

Traditional Bullying and Cyberbullying among Adolescents: Patterns and Correlates of
Victimization vs. Perpetration

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by

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DEDICATION

This is dedicated to my beloved mom who is the strongest woman I know, who sacrifices everything to give her daughter a better life, continually provide her moral, emotional, and financial support. This work is also dedicated to my professor Dr. Griffin, who has been a constant source of knowledge and inspiration. And lastly this is dedicated to Almighty God, thank you for guidance, strength, wisdom, power of mind, protection and for me a healthy life.

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ABSTRACT

TRADITIONAL BULLYING AND CYBERBULLYING AMONG ADOLESCENTS: PATTERNS AND CORRELATES OF VICTIMIZATION VS. PERPETRATION

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Traditional bullying and cyberbullying are serious global public health concerns. Based on a national sample of 2,439 students from 30 public middle schools between the ages of 10 and 14 ($M = 11.7$ years) in the United States, we investigated patterns and predictors of four types of bullying (physical, verbal, social, and cyber) including both bullying victimization and perpetration. We also examined how demographic variables and several psychosocial risk and protective factors would be related to bullying victimization and perpetration. Overall, findings indicated that bullying victimization and perpetration were widespread, with verbal bullying the most frequent type of bullying both in terms of victimization and perpetration, and cyberbullying the least frequently reported. Boys were more likely to engage in physical bullying perpetration, while girls were more likely to report being victimized by relational (verbal and social) bullying. Findings indicated that knowing how to respond to bullying and acting in appropriate ways to bullying, or bullying prevention skills, were associated with less bullying perpetration. However, we found that conflict resolution skills were not associated with many forms of bullying. While the study included a large sample and measured multiple

forms of bullying, limitations were the cross-sectional design which limited the ability to examine direction of causality. Future research should examine samples containing students from diverse communities and countries, assessing in greater detail the contexts in which bullying occur. This can help us understand how factors that place students at relative disadvantage interact with the environments in which students are bullied.

INTRODUCTION

Bullying is a serious global public health concern. The term bullying refers to aggressive, intentionally inflicted, repeated actions against someone who is unable to defend themselves (Olweus, 1997). The main types of traditional bullying have been identified by Bjorkqvist (1992) as direct physical aggression (e.g., hitting, pushing, kicking), direct verbal aggression (e.g., name-calling, threatening), and indirect aggression (e.g., telling tales, spreading rumors). Others have categorized traditional bullying as either physical, psychological, and/or verbal bullying (Whitney & Smith, 1993).

In recent years, cyberbullying has emerged as a new form of social cruelty that has grown alongside the rapid development of information and communication technologies. Cyberbullying is defined as “an aggressive, intentional act carried out by a group or individual, *using electronic forms of contact*, repeatedly and over time against a victim who cannot easily defend him or herself” (Smith et al., 2008). Scholars have classified types of cyberbullying to include aggressive messaging, hostile website development, commenting/posting embarrassing photos/videos (Law, Shapka, Domene & Gagné, 2012); harassment, verbal and sexual harassment, cyberstalking, denigration, impersonation, outing and trickery, exclusion (Staude, Hansen & Voss, 2012); and posting, coercing, backstabbing, and masquerading (Mishna, Saini & Solomon, 2009).

These types of cyberbullying occur through various means that including text messages, emails, phone calls, picture/video clips (Slonje & Smith, 2008), instant

messaging, other chat tools, websites, and blogs (Law et al., 2012). Cyberbullying is linked to the increased access to smartphones and the internet among adolescents. In the U.S., it is estimated that 45 million children from 10 to 17 years of age use the internet every day (Williams & Guerra, 2007). Recently, research found that 95% of adolescent have access to smartphones and over half of them reported use the internet almost constantly (Anderson & Jiang, 2018). Given the likely continued increase in internet and smartphone access among youth, cyberbullying is expected to continue to grow in prevalence in decades to come.

Prevalence Rates

Bullying and cyberbullying are prevalent across multiple studies conducted in the United States and throughout the world. In the U.S., national surveys have found 22.7% of children and adolescents reported being bullied by others and 6.4% reported bullying others (Lebrun-Harris, Sherman, Limber, Miller & Edgerton, 2019). In this study, bullying victimization rates were slightly but statistically significantly higher among 6-11 years old (24.1%) compared to 12-17 years old (21.1%). In a nationally representative sample in the United States, Nansel and colleagues (2001) reported the prevalence of school bullying in past two months was about 30% overall, with bullies, victims and both accounting for 13%, 10.6% and 6.3% respectively. Williams and Guerra (2007) conducted a statewide bullying study in Colorado schools with thousands of students in grades 5, 8 and 11 and found that verbal bullying (71%) had the highest prevalence rate, followed by physical bullying (40%), and cyberbullying (9%).

Moreover, the Health Behavior in School-aged Children (HBSC) study, a nationally representative dataset, found the prevalence rate of bullying others or having been bullied at school at least once in the last two months: including 20.8% as physically, 54.6% as verbally, 51.4 % as socially, and 13.6% as electronically (Wang, Iannotti & Nansel, 2009). Among a national sample of American adolescent between age of 12-17, about 22% of students had experienced cyberbullying in multiple ways, over two times in the previous month (Hinduja & Patchin, 2017). According to the Youth Risk Behavior Surveillance System (YRBSS), 15.5% of adolescents had been electronically bullied in 2015 (Kann et al., 2016). In summary, data from a variety of sources reveal that prevalence rates for traditional bullying and cyberbullying are quite frequent in the U.S., with verbal bullying the most common type of bullying among adolescents, followed by physical bullying.

From an international perspective, the estimated prevalence rates for bullying vary considerably across countries (Craig et al., 2009; Li, 2006; Molcho et al., 2009; Pornari & Wood, 2010; Wang, Iannotti, Luk & Nansel, 2010). In Canada, Li (2007) surveyed 177 middle school students in a large urban city. Nearly 54% of students had been victims of traditional bullying, and about 15% had been cyberbullied. Approximately 60% of the cyber-victims were girls and over 50% of cyber-bullies were boys. In Italy, bullying was studied among students between 11–17 years of age from seven secondary schools (Baldry, Farrington & Sorrentino, 2017). In this study, about 60% of the students reported being victims of school bullying, and about 26% were cyber-victims in the previous six months. Their analysis revealed that the bully/victim group is the most

overlapping group in school and online bullying for both boys and girls. In England, a cross-sectional study of students aged 11 – 16 year in 40 secondary schools showed about 40% of girls and 32% of boys reported bullying victimization (Bevilacqua et al., 2017). In Sweden, a cross-sectional study in Värmland focused on Swedish students in grades 7-9, aged 13–15, and results indicated that nearly 30% of students reported traditional bullying, about 20% of students reported being a victim of traditional bullying, 9% of students reported being a cybervictim, and 5% of students reported being a cyberbully (Beckman, Hagquist & Hellsröm, 2013). In Hong Kong, Wong et al. (2014) examined the prevalence of cyberbullying, using a secondary data sample from six schools, 6th-8th grade, and aged 12-15. Within in a 30 day- period, 13% of students report cyberbullying perpetration and 12% of students reported cyberbullying victimization (Wong, Chan & Cheng, 2014). In South Korea, Shin & Ahn (2015) collected data from five secondary schools in Seoul, aged 12 -18 years old. Findings indicated that over 20% of the adolescents were involved in cyberbullying and 8% of them reported cyberbullying, 8% of them report being victims of cyberbullying, and 5% engaged in both bullying and were victims of other bullies.

Looking deeper at multiple international statistics on bullying, bullying is very pervasive globally. Earlier international studies found a high prevalence of lifetime traditional bullying among both genders, also girls may be confronted more frequently with cyberbullying victimization. In a study of bullying in over 40 countries, Craig and colleagues (2009) found that adolescents in countries bordering the Baltic reported higher prevalence rates of bullying and victimization compared to adolescents in Northern

European countries, who reported the lowest rates. In an international survey of global comparison of bullying, the percentage of adolescents who experienced bullying at least once within the last 30 days ranged from a low of 12% to 18% in some countries to a high of 60 -70% of others (Richardson & Fenhiu, 2018). Globally, in only two countries, Tajikistan (7.1%) and South Korea (9.7%), do fewer than one in ten adolescents experience bullying. More than 70% of adolescents experienced bullying at least once within the last 30 days in the top five countries with the highest rate of bullying (e.g., Botswana 81%, Ghana 78%). UNICEF defined the United States as a medium level of global bullying risk that nearly 37% of adolescents report being bullied within the last 30 days (Richardson et al., 2018). In this survey, the prevalence of bullying was moderately higher among American adolescents (37%) compared to those reported among other countries including, in descending order, Germany (35%), Mexico (33%), China (31%), United Kingdom (27%), Iraq (27%), Greece (27%), Vietnam (26%), Italy (24%), and Sweden (19%). According to the international survey of 2005-2006 Health Behaviors in School-aged Children (HBSC), among 11, 13 and 15 year old student from 40 countries, nearly 11% of participants reported bullying others, about 13% reported being bullied and about 4% reported being both a bully and a victim of bullying (Craig et al., 2009).

