a growing effort to reduce interpersonal violence and harassment on college campuses. For example, one bystander intervention program is "Green Dot" which trains students, faculty, and staff to recognize and intervene in situations of interpersonal violence (Coker et al., 2022). Given that Study Three findings suggest associations between DV and cyberbullying exist among college students, bystander intervention programs might also be expanded to train students and staff to also intervene in situations of online violence. Furthermore, these programs may also consider the importance of sex/gender identity

and its relationship with these interpersonal violence-related topics, especially as it relates to those most vulnerable (i.e., transgender students).

Future Research

There are many opportunities for future studies of IPV experiences and bullying/cyberbullying that may be informed by this dissertation. To begin, longitudinal research on IPV experiences and future bullying/cyberbullying victimization is needed to determine the directionality of the association. Future studies will also benefit from examining these associations in more diverse populations and age groups. For example, this dissertation did not examine associations between IPV experiences and bullying/cyberbullying among middle school students; this represents one specific gap in knowledge future studies might fill.

Additional research is also needed to determine if sex/gender identity functions as an effect modifier of IPV-bullying/cyberbullying associations. Furthermore, studies will benefit from considering a more comprehensive spectrum of sex/gender identity. Because this dissertation utilized secondary data, sex/gender identity was limited to how each dataset collected this information, and as a result, not all groups were fully represented. Similarly, future studies should consider a more comprehensive spectrum of DV experiences. For instance, one type of DV that was not examined in this dissertation was stalking, and the association between stalking and cyberbullying specifically should be examined across age groups. Future studies may also consider associations between witnessing parental IPV and cyberbullying, as well as in-person bullying, among children as it is well-known that children also use technological devices. Likewise, research with adolescents and college students should examine associations between DV and in-person bullying as well as cyberbullying to better capture bullying experiences in older populations.

In conclusion, bullying and cyberbullying are prominent public health problems threatening the health, safety, and livelihood of individuals throughout the world. In support of efforts to reduce bullying in the U.S. (U.S. Department of Health and Human Services, 2022), this dissertation examined a less understood risk factor for bullying and cyberbullying victimization: IPV experiences (witnessing parental IPV and experiencing DV). Findings from this dissertation research suggest that U.S. children, adolescents, and early adults exposed to IPV are more vulnerable to bullying/cyberbullying victimization than those who are not exposed to IPV. It is the hope of this researcher that these findings may be used to protect and promote the health of all people as no one is deserving of violence.

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Table A: Associations between IPV experiences and bullying/cyberbullying victimization according to the dissertation study

Dissertation Study & Characteristics	Adjusted Odds Ratio	95% Confidence Interval
Paper One *(NSCH Study)*		
Witnessed parental IPV		
No	1.00	Referent
Yes [a]	3.15	(1.97, 5.05)
Paper Two (*YRBSS Study*)		
Sexual Dating Violence Frequency [b]		
0 times (ref)	1.00	Referent
1 time	2.98	(2.31, 3.85)
2 or 3 times	3.57	(2.57, 4.96)
4 or more times	4.56	(2.93, 7.09)
Physical Dating Violence Frequency [c]		
0 times (ref)	1.00	Referent
1 time	2.36	(1.75, 3.18)
2 or 3 times	3.61	(2.59, 5.02)
4 or more times	4.24	(3.03, 5.94)
Forced Sexual Intercourse Frequency [b]		
0 times (ref)	1.00	Referent
1 time	2.49	(1.97, 3.13)
2 or 3 times	4.10	(3.33, 5.05)
4 or more times	4.82	(3.49, 6.65)

Paper Three *(NCHA Study)*		
Physical dating violence [d]		
No	1.00	Referent
Yes	3.38	(2.66, 4.29)
Psychological dating violence [d]		
No	1.00	Referent
Yes	2.58	(2.23, 2.90)
Sexual dating violence [d]		
No	1.00	Referent
Yes	5.60	(3.99, 7.85)

[a] Adjusted for ADHD, family structure, and average household income
[b] Adjusted for sex, age, grade, sexual orientation, and race/ethnicity
[c] Adjusted for sex and sexual orientation
[d] Adjusted for academic year, race, sex/gender identity, and sexual orientation

Table B: Comparison of stratified results according to sex/gender identity across dissertation studies

	Study One	
	Adjusted Odds Ratio*	95% CI
Females		
Witness parental IPV [a]		
No	1.00	Referent
Yes	3.55	(1.86, 6.76)
Males		
Witness parental IPV [a]		
No	1.00	Referent
Yes	2.92	(1.54, 5.51)
	Study Two	
	Adjusted Odds Ratio*	95% CI
Females		
Sexual DV [b]		
0 times	1.00	Referent
1 time	2.95	(2.19, 3.97)
2-3 times	3.24	(2.30, 4.56)
4 or more times	3.34	(2.08, 5.37)
Males		
Sexual DV [b]		
0 times	1.00	Referent
1 time	2.92	(1.14, 6.12)
2-3 times	6.90	(3.50, 13.62)
4 or more times	6.45	(3.23, 12.88)
	Study Three	
Study Characteristics	Adjusted Odds Ratio**	95% CI
Cis Women		

Sexual DV [c]		
No	1.00	Referent
Yes	4.74	(3.14, 7.17)
Cis Men		
Sexual DV [c]		
No	1.00	Referent
Yes	10.31	(5.09, 20.90)
Transgender men or women		
Sexual DV [c]		
No	1.00	Referent
Yes	6.96	(2.01, 24.06)

[a] Adjusted for ADHD, family structure, and average household income

[b] Adjusted for age, grade, sexual orientation, and race/ethnicity

[c] Adjusted for academic year, race, and sexual orientation

* Breslow Day Tarone Test for homogeneity of odds ratios (Pr > ChiSq = < .0001)

** Breslow Day Test for Homogeneity of odds ratios (Pr > ChiSq = p<.148)