Multiple international studies discovered a strong overlap between involvement in forms of traditional and cyberbullying (Kowalski & Limber, 2013; Waadorp & Bradshaw, 2015; Wong, Chan & Cheng, 2014; Modecki, Minchin, Harbaugh, Guerra & Runions, 2014). A study of grade 9 students in the U.S. found that approximately 75% of students reported that they observed some form of bullying, 15% of student reported they

did not feel very safe when being bullied by other students, 82% of students reported the most bullying behavior at lunchtime, following by in the classroom (69%), and direct verbal aggression (calling a hurtful name, 41%) was the most common form of bullying (Harris, Petrie & Willoughby, 2002). A Canadian study found calling people names (20%) is the most frequently reported type of bullying, following by imitating someone online (13%). In UK, a study of 904 participant in grade 8 – 11 with aged 12 -17 in two coeducational secondary schools found a similar result that name-calling is the most common type of bullying in both sexes (Salmon, James & Smith, 1998). Direct physical aggression experience was more common among boys, while girls are more involved in indirect forms of violence (Iossi, Pereira, Mendonca, Nunes & Oliveira, 2013; Owens, Shute, & Slee, 2000; Wang, Iannotti & Nansel, 2009). Likewise, an Italian study of middle school reported that the most frequent types of bullying among boys were threats, physical attack, and name-calling; girls were more likely to experience name-calling, teasing, rumors, and a low sense of belonging (Baldry, 1998).

Overall, international studies have shown that bullying is prevalent among adolescents across the globe. This research reveals that the pervasive rate of traditional victimization is more frequent than cyber victimization, and name-calling is the most commonly reported type of bullying for both sexes. Also, multiple studies consistently show that boys are more likely to be involved in direct or physical bullying, whereas girls are more likely to involved in indirect or relational bullying.

Demographic and Other Subgroup Differences

Studies show that several demographic and other subgroup differences are associated with patterns of bullying and cyberbullying, including differences by gender, socioeconomic status, and race/ethnicity. Gender patterns in traditional bullying have been marked over time and boys are more likely to be involved in bullying, particularly direct physical bullying, and girls are more likely to be involved in indirect cyberbullying. Other subgroup differences include that bullying is more prevalent among youth from low socioeconomic backgrounds and minority groups are at greater risk of bullying victimization. Numerous domestic and international studies indicate that boys are more likely to be involved in traditional bullying (Beckman, Hagquist & Hellström, 2013; Ding et al., 2020; Kowalski et al., 2013; Wong et al., 2014), and girls are more likely to be involved in cyberbullying (Festl & Quandt, 2016; Wade & Beran, 2011; Snell, & Englander, 2010). Various cross-sectional studies reported boys are more likely to be involved in traditional bullying perpetration (Beackman et al., 2013; Ding et al., 2020; Kowalski et al., 2013; Wong et al., 2014), and girls are more likely to be both victims and perpetrators of cyberbullying (Snell & Englander, 2010; Kowalski et al., 2012). In addition to these gender disparities, studies also demonstrate that other demographic factors can increase the risk of traditional bullying and cyberbullying. Stepheson and Smith (1989) distinguished the characteristic both in sexes that male bullies are dominating, disruptive in class, lacking the ability to concentrate, and attempt to be tough, whereas female bullies are talkative, rude, controlling, and engage in verbally abusive behavior.

Adolescents from low socioeconomic status (SES) backgrounds have been found to be more involved in bullying. A study of adolescents from low SES backgrounds in grades 6 to 12 explored the prevalence of bullying and victimization by gender, grades, and race/ethnicity (Peskin Tortolero & Markham, 2006). Findings indicated that bullying and victimization are more prevalent among low SES students. A study conducted in England reported similar findings that low SES is associated with an increased risk of being involved in bullying (Bowes et al, 2009). In a meta-analysis of 28 studies, Tippett and Wolke (2014) found that both victims and bully-victims were more likely to be from low socioeconomic households, and low SES was a cause for victimization. Also, children who were from low SES families were more likely to experience harsher punishment, authoritarian parenting practices, high levels of sibling violence, and domestic violence.

Differences in bullying and cyberbullying have been found across racial/minority groups (Llorent, Ortega-Ruiz & Zych, 2016; Luck, Wang & Simons-Morton, 2012; Glodweber, Waasdorp, Bradshaw, 2013; Saloner, Carson & & Lê Cook, 2014). Mouttapa (2004) found that the most frequently reported reason for being bullied by urban victims was their race or skin color, and Asian-Americans were the most frequently victimized ethnic group regardless of a school's racial composition. Compared with Hispanic students, African American adolescents were more likely to participate in bullying and victimization (Glodweber et al., 2013; Peskin et al, 2006). Other studies show that poor academic performance as indicated by low grades at school is associated with bullying (Carlyle & Steinman, 2007; Lester, Cross & Shaw, 2012; Luk, Wang & Simons-Morton,

2012; Olweus, 1991; Ortega, Elipe, Mora- Merchán, Calmaestra & Vega, 2009; Walrave & Heirman, 2010; Whitney & Smith, 1993).

In summary, a review of the literature indicates that minority status or relative disadvantage are important risk factors for bullying victimization and that this finding is found across multiple samples, countries, and cultures. Minority status can include race/ethnicity as well as sexual minority status (e.g., being lesbian, gay, or bisexual) (Llorent et al., 2016). Furthermore, findings from several studies indicate that younger adolescents in the middle school years are most likely to experience bullying and cyberbullying (Carlyle & Steinman, 2007; Lester et al., 2012; Luk et al., 2012), so examining patterns of bullying victimization and perpetration is particularly important during the early adolescent years.

Associations with Related Risk Behaviors

Both substance use and bullying among adolescent are widely recognized as critical public health concerns since both behaviors can lead to negative development outcomes. According to a number of empirical studies, substance use is positively correlated with bullying in adolescents (Bassarath, 2001; Schnohr & Niclasen, 2006). Acquah, Wilson & Doku (2014) studied risk factors associated with bullying behavior among adolescents in a lower-middle-income country setting. Researchers obtained the data derived from the Republic of Ghana's contribution to the Global School-based Health Survey that focus on aged 11-16 year. This study indicates the alcohol-related health compromising behaviors (alcohol use, alcohol misuse, and getting into trouble as a result of alcohol), substance use, being physically attacked, being seriously injured,

hunger, and truancy were also found to increase the risk of being bullied. Likewise, a study found that greater substance use was significantly associated with higher bullying aggression among 6th -12th graders in metropolitan Ohio (Carlyle & Steinman, 2007).

In the US study, bully-victims indicates the greatest level of substance use among adolescents (Badiff, Wheaton, Rohinson & Morris, 2012). In this report, compared with adolescent not involved in bullying, adolescents who participant in bullying were more likely to use substances. Van Ouytsel et al. (2017) examined the relationships among bullying, substance use, sexual behavior, deviant behavior, and cyber dating violence. In this study, compared to adolescents with no history of any sexual intercourse and substance use, adolescents who had a history of sexual intercourse and used alcohol or drugs had a higher likelihood of perpetrating cyber dating abuse.

Risk and Protective Factors for Bullying and Cyberbullying

Meta-analytic reviews indicate that bullying has several important psychosocial risk and protective factors. Being victimized by one's peers has been shown to be related to depressive symptoms, psychosomatic problems, poor emotional adjustment and dysfunctional relationships with peers (Campfied, 2008; Gini & Pozzoli, 2009; Hawker & Boulton, 2000; Patchin & Hinduja, 2010). These negative developmental and relationship outcomes may be both a cause and consequence of bullying. Other psychosocial factors have been shown to be protective. Knowing how to effectively respond to bullying situations may reduce victimization and perpetration of oneself and one's peers, and such bullying prevention skills appear to be a key component of bullying prevention programs (Gaffney et al., 2019). Furthermore, various studies on the

effectiveness of school safety measures have to address bullying indicate that teaching conflict resolution skills can enhance peaceful problem solving, increase self-esteem, and reduce bullying, as well as improve the school climate (U.S. Department of Justice, 1997). Thus, is it important to investigate key risk and protective factors for bullying victimization and perpetration to inform prevention efforts.

Goals of the Present Study

The purpose of the present study was to explore the prevalence of traditional and cyberbullying, and to examine the pattern and correlates of victimization and perpetration among racial/ethnic, and gender subgroups. Specifically, we wanted to: (1) investigate the prevalence of traditional bullying and cyberbullying among adolescents, comparing bullying and cyberbullying for boys and girls as well as by race/ethnicity; and (2) examine other demographic factors (e.g., gender, race) and risk factors (e.g., low socioeconomic status, non-White in predominantly White school, smoking and alcohol use) whether they have an association with bullying and cyberbullying, including victimization and perpetration; (3) examine patterns and predictors of traditional bullying and cyberbullying including perpetration and victimization. We also sought to (4) identify whether a number of potential protective factors, including good academic grades, bullying knowledge, bullying prevention skills (e.g., knowing how to effectively respond to bullying situations), and conflict resolution skills, were associated with lower levels of the various subtypes of bullying victimization and perpetration.

We hypothesized that boys would be more likely to engage in traditional bullying and physical bullying compared to girls, and that girls would be more likely to be

involved in cyberbullying relative to boys, both in terms of victimization and perpetration. We also expected that other demographic factors would be associated with an increased risk for traditional bullying and cyberbullying, particularly those factors that place students at relative disadvantage, such as racial minority status and low social economic status. In addition, we hypothesized that racial minority students at predominantly white schools may be particularly at risk for bullying victimization. Additional hypotheses included that bullying and cyberbullying would be associated with other risk behaviors including alcohol and drug use. Finally, we predicted that protective factors such as good academic performance as measured by grades in school, bullying knowledge, bullying prevention skills, and conflict resolution skills would be associated with reduced rates of different types of bullying victimization and perpetration.

METHOD

Sample

A total of 2,439 students from 30 public middle schools in the United States participated in the present study. Schools were located throughout the United States, in urban, suburban, rural areas, primarily in the east coast and mid-west of the U.S. All students in grades 6, 7, or 8 of the participating schools were selected for inclusion in the study. The sample was 53.8 % girls and 45.8% boys with a mean age of 11.7 years (range 10 – 14). The racial/ethnic composition of the sample was 47.7% White, 21.6% Hispanic or Latino, 15.2% African American, 5.7% American Indian/Alaska Native (AIAN), 4.2 % Asian, 2% Native Hawaiian or Other Pacific Islander (NHOPI), and 15.5 % preferred not to answer. About 41.6% of students received free or reduced-price lunch at school, which we used in the present study as an indicator of economic disadvantage because most students who qualify for free or reduced-price lunch come from families with low incomes.

Procedure

Following a protocol approved by the Institutional Review Board, participants were administered an online survey that assessed self-reported bullying behaviors along with relevant knowledge, attitude, and skill variables that may play a role in bullying behaviors. Substance use and other potential risk and protective factors for bullying victimization and perpetration were collected. Unique identification codes were utilized

so that students did not report their names on the survey and their responses were therefore confidential.

Measures

Data were collected from students using an online questionnaire. Student completed the online survey in a number of setting depending on the school, some student completed the survey in the classroom, while others completed the survey either in a school computer lab or at home. Many of the measures used were derived from well-known and widely used instruments that have been used in previous studies (e.g., Botvin et al., 2001). Demographic data on the characteristics of participants were collected by using standard survey items such as gender, age, race and ethnicity, socio-economic status (whether received free or reduced lunch at school), academic achievement (grades).

Bullying Victimization

Bullying victimization was measured using 11 survey items that included behaviors related to physical, verbal, social, and cyberbullying. The Cronbach alpha for the bullying victimization items was .92. All items used the stem: “About how often (if ever)?” and response options were on a 9-point scale from never (1), a few times but not in the past year (2), a few times in the past year (3), once a month (4), a few times a month (5), once a week (6), a few times a week (7), once a day (8), and more than once a day (9). Physical bullying victimization was assessed using three items that included “have you been pushed or shoved by another student on purpose?”, “have you been beat

up by another student?” “have you had your belonging broken by another student on purpose?” Verbal bullying victimization was assessed using two items several items “have other students made fun of you?” and “have other students said mean things about you behind your back?” Social bullying victimization was assessed with two items: “have other students excluded you or ignored you on purpose?”, “have other students spread rumors about you to try to hurt your reputation”. Cyber bullying victimization was assessed using four items: “have other students written or commented mean things about you online?”, “have other students sent you unwanted messages online?”, “have other students threatened to post your personal information, photos, or videos online in order to hurt you?”, and “have other students posted your personal information, photos, or videos online in order to hurt you?”.

Bullying Perpetration

Bullying perpetration was measured using 11 survey items that included behaviors related to physical, verbal, social, and cyberbullying. The Cronbach alpha for the bullying victimization items was .94. All items used the stem: “About how often (if ever)?” and response options were on a the same 9-point scale described above. Physical bullying perpetration was assessed with three items: “have you pushed or shoved another student to make them feel bad?” “have you beat up another student to make them feel bad?”, “have you broken another student’s belongings on purpose to hurt them?”. Verbal bullying perpetration was assessed with two items: “have you made fun of other students?”, “have you said mean things about other students behind their back?”. Social bullying was assessed using two items: “have you excluded or ignored another student on

purpose?” and “have you spread rumors about another student to try to hurt their reputation?” Cyberbullying perpetration was assessed with four items: “have you written or commented mean things about another student online?”, “have you sent unwanted messages to another student online?”, “have you threatened to post someone’s personal information, photos, or videos online in order to hurt them?”, and “have you posted someone’s personal information, photos, or videos online in order to hurt them?”.

Bullying Knowledge

Bullying knowledge was assessed by asking students a series of true-false questions about what bullying behaviors are and the degree to they knew how to respond appropriately to bullying situations. Six true-false items assessed bullying knowledge. “Spreading rumors about someone is not considered bullying” (F), “Sending someone mean comments or messages online is a type of cyberbullying” (T), “One way to stop bullying is to be direct and tell the bully to stop what they are doing” (T), “One way to stop bullying is to cause a distraction that takes attention away from the bully” (T), “One way to stop bullying is to get someone else involved to help deal with the situation” (T), and “Most teens want to stop bullying when they see it happening” (T).

Bullying Prevention Skills

A series of items were assessed to determine the degree to which students responded appropriately to bullying situations and the items included behaviors related to confronting the bully, causing a distraction, looking for help, or seeking an adult. These four items used the stem: “If I saw someone being bullied,” and response options for these items ranged from Strongly Disagree (1) to Strongly Agree (5). The items included

“I would directly confront the person doing the bullying”, “I would cause a distraction to make it stop”, “I would look for someone who could help me intervene”, and “I would report it to a teacher, parent, or other adult.” The mean was calculated to create a summary score. The Cronbach alpha for the bullying prevention skills items was .68.

Conflict Resolution Skills

A series of items assessed the degree to which students responded effectively to situations involving conflict. These were assessed with three items: “I solve conflicts by giving in to what other people want” (recoded), “I would keep quiet and avoid someone if I had a conflict with them.” (recoded), and “I try to resolve conflicts by creating a win-win situation for everyone.” Items were recoded such that higher scores reflected more desirable behaviors and the mean was calculated to create a summary score. The Cronbach alpha for the conflict resolution items was .80.

Substance Use

Cigarette smoking and alcohol use were measured with two items: “About how often (if ever) do you smoke cigarettes?” and “About how often (if ever) do you drink beer, wine, or hard liquor (excluding religious ceremonies)?” Response options were on a 9-point response scale to assess frequency of engaging in each behavior, from 1 (never) to 9 (more than once a day).

Data Analysis Strategy

In a series of crosstabulations, we tested gender and race/ethnicity differences using chi-square analyses to determine if there were differences in bullying victimization and perpetration, focusing on the four subtypes of physical, social, verbal, and cyber

bullying. In order to examine lifetime, annual, and monthly prevalence rates, the bullying items were recoded from their original 9-point scale, which included: Never (1), A few times but NOT in the past year (2), A few times a year (3), Once a month (4), A few times a month (5), Once a week (6), A few times a week (7), Once a day (8), More than once a day (9). Those who reported two or higher were categorized as reporting lifetime prevalence, those who reported three or higher were categorized as reporting annual prevalence, and those who reported four or higher were categorized as reporting monthly prevalence. Next, in a series of multiple logistic regression analyses, we examined demographic and psychosocial risk and protective factors as predictors of bullying victimization and perpetration for the same four subtypes of bullying victimization and perpetration. We examined the odd ratio and 95% confidence intervals to examine the impact of the demographic and of risk and protective factors of bullying outcome.

RESULTS

Table I.A. indicates the proportion of adolescents who reported experiencing various form of bullying victimization in their lifetime, in the past year (annual), and in the past month. With regards to lifetime prevalence, in descending order, 61.5% of students reported verbally bullying victimization, 58.4% of adolescents in the sample reported being physically bullied by others in their lifetimes, 53.4% of students reported social bullying victimization, and 28% of students reported cyberbullying victimization in their lifetimes.

Gender Differences in Bullying

Gender differences were examined in bullying victimization and perpetration, focusing on the four subtypes of physical, social, verbal, and cyberbullying.

Gender Differences in Bullying Victimization

Several gender differences in bullying victimization were observed, particularly for lifetime and annual prevalence. Findings indicated that girls were more likely than boys to be victimized in their lifetime for verbal (65.6% vs 56.7%, $\chi^2(1) = 20.31, p < .001$), social (57.1% vs 49%, $\chi^2(1) = 16.14, p < .001$), and cyberbullying (29.8% vs 26%, $\chi^2(1) = 4.46, p < .05$). With regards to past year victimization, boys were more likely to report physical bullying victimization compared to girls (40.7% vs 35%, $\chi^2(1) = 8.42, p < .01$), but less likely to report relational forms of bullying including verbal (40.7% vs 45.1%, $\chi^2(1) = 6.32, p < .05$) and social bullying victimization (32.1% vs 36.2%, $\chi^2(1) = 4.48, p < .05$). There were no gender differences in past year cyberbullying

victimization. When bullying victimization in the past month was examined, the only significant difference was that boys were more likely to report physical bullying victimization (25.3%) compared to girls (18.7%), $\chi^2(1) = 15.66, p < .001$.

In summary, the findings indicate high levels of bullying victimization overall, with the majority of students reporting being victimized in their lifetimes by verbal, physical, and social, bullying. Rates of lifetime cyberbullying victimization were noticeably lower, about half that of other forms of bullying victimization. Gender differences were observed in several types of bullying victimization, particularly when lifetime and annual prevalence rates were examined. Physical bullying victimization was more likely to be reported by boys, and relational bullying victimization (social and verbal) generally more likely to be reported by girls. The only significant gender difference in monthly prevalence was in terms of physical bullying victimization, which was higher in boys relative to girls.

Gender Differences in Bullying Perpetration

Table I. B. demonstrates the proportion of adolescents who reported engaging four types of bullying perpetration in their lifetime, in the past year (annual), and in the past month. In terms of lifetime prevalence, in descending order, 30.4% of adolescents reported verbal bullying perpetration, 26.2% of students reported social bullying perpetration, 16.2% of adolescents in the sample reported physical bullying perpetration, and 9% of students reported cyberbullying perpetration in their lifetimes. The only significant gender difference in lifetime bullying perpetration was in terms of physical bullying, with boys reporting higher rates than girls (20.6% vs 12.5%, $\chi^2(1) = 28.98, p <$

.001). Regarding past year perpetration, boys were more likely to engage in physical bullying (9.7% vs 6%, $\chi^2(1) = 11.26, p < .001$) and social bullying (13.9% vs 10.8%, $\chi^2(1) = 5.49, p < .05$), relative to girls. The only significant gender difference in bullying perpetration in the past month was that boys were more likely to report engaging in social bullying perpetration (8.8%) compared to girls (6.3%), $\chi^2(1) = 5.57, p < .05$.

In summary, findings show that relational (social and verbal) bullying perpetration was considerably higher than other forms of bullying in the sample. Relative to girls, boys were more likely to report engaging in physical bullying perpetration in their lifetimes and in the past year, as expected. Unexpectedly, boys were more likely to report social bullying perpetration in the past year and past month, relative to girls.

Racial/Ethnic Differences in Bullying

Differences by race/ethnicity were examined in bullying victimization and perpetration, focusing on the four subtypes of physical, social, verbal, and cyberbullying. Race/ethnicity was dichotomized to examine White vs. non-White students, as well as Black vs. non-Black, and Hispanic Latino vs. non-Hispanic Latino students.

Race/Ethnicity Differences in Bullying Victimization

White vs non-White. Table II.A. reveals that there were several race differences in bullying victimization, such that White students were more likely to report being victimized in their lifetime and in the past year for verbal (66.8% vs 56.5%, $\chi^2(1) = 27.27, p < .001$; 46.9% vs 38.8%, $\chi^2(1) = 16.54, p < .001$), physical (62.8% vs 54.1%, $\chi^2(1) = 18.91, p < .001$; 41.4% vs 34%, $\chi^2(1) = 14.01, p < .001$), and social bullying (57.9% vs 49.1%, $\chi^2(1) = 18.62, p < .001$; 37% vs 31.7%, $\chi^2(1) = 7.4, p < .01$), when compared

to non-White students. There were no differences in lifetime, annual, or monthly cyber bullying victimization. Similarly, no significant differences were observed in past month rates of bullying victimization.

Black vs non-Black. Table III.A. reveals that there were several race differences in lifetime bullying victimization, with Black students less likely to report verbal (53.1% vs 62.9%, $\chi^2(1) = 12.28$, $p < .001$), physical (52.6% vs 59.2%, $\chi^2(1) = 5.76$, $p < .05$), and social (45.8% vs 54.6%, $\chi^2(1) = 9.72$, $p < .01$) bullying victimization when compared to non-Black students. However, no differences were observed in annual and monthly bullying victimization, with the exception that Black students were more likely to report monthly cyberbullying victimization (15.6 vs 11.7%, $\chi^2(1) = 4.51$, $p < .05$) compared to non-Black students.

Hispanic Latino vs non-Hispanic Latino. Table IV.A. reveals that there were relatively few ethnic differences in bullying victimization when Hispanic-Latino students were compared to Non-Hispanic Latino students. The only significant differences found were that Hispanic Latino youth were less likely to report lifetime verbal (57% vs 63.1%, $\chi^2(1) = 6.37$, $p < .05$) and social (48.7% vs 55%, $\chi^2(1) = 6.58$, $p < .05$) bullying victimization.

In summary, the findings indicate higher rates of reported bullying victimization for White vs. Non-White students, and lower rates for Black vs. Non-Black students. Our hypothesis that minority status, as a form of relative disadvantage, would be a risk factor for bullying was not supported. However, a more precise analytic approach would be required to determine if Non-White students in predominantly White school settings were

at greater risk for bullying, a hypothesis consistent with the idea that relative disadvantage must be examined in a larger context, in this case, school setting. We examined this hypothesis in a series of regression analyses (reported below, after bullying perpetration rates).

Race/Ethnicity Differences in Bullying Perpetration

White vs non-White. Table II.B. reveals that there were some race differences in bullying perpetration such that White students were more likely to report engaging in verbal (33.1% vs 27.7%, $\chi^2(1) = 8.28, p < .05$) and social (29.6% vs 23%, $\chi^2(1) = 13.46, p < .001$) bullying perpetration when compared to Non-White students. However, for annual rates, White youth were less likely to report physical (1.6% vs 3.1%, $\chi^2(1) = 8.7, p < .01$) bullying perpetration. In the past month, White students were less likely to report physical (1.6% vs 3.1%, $\chi^2(1) = 8.70, p < .01$) and cyber (3.6% vs 5.3%, $\chi^2(1) = 4.17, p < .05$) bullying perpetration compared to Non-White youth. Finding highlights that White youth were more likely to report lifetime verbal and social bullying perpetration whereas Non-White youth were more likely to report annual and monthly physical and cyberbullying perpetration.

Black vs non-Black. Table III.B. reveals that there were some race differences in bullying perpetration such that Black students were more likely to report lifetime (21% vs 15.4%, $\chi^2(1) = 7.38, p < .01$), annual (11.9% vs 7%, $\chi^2(1) = 10.34, p < .01$), and monthly (7% vs 4.3%, $\chi^2(1) = 5.35, p < .05$) physical bullying perpetration, compared with non-Black students. In the past year, Black students were also more likely to report verbal (17.8% vs 13.1%, $\chi^2(1) = 5.8, p < .05$) and cyber (8.1% vs 5.3%, $\chi^2(1) = 4.64, p$

< .05) bullying perpetration, compared to non-Black youth. Additionally, in the past month, being Black was associated with a greater likelihood of reporting social (10.5% vs 6.9%, $\chi^2(1) = 5.9$, $p < .05$) and cyber (6.7% vs 4.1%, $\chi^2(1) = 5.05$, $p < .05$) bullying perpetration, relative to non-Black students.

Hispanic Latino vs non-Hispanic Latino. Table IV.B. reveals that Hispanic Latino were more likely to report lifetime (12.7% vs 8%, $\chi^2(1) = 10.87$, $p < .001$) and annual (7.6% vs 5.2%, $\chi^2(1) = 4.43$, $p < .05$) cyberbullying perpetration, relative to Non-Hispanic Latino students. There were no other significant results in analysis.

In summary, the analyses on race and bullying provided a mixed set of findings. Black students were more involved in physical bullying perpetration (lifetime, annual, and monthly), but less involved in victimization (physical, verbal, and social), compared with non-Black students. We further examined the effect of racial minority status within the context of the larger school racial makeup in subsequent regression analyses, reported below.

Multiple Logistic Regression: Predictors of Bullying Victimization

A series of multiple regression analyses were run to examine the impact of demographic variables and substance use on the various types of bullying victimization. Table V.A. shows findings looking at lifetime, annual, and monthly rates of bullying victimization, including physical, verbal, social, and cyberbullying. To further explore the previous findings on differences in prevalence rates of bullying victimization by race (found in the crosstab analyses with chi-squares), the multiple regression analyses also included two interaction terms, race by gender, and race by predominantly white school

setting. The race by gender interaction term was included to explore whether gender and race when examined together differentially predicted rates of bullying victimization. There were no significant gender by race interaction terms in any of the analyses. The race by predominantly white school setting interaction term was included to explore whether being nonwhite in a predominately white school setting raised risk for bullying victimization. Again, there were no significant interaction terms found in any of the analyses. However, findings showed that low family socioeconomic status, as measured by eligibility for free or reduced-price lunch, was associated with an increased risk for lifetime physical ($\beta = .205, p < .05$) and social ($\beta = .271, p < .01$) bullying victimization. Finally, substance use was associated with higher rates of bullying victimization. In particular, alcohol use was positively associated with all measures of bullying victimization (physical, verbal, social, and cyberbullying) for lifetime, annual, and monthly rates. Cigarette smoking, however, was a risk factor only for cyberbullying victimization, for lifetime, annual, and monthly rates.

Separate additional multiple regression analyses (Table VI.A.) examined the impact of several protective factors, including academic grades, bullying knowledge, bullying prevention skills, and conflict resolution skills on bullying victimization, controlling for several demographic factors (gender, race, and socioeconomic status). Students with high bullying knowledge had lower lifetime ($\beta = -.089, p < .05$), annual ($\beta = -.113, p < .05$), monthly ($\beta = -.169, p < .01$) cyberbullying victimization rates. Additionally, bullying knowledge was also related to less physical and social bullying victimization for lifetime and annual rates. In terms of skills, findings indicated that

students with good conflict resolution skills reported lower lifetime cyberbullying victimization ($\beta = -.165, p < .05$). However, an unexpected finding was that students with higher bullying prevention skills scores reported greater lifetime physical, verbal, social, and bullying victimization.

Multiple Logistic Regression: Predictors of Bullying Perpetration

A series of multiple regression analyses were run to examine the impact of demographic variables and substance use on the various types of bullying victimization. Table V.A. shows findings looking at lifetime, annual, and monthly rates of bullying victimization, including physical, verbal, social, and cyberbullying. To further explore the previous findings on differences in prevalence rates of bullying victimization by race (found in the crosstab analyses with chi-squares), the multiple regression analyses also included two interaction terms, race by gender, and race by predominantly white school setting. The race by gender interaction term was included to explore whether gender and race when examined together differentially predicted rates of bullying victimization. There were no significant gender by race interaction terms in any of the analyses. The race by predominantly white school setting interaction term was included to explore whether being nonwhite in a predominately white school setting raised risk for bullying victimization. Again, there were no significant interaction terms found in any of the analyses. However, findings showed that low family socioeconomic status, as measured by eligibility for free or reduced-price lunch, was associated with an increased risk for lifetime physical (OR = 1.23, 95% CI = 1.01, 1.49, $p < .05$) bullying victimization. Finally, substance use was associated with higher rates of bullying victimization. In

particular, alcohol use was positively associated with all measures of bullying victimization (physical, verbal, social, and cyberbullying) for lifetime, annual, and monthly rates. Cigarette smoking, however, was a risk factor only for cyberbullying victimization, for lifetime, annual, and monthly rates.

In term of bullying perpetrations (Table V.B.), there were no significant gender by race interaction term in any of the analyses. Similarly, no significant interaction terms of predominantly white school setting by race found in any of the analyses. However, low family socioeconomic status was associated with an increased risk for lifetime verbal (OR = 1.25, 95% CI = 1.02, 1.52, $p < .05$) bullying perpetration. For lifetime, annual, and monthly rates of bullying perpetration, alcohol use was found to be significantly correlated with all types of bullying perpetration (physical, verbal, social, and cyber bullying). Higher alcohol use was significantly associated with bullying perpetration. Cigarette smoking was linked to lifetime, annual, and monthly rates of physical and cyberbullying perpetration, as well as lifetime verbal bullying perpetration.

Separate additional multiple regression analyses (Table VI) examined the impact of several protective factors, including academic grades, bullying knowledge, bullying prevention skills, and conflict resolution skills on bullying perpetration. In terms of bullying victimization (Table VI. A.), good academic performance was associated with lifetime verbal (OR = 1.16, 95% CI = 1.04, 1.29, $p < .01$) victimization. Moreover, the results indicated lifetime, annual and monthly rate of cyberbullying victimization was reported more often by students with low academic grades. In addition, student with good bullying knowledge reported low lifetime, annual physical social, cyberbullying

victimization. Student with good bullying prevention skills reported higher all types of lifetime bullying victimization. Finally, Student with good conflict resolution skills reported lower lifetime cyber (OR = 0.85, 95% CI = 0.73, 0.99, $p < .05$) bullying victimization only.

With regards to bullying perpetration (Table VI. B.), controlling for several demographic factors (gender, race, and socioeconomic status), better grades in school were associated with lower lifetime, annual, month physical and cyberbullying perpetration as well as monthly rates of verbal and social bullying perpetration. Student with good bullying knowledge reported lower lifetime, annual, and monthly verbal, social, cyberbullying perpetration, also monthly rate of physical bullying perpetration (OR = 0.83, 95% CI = 0.69, 0.99, $p < .05$). Student with good bullying prevention skills reported significantly lower all types of bullying perpetration. Conflict resolution skills were not related to bullying perpetration.

DISCUSSION

The current study examined the pattern and predictors of traditional bullying and cyberbullying amongst middle school age youth, focusing on both bullying victimization and perpetration. Among U.S adolescents in grades 6 to 8, the findings indicate high levels of bullying victimization overall, with the majority of students reporting being victimized in their lifetimes by verbal (61.5%), physical (58.4%), and social (53.4%) bullying. Rates of lifetime cyberbullying victimization (28%) were noticeably lower, roughly half that of other forms of bullying victimization. Regarding lifetime bullying perpetration, most commonly reported was verbal (42.8%), followed by physical (37.6%), social (34.3%), and cyberbullying (17.9%) perpetration. Overall, findings indicated that bullying victimization and perpetration were widespread, with verbal bullying the most frequent type of bullying both in terms of victimization and perpetration, and cyberbullying the least frequently reported.

A hypothesis of this study was that boys would be more likely to engage in traditional bullying and physical bullying compared to girls, and that girls would be more likely to be involved in relational forms of bullying relative to boys, both in terms of victimization and perpetration. Our findings provided support for these hypotheses. Boys were more likely to engage in physical bullying perpetration in their lifetimes and in the past year, while girls were more likely to report being victimized by relational (verbal and social) bullying in their lifetimes and in the past year. Thus, gender differences found in the present study suggest that bullying perpetration of multiple types is more common

among boys than girls, and victimization is more common among girls than boys for relational bullying victimization. These findings are consistent with much of the existing literature showing that males report more physical bullying than females (Beckman, Hagquist & Hellström, 2013). Some but not all studies have found that girls are more likely to engage in cyberbullying perpetration, but our findings indicated that boys were more likely to report cyberbullying perpetration relative to girls.

We also expected that other demographic factors would be associated with an increased risk for traditional bullying and cyberbullying, particularly those factors that place students at relative disadvantage, such as racial minority status and low social economic status. Overall, we found that racial/ethnic minority status was not a clear and consistent risk or protective factor for bullying in our study. While Black students were more likely to report past month cyberbullying victimization more than non-Black students, other findings indicated that white students were more likely to report lifetime and annual victimization for all other types of bullying. One explanation for this finding may be that racial and ethnic minority youth may be more likely to be victimized when they are in predominantly White school settings. To examine this, we included an interaction terms reflecting being Non-White in a predominantly White to see if this was associated with bullying victimization, but we did not find support for this hypothesis. Future research should identify the specific contexts in which minority status is associated with bullying victimization.

To further explore the role of relative disadvantage in bullying we examined whether students from low SES families were at greater risk for bullying victimization

and perpetration. Findings indicated that students from low socioeconomic status families were more likely to report physical and social bullying victimization. This finding is consistent with research by Peskin et al (2006) showing that low socioeconomic status is a risk factor associated with bullying involvement. An additional hypothesis included that bullying and cyberbullying would be associated with other risk behaviors including alcohol and drug use. We found that substance use is positively associated with adolescents bullying (both in victimization and perpetration). Specifically, using alcohol has strong relationship with all types of bullying of perpetration and victimization. This finding reflects the common empirical observation that risk behaviors cluster together within individuals during early adolescence (Durant et al., 1999).

In addition to examining risk factors for bullying, this study also examined protective factors such as good grades in school, bullying knowledge, bullying prevention skills, and conflict resolution skills and hypothesized that these would be associated with reduced rates of different types of bullying victimization and perpetration. With regards to academic performance, we found that lifetime physical and verbal bullying victimization was reported more often by students with good academic grades. Students with lower grades were more likely to report higher lifetime, annual and monthly rate of cyberbullying victimization. Contrarily, better grades in school was a risk factor for lifetime physical and verbal bullying victimization. These findings were complicated in some point, but we found that both poor or good school performance can be a risk factor for bullying victimization.

Findings indicated that knowing how to respond to bullying and acting in appropriate ways to bullying, or bullying prevention skills, were associated with bullying. While students with good bullying prevention skills reported significantly lower bullying perpetration, as expected, an unexpected finding was that these skills were associated with greater lifetime physical, verbal, social, and bullying victimization. The latter finding can likely be explained by the cross-sectional nature of the data. Those who are victimized must learn how to act appropriately in the face of bullying, so developing these skills may occur in response to bullying. On the other hand, knowing these skills is protective for bullying perpetration; students who know how to respond to bullying do not engage in bullying themselves. We also found that conflict resolution skills were not clearly associated with bullying with the exception of cyberbullying victimization, where they were protective. For some students, it may be possible to avoid online conflict more than in person conflict or bullying. Moreover, effects of online bullying can be seen by one's entire peer network, and can be widely available for reviewing and therefore, they may have more pervasive effects. One possible explanation may be that our measurement strategy for conflict resolution was not as comprehensive as other studies since we included only a relatively small number of items assessing conflict resolution skills.

Strengths and Limitations

There were several strengths and limitations of the present study. Strengths of this study included the large sample size collected from students in middle schools across the country. To investigate and extend the previous findings of bullying patterns, this study assessed four types of bullying (physical, verbal, social, and cyber) and focused on both

victimization and perpetration. There were several limitations to this study. First, the cross-sectional nature of the survey limits the ability to examine cause and effect, or to fully understand the relationship between predictors and outcomes. Longitudinal data are needed to detect further developments and changes in bullying patterns. Another limitation is that all data were student self-report. Multiple sources are recommended for assessing information.

Findings from this study suggest that future research should examine samples containing students from diverse communities and countries, look more closely at all races/ethnicities of bullying and cyberbullying, and assess in greater detail the contexts in which bullying occur, to more fully understand how factors that place students at relative disadvantage, such as racial minority status and low social economic status, interact with the environments in which students are bullied. Furthermore, longitudinal data are necessary to further look at change over time and more thoroughly examine how risk and protective factors work together to explain bullying victimization and perpetration.

Table I.A. Prevalence Rates of Bullying Victimization by Gender

	All Students (%)	Male (%)	Female (%)	Chi-Square
BULLYING VICTIMIZATION (Lifetime)				
Physical	58.4	59.2	57.8	0.46
Verbal	61.5	56.7	65.6	20.31****
Social	53.4	49.0	57.1	16.14****
Cyber	28.0	26.0	29.8	4.46*
BULLYING VICTIMIZATION (Annual)				
Physical	37.6	40.7	35.0	8.42**
Verbal	42.8	40.0	45.1	6.32*
Social	34.3	32.1	36.2	4.48*
Cyber	17.9	17.0	18.6	1.05
BULLYING VICTIMIZATION (Month)				
Physical	21.7	25.3	18.7	15.66****
Verbal	27.5	27.4	27.6	0.01
Social	23.2	22.4	24.0	0.83
Cyber	12.3	13.4	11.4	2.38
Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table I.B. Prevalence Rates of Bullying Perpetration by Gender

	All Students (%)	Male (%)	Female (%)	Chi-Square
BULLYING VICTIMIZATION (Lifetime)				
Physical	16.2	20.6	12.5	28.98***
Verbal	30.4	28.7	31.7	2.26
Social	26.2	25.7	26.6	0.27
Cyber	9.0	10.1	8.1	3.03
BULLYING VICTIMIZATION (Annual)				
Physical	7.7	9.7	6.0	11.26***
Verbal	13.8	15.3	12.5	3.97
Social	12.2	13.9	10.8	5.49*
Cyber	5.6	6.4	5.0	1.98
BULLYING VICTIMIZATION (Month)				
Physical	4.6	5.6	3.8	4.13
Verbal	8.1	9.0	7.2	2.62
Social	7.4	8.8	6.3	5.57*
Cyber	4.4	4.9	4.0	1.10
Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table II.A. Prevalence Rates of Bullying Victimization by Race (White Vs Non-White)

	All Students (%)	White (%)	Non-White (%)	Chi-Square
BULLYING VICTIMIZATION (Lifetime)				
Physical	58.2	62.8	54.1	18.91***
Verbal	61.4	66.8	56.5	27.27***
Social	53.3	57.9	49.1	18.62***
Cyber	28.0	28.6	27.4	0.44
BULLYING VICTIMIZATION (Annual)				
Physical	37.5	41.4	34.0	14.01***
Verbal	42.7	46.9	38.8	16.54***
Social	34.2	37.0	31.7	7.40**
Cyber	17.8	18.1	17.6	0.14
BULLYING VICTIMIZATION (Month)				
Physical	21.7	23.3	20.2	3.40
Verbal	27.5	29.1	26.0	2.99
Social	23.2	24.6	21.9	2.54
Cyber	12.3	12.6	12.0	0.24
Note: * p≤.05, **p≤.01, ***p≤.001				

Table II.B. Prevalence Rates of Bullying Perpetration by Race (White Vs Non-White)

	All Students (%)	White (%)	Non-White (%)	Chi-Square
BULLYING PERPETRATION (Lifetime)				
Physical	16.2	15.0	17.3	2.31
Verbal	30.3	33.1	27.7	8.28**
Social	26.2	29.6	23.0	13.46***
Cyber	9.1	3.9	5.2	2.15
BULLYING PERPETRATION (Annual)				
Physical	7.7	6.6	8.8	3.96*
Verbal	13.8	13.9	13.7	0.02
Social	12.2	12.8	11.7	0.73
Cyber	5.7	2.3	3.4	3.89
BULLYING PERPETRATION (Month)				
Physical	4.7	1.6	3.1	8.70**
Verbal	8.1	8.0	8.2	0.04
Social	7.5	3.4	4.1	0.34
Cyber	4.5	3.6	5.3	4.17*
Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table III.A. Prevalence Rates of Bullying Victimization by Race (Black Vs Non-Black)

	All Students (%)	Black (%)	Non-Black (%)	Chi-Square
BULLYING VICTIMIZATION (Lifetime)				
Physical	58.2	52.6	59.2	5.76*
Verbal	61.4	53.1	62.9	12.78***
Social	53.3	45.8	54.6	9.72**
Cyber	28.0	29.4	27.8	0.41
BULLYING VICTIMIZATION (Annual)				
Physical	37.5	34.2	38.1	2.01
Verbal	42.7	38.0	43.5	3.91
Social	34.2	32.9	34.5	0.36
Cyber	17.8	20.2	17.4	1.70
BULLYING VICTIMIZATION (Month)				
Physical	21.7	23.7	21.3	1.06
Verbal	27.5	26.7	27.7	0.12
Social	23.2	21.8	23.4	0.44
Cyber	12.3	15.6	11.7	4.51*
Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table III.B. Prevalence Rates of Bullying Perpetration by Race (Black Vs Non-Black)

	All Students (%)	Black (%)	Non-Black (%)	Chi-Square
BULLYING PERPETRATION (Lifetime)				
Physical	16.2	21.0	15.4	7.38**
Verbal	30.3	33.2	29.8	1.69
Social	26.2	29.1	25.6	1.97
Cyber	9.1	11.6	8.6	3.40
BULLYING PERPETRATION (Annual)				
Physical	7.7	11.9	7.0	10.34**
Verbal	13.8	17.8	13.1	5.80*
Social	12.2	14.8	11.8	2.78
Cyber	5.7	8.1	5.3	4.64*
BULLYING PERPETRATION (Month)				
Physical	4.7	7.0	4.3	5.35*
Verbal	8.1	9.4	7.9	1.02
Social	7.5	10.5	6.9	5.90*
Cyber	4.5	6.7	4.1	5.05*
Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table IV.A. Prevalence Rates of Bullying Victimization by Race (Hispanic Latino vs Non-Hispanic Latino)

	All Students (%)	Hispanic Latino (%)	Non-Hispanic Latino (%)	Chi-Square
BULLYING VICTIMIZATION (Lifetime)				
Physical	58.2	54.7	59.5	3.85
Verbal	61.4	57.0	63.1	6.37*
Social	53.3	48.7	55.0	6.58*
Cyber	28.0	29.5	27.7	0.71
BULLYING VICTIMIZATION (Annual)				
Physical	37.5	34.1	38.5	3.41
Verbal	42.7	39.4	43.6	3.00
Social	34.2	31.4	35.1	2.39
Cyber	17.8	20.5	17.2	2.90
BULLYING VICTIMIZATION (Month)				
Physical	21.7	19.1	22.1	2.20
Verbal	27.5	25.4	28.2	1.60
Social	23.2	23.3	23.5	0.29
Cyber	12.3	13.3	12.1	0.54
Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table IV.B. Prevalence Rates of Bullying Perpetration by Race (Hispanic Latino vs Non-Hispanic Latino)

	All Students (%)	Hispanic Latino (%)	Non-Hispanic Latino (%)	Chi-Square
BULLYING PERPETRATION (Lifetime)				
Physical	16.2	18.2	15.8	1.66
Verbal	30.3	30.3	30.7	0.04
Social	26.2	25.2	26.5	0.36
Cyber	9.1	12.7	8.0	10.87***
BULLYING PERPETRATION (Annual)				
Physical	7.7	8.5	7.5	0.62
Verbal	13.8	15.2	13.7	0.74
Social	12.2	11.6	12.4	0.30
Cyber	5.7	7.6	5.2	4.43*
BULLYING PERPETRATION (Month)				
Physical	4.7	5.5	4.4	1.19
Verbal	8.1	8.9	8.0	0.42
Social	7.5	8.1	7.3	0.46
Cyber	4.5	5.9	4.1	2.83
Note: * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$				

Table V.A. Logistic Regression: Predictors of Bullying Victimization (Odds Ratios and 95% Confidence Intervals)

	Gender (Male)	Race (White)	Predom White School	Gender * Race	Predom White School * Race	Social- Economic Status (Free Lunch)	Grades	Smoking (Lifetime)	Alcohol Use (Lifetime)
BULLYING VICTIMIZATION (Lifetime)									
Physical	0.72 (.55, .95)*	0.72 (.50, 1.04)	0.95 (.71, 1.27)	1.13 (.77, 1.66)	1.18 (.79, 1.78)	1.23 (1.01, 1.49)*	1.12 (1.01, 1.23)*	0.94 (.76, 1.17)	1.36 (1.14, 1.64)***
Verbal	1.43 (1.07, 1.91)*	0.68 (.47, .98)*	0.78 (.57, 1.07)	0.95 (.64, 1.40)	1.10 (.72, 1.68)	1.22 (1.00, 1.50)	1.18 (1.01, 1.31)***	0.94 (.75, 1.18)	1.37 (1.13, 1.66)***
Social	1.25 (.96, 1.62)	0.77 (.55, 1.08)	0.99 (.75, 1.31)	1.07 (.75, 1.55)	1.04 (.71, 1.55)	1.31 (1.09, 1.58)**	1.07 (.97, 1.18)	1.01 (.82, 1.24)	1.33 (1.12, 1.57)***
Cyber	1.19 (.91, 1.57)	0.92 (.64, 1.31)	0.93 (.70, 1.24)	1.01 (.73, 1.56)	0.96 (.64, 1.45)	0.95 (.78, 1.16)	0.87 (.79, .97)**	1.32 (1.04, 1.66)*	1.52 (1.31, 1.77)***
BULLYING VICTIMIZATION (Annual)									
Physical	0.68 (.53, .87)**	0.75 (.54, 1.05)	1.00 (.77, 1.30)	1.05 (.74, 1.51)	1.15 (.78, 1.68)	1.11 (.92, 1.34)	1.01 (.91, 1.11)	1.07 (.86, 1.32)	1.54 (1.31, 1.81)***
Verbal	1.16 (.91, 1.49)	0.78 (.56, 1.08)	0.99 (.76, 1.29)	0.99 (.70, 1.41)	0.98 (.67, 1.43)	1.00 (.83, 1.20)	1.03 (.94, 1.13)	0.98 (.81, 1.19)	1.40 (1.20, 1.63)***
Social	1.19 (.92, 1.53)	1.02 (.73, 1.44)	1.22 (.93, 1.59)	0.94 (.66, 1.35)	0.74 (.50, 1.09)	1.04 (.86, 1.25)	0.94 (.85, 1.03)	1.14 (.94, 1.39)	1.32 (1.15, 1.52)***
Cyber	1.36 (.99, 1.88)	1.35 (.88, 2.06)	1.21 (.86, 1.70)	0.75 (.48, 1.17)	0.66 (.41, 1.09)	1.03 (.82, 1.30)	0.79 (.71, .89)***	1.35 (1.09, 1.68)**	1.55 (1.34, 1.79)***
BULLYING VICTIMIZATION (Month)									
Physical	0.71 (.53, .94)*	1.03 (.71, 1.49)	1.11 (.82, 1.51)	0.79 (.52, 1.19)	0.99 (.63, 1.53)	0.94 (.76, 1.16)	0.93 (0.84, 1.04)	1.17 (.96, 1.42)	1.44 (1.25, 1.66)***
Verbal	1.06 (.82, 1.39)	1.00 (.70, 1.42)	1.07 (.81, 1.42)	0.82 (.56, 1.19)	1.04 (.69, 1.55)	0.86 (.71, 1.05)	0.98 (.89, 1.08)	1.07 (0.89, 1.29)	1.39 (1.21, 1.60)***
Social	1.20 (.91, 1.60)	1.12 (.77, 1.64)	1.21 (.90, 1.64)	0.80 (.54, 1.20)	0.83 (.54, 1.28)	0.90 (.73, 1.11)	0.89 (.81, .99)*	1.21 (.99, 1.47)	1.41 (1.23, 1.62)***
Cyber	1.01 (.70, 1.46)	1.04 (.64, 1.68)	1.12 (.75, 1.66)	0.76 (.45, 1.29)	1.06 (.60, 1.86)	0.83 (.64, 1.09)	0.81 (.71, .92)***	1.41 (1.13, 1.75)**	1.64 (1.41, 1.91)***
Note: * p≤.05, **p≤.01, ***p≤.001									

Table V.B. Logistic Regression: Predictors of Bullying Perpetration (Odds Ratios and 95% Confidence Intervals)

	Gender (Male)	Race (White)	Predom White School	Gender * Race	Predom White School * Race	Social- Economic Status (Free Lunch)	Grades	Smoking (Lifetime)	Alcohol Use (Lifetime)
BULLYING PERPETRATION (Lifetime)									
Physical	0.45 (.32, .64)***	1.34 (.91, 2.12)	1.39 (.95, 2.03)	1.33 (.83, 2.14)	0.63 (.37, 1.06)	1.02 (.84, 1.30)	0.77 (.69, .87)***	1.27 (1.01, 1.58)*	1.72 (1.47, 2.01)***
Verbal	1.06 (.82, 1.38)	0.92 (.65, 1.31)	1.12 (.85, 1.47)	1.06 (.73, 1.54)	0.78 (.52, 1.17)	1.25 (1.02, 1.52)*	1.04 (.94, 1.15)	1.14 (.92, 1.40)	1.54 (1.32, 1.80)***
Social	0.93 (.71, 1.21)	0.70 (.49, 1.00)	0.98 (.74, 1.29)	1.19 (.80, 1.75)	0.87 (.57, 1.32)	0.99 (.81, 1.21)	1.03 (.93, 1.14)	1.19 (.97, 1.46)	1.49 (1.29, 1.46)***
Cyber	0.91 (.58, 1.44)	1.39 (.79, 2.44)	1.08 (.67, 1.76)	0.91 (.49, 1.68)	0.62 (.31, 1.25)	0.99 (.72, 1.36)	0.70 (.60, .80)***	1.51 (1.20, 1.89)***	1.73 (1.48, 2.02)***
BULLYING PERPETRATION(Annual)									
Physical	0.45 (.28, .78)**	1.33 (.73, 2.44)	1.36 (.78, 2.37)	1.68 (.85, 3.31)	0.62 (.29, 1.30)	0.84 (.60, 1.17)	0.71 (.61, .82)***	1.35 (1.09, 1.67)**	1.74 (1.49, 2.04)***
Verbal	0.70 (.49, .99)*	1.07 (.68, 1.69)	1.21 (.83, 1.77)	1.22 (.75, 2.01)	0.71 (.41, 1.23)	1.16 (.90, 1.51)	0.90 (.79, 1.02)	1.11 (.89, 1.37)	1.85 (1.58, 2.16)***
Social	0.54 (.37, .78)***	0.67 (.42, 1.07)	1.03 (.70, 1.51)	1.98 (1.17, 3.37)*	0.81 (.45, 1.44)	1.00 (.76, 1.31)	0.91 (.79, 1.04)	1.17 (.95, 1.45)	1.84 (1.57, 2.15)***
Cyber	1.01 (.55, 1.86)	1.38 (.67, 2.81)	0.86 (.46, 1.60)	0.89 (.40, 1.98)	0.73 (.30, 1.79)	0.94 (.63, 1.40)	0.69 (.58, .82)***	1.39 (1.11, 1.74)**	1.92 (1.63, 2.26)***
BULLYING PERPETRATION (Month)									
Physical	0.65 (.33, 1.31)	1.53 (.72, 3.22)	0.90 (.45, 1.83)	1.21 (.51, 2.87)	1.01 (.40, 2.52)	0.92 (.61, 1.39)	0.71 (.59, .85)***	1.31 (1.06, 1.62)*	1.52 (1.27, 1.81)***
Verbal	0.76 (.48, 1.19)	1.14 (.63, 2.05)	1.39 (.85, 2.30)	1.20 (.64, 2.25)	0.72 (.36, 1.44)	1.16 (.83, 1.60)	0.78 (.67, .91)***	1.11 (.90, 1.36)	1.79 (1.53, 2.09)***
Social	0.49 (.30, .80)**	0.76 (.42, 1.38)	1.03 (.62, 1.70)	2.13 (1.08, 4.19)*	0.74 (.35, 1.55)	0.94 (.67, 1.32)	0.77 (.66, .90)***	1.24 (1.00, 1.53)	1.85 (1.57, 2.17)***
Cyber	1.25 (.62, 2.53)	1.94 (.83, 4.53)	1.13 (.54, 2.36)	0.74 (.30, 1.81)	0.56 (.20, 1.56)	0.98 (.63, 1.54)	0.70 (.58, .85)***	1.40 (1.12, 1.74)**	1.83 (1.54, 2.16)***
Note: * p≤.05, **p≤.01, ***p≤.001									

Table VI.A. Logistic Regression: Protective Factors as Predictors of Bullying Victimization (Odds Ratios and 95% Confidence Intervals)

	Gender (Male)	Race (White)	Social- Economic Status (Free Lunch)	Grades	Bullying Knowledge	Bullying Prevention Skills	Conflict Resolution Skills
BULLYING VICTIMIZATION (Lifetime)							
Physical	0.77 (.63, .95)*	0.79 (.65, .97)*	1.23 (1.002, 1.51)*	1.10 (.99, 1.22)	0.87 (.79, .95)**	1.22 (1.08, 1.38)**	1.05 (.90, 1.23)
Verbal	1.41 (1.14, 1.74)***	0.71 (.57, .87)***	1.24 (1.004, 1.54)*	1.16 (1.04, 1.29)**	0.97 (.89, 1.07)	1.21 (1.07, 1.38)**	1.05 (.89, 1.24)
Social	1.26 (1.03, 1.52)*	0.77 (.63, .93)**	1.32 (1.08, 1.61)**	1.06 (.95, 1.17)	0.88 (.81, .96)**	1.28 (1.13, 1.44)***	1.04 (.89, 1.21)
Cyber	1.23 (1.01, 1.50)*	0.92 (.75, 1.12)	0.95 (.78, 1.17)	0.86 (.79, .96)**	0.91 (.84, 1.00)*	1.16 (1.02, 1.31)*	0.85 (.73, .99)*
BULLYING VICTIMIZATION (ANNUAL)							
Physical	0.69 (.57, .83)***	0.76 (.63, .91)**	1.10 (.90, 1.33)	1.01 (.91, 1.11)	0.91 (.83, .99)*	1.04 (.93, 1.17)	0.97 (.84, 1.13)
Verbal	1.15 (.96, 1.39)	0.75 (.63, .91)**	0.96 (.80, 1.17)	1.04 (.94, 1.15)	0.94 (.86, 1.02)	1.07 (.96, 1.21)	0.98 (.85, 1.14)
Social	1.16 (.96, 1.40)	0.81 (.67, .98)*	1.02 (.84, 1.23)	0.94 (.85, 1.05)	0.92 (.84, .998)*	1.16 (1.03, 1.31)*	1.00 (.86, 1.16)
Cyber	1.17 (.93, 1.47)	0.83 (.66, 1.05)	1.08 (.85, 1.37)	0.80 (.71, .90)***	0.89 (.81, .99)*	1.10 (.95, 1.27)	0.84 (.70, 1.00)
BULLYING VICTIMIZATION (MONTH)							
Physical	0.64 (.52, .79)***	0.79 (.64, .98)*	0.88 (.71, 1.10)	0.97 (.87, 1.09)	0.95 (.87, 1.05)	0.97 (.84, 1.11)	1.00 (.84, 1.18)
Verbal	0.92 (.75, 1.12)	0.83 (.68, 1.01)	0.83 (.68, 1.01)	0.98 (.88, 1.09)	0.92 (.84, 1.00)	1.16 (1.02, 1.31)*	1.00 (.86, 1.17)
Social	1.04 (.84, 1.28)	0.81 (.66, 1.00)	0.89 (.72, 1.10)	0.90 (.80, .999)*	0.93 (.85, 1.03)	1.17 (1.03, 1.34)*	1.00 (.85, 1.17)
Cyber	0.85 (.65, 1.12)	0.74 (.57, .98)*	0.88 (.66, 1.15)	0.83 (.72, .95)**	0.85 (.75, .95)**	1.09 (.92, 1.29)	0.82 (.66, 1.01)
Note: * p≤.05, **p≤.01, ***p≤.001							

Table VI.B. Logistic Regression: Protective Factors as Predictors of Bullying Perpetration (Odds Ratios and 95% Confidence Intervals)

	Gender (Male)	Race (White)	Social- Economic Status (Free Lunch)	Grades	Bullying Knowledge	Bullying Prevention Skills	Conflict Resolution Skills
BULLYING PERPETRATION (Lifetime)							
Physical	0.52 (.41, .66)***	1.20 (.94, 1.53)	1.02 (.79, 1.30)	0.80 (.71, .90)***	0.93 (.84, 1.04)	0.69 (.59, .79)***	0.99 (.82, 1.20)
Verbal	1.14 (.94, 1.38)	0.82 (.67, .99)*	1.25 (1.03, 1.53)*	1.01 (.95, 1.17)	0.88 (.81, .96)**	0.79 (.70, .89)***	1.05 (.91, 1.23)
Social	1.02 (.83, 1.24)	0.73 (.60, .90)**	1.00 (.81, 1.23)	1.02 (.91, 1.13)	0.91 (.84, 1.000)*	0.79 (.69, .89)***	1.05 (.90, 1.23)
Cyber	0.85 (.62, 1.16)	1.14 (.83, 1.56)	1.04 (.76, 1.43)	0.70 (.61, .81)***	0.83 (.73, .95)**	0.74 (.62, .89)**	0.80 (.62, 1.02)
BULLYING PERPETRATION (ANNUAL)							
Physical	0.60 (.43, .85)**	1.22 (.87, 1.73)	0.79 (.56, 1.12)	0.76 (.65, .89)***	0.89 (.77, 1.02)	0.66 (.54, .80)***	1.04 (.79, 1.37)
Verbal	0.84 (.65, 1.08)	0.96 (.75, 1.24)	1.16 (.89, 1.51)	0.93 (.82, 1.07)	0.85 (.76, .95)**	0.71 (.61, .83)***	0.98 (.80, 1.20)
Social	0.77 (.59, 1.00)	0.86 (.68, 1.16)	0.98 (.74, 1.29)	0.92 (.80, 1.05)	0.82 (.73, .93)***	0.72 (.61, .85)***	0.96 (.78, 1.19)
Cyber	0.92 (.62, 1.36)	1.18 (.70, 1.75)	0.99 (.66, 1.47)	0.71 (.59, .84)***	0.70 (.59, .82)***	0.71 (.56, .89)**	0.95 (.70, 1.31)
BULLYING PERPETRATION (MONTH)							
Physical	0.73 (.47, 1.12)	1.51 (.97, 2.36)	0.88 (.57, 1.35)	0.79 (.65, .96)*	0.83 (.69, .99)*	0.69 (.54, .89)**	0.75 (.53, 1.06)
Verbal	0.84 (.61, 1.16)	0.90 (.65, 1.25)	1.14 (.82, 1.60)	0.83 (.71, .97)*	0.82 (.71, .94)**	0.66 (.54, .80)***	1.13 (.87, 1.45)
Social	0.74 (.53, 1.04)	0.94 (.67, 1.31)	0.90 (.64, 1.27)	0.78 (.66, .91)**	0.77 (.67, .89)***	0.75 (.61, .91)**	1.16 (.89, 1.52)
Cyber	0.99 (.63, 1.54)	1.21 (.77, 1.92)	1.01 (.64, 1.60)	0.73 (.59, .87)**	0.64 (.53, .77)***	0.73 (.56, .94)*	1.06 (.74, 1.52)
Note: * p≤.05, **p≤.01, ***p≤.001							

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