Three Social Contexts of Bullying in Adolescence: Bystanders, Teachers, and Dating Partners

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Pooja Datta, M.Ed.

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Dissertation Abstract

There is persistent, nationwide concern about bullying in schools. Current conceptualizations of bullying primarily reflect research and interventions with children, and anti-bullying efforts that are effective with children appear to be much less effective with adolescents, so there is a need to investigate bullying experiences in adolescence. Each of the three papers in this dissertation investigates bullying in a different social context: (1) peer bystander reactions to bullying, (2) bullying by teachers, and (3) bullying within dating relationships. All three studies drew upon data from the statewide administration of school climate surveys in Virginia secondary schools.

The first paper linked student attitudes toward peer aggression with bystander reactions to bullying. Newer bully prevention programs focus on encouraging students to be upstanders by teaching students that bullying is a group problem and to practice positive interventions by standing up to bullies. Consequently, it is important to understand beliefs and attitudes towards aggression that are associated with bystander behaviors that may encourage or discourage bullying. This study hypothesized that students who endorsed attitudes that aggression leads to more popularity and is acceptable would be more likely to reinforce bullying and less likely to stand up to stop it. In a sample of 28,765 middle school students we asked about their responses to recent bullying and classified three group of bystanders: upstanders (48%), reinforcers (7%), and passive bystanders (45%). Multi-level logistic regressions indicated that even though the prevalence of reinforcing behavior was generally low, students with higher levels of

aggressive attitudes were more likely to encourage bullying. Conversely, higher aggressive attitudes made students less likely to be upstanders. A school-level analysis found that schools where aggressive attitudes are more widely shared had lower numbers of upstanders. These findings suggest that school-based interventions that target student beliefs and norms about aggression may be critical to the effectiveness of anti-bullying programs.

The second study compared the prevalence and school adjustment of students bullied by teachers versus peers. Assessing teacher-student interactions is especially important in adolescence because it is a period when students begin to have relationships with a greater number of teachers and relate to them in a more independent and assertive manner. Notably, negative teacher-student interactions in secondary school contribute to poorer school adjustment. In contrast to bullying by peers, bullying by teachers has received little attention and is rarely included in the measurement of bullying. In a sample of 56,508 middle school students, a smaller proportion of students reported bullying by teachers (4%) versus bullying by peers (11%). In comparison to students who reported no bullying, students bullied by teachers were significantly more likely to report lower school engagement and course grades, and more negative perceptions of school climate. Students bullied only by peers reported more distress symptoms than those bullied by teachers. The effect sizes associated with bullying by teachers are substantial and concerning. Our findings call for more attention and research on the problem of teacher bullying.

The third paper investigated teen dating aggression (TDA), which is a form of bullying that emerges in adolescence. TDA is characterized by a pattern of controlling

behavior intended to maintain the bully's power in a relationship. This study constructed a six-item TDA scale, measured the prevalence of TDA in a statewide sample, and examined the association between TDA and high-risk behaviors and academic adjustment. In a sample of 32,428 high school students, nearly 40% of students reported experiencing some type of teen dating aggression. Hierarchical regression models indicated that TDA was significantly linked to higher risk behaviors of alcohol/drug use, fighting, and suicidality. TDA was also significantly linked to lower engagement, grades, and educational aspirations. These findings add new evidence that TDA is a prevalent adolescent problem associated with poorer overall adjustment.

An important goal of this three-paper dissertation was to evaluate bullying in three distinct contexts that become increasingly more important and influential to students as they progress through secondary school. Although these studies were correlational and cannot establish a causal effect, the results suggest that anti-bullying programs for adolescents would benefit from lowering aggressive attitudes in students to boost upstander intervention, raising awareness of bullying by teachers, and helping students recognize various forms of TDA. Together, these findings indicate that bullying in adolescence has some distinctive features.

Curry Programs in Clinical and School Psychology
Curry School of Education
University of Virginia
Charlottesville, Virginia

APPROVAL OF THE DISSERTATION DEFENSE

This dissertation ("Three Social Contexts of Bullying in Adolescence: Bystanders, Teachers, and Dating Partners") has been approved by the Graduate Faculty of the Curry School Education in partial fulfillment of the requirements for the Degree of Philosophy.

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Name of Chair (Dr. Dewey Cornell)

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Name of Committee Member (Dr. Timothy Konold)

_____
Name of Committee Member (Dr. Antoinette Thomas)

_____
Name of Committee Member (Dr. Julia Blodgett)

_____
Date

Dedication

To my parents, my brother, my grandmothers, my greater family, my mentors, and my clan of friends. All that I do, I do for all of you.

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Project Overview

The purpose of this dissertation was to broaden the understanding of adolescent bullying from a social developmental perspective. Adolescence is a time when students learn to socialize with peers and authority figures in more complex ways (Bellmore et al., 2016; Bjorklund and Pellegrini, 2002). Each of the three papers in this dissertation investigates a different social context: bystander reactions to bullying, bullying by teachers, and bullying within dating relationships. These contexts represent more complex interactions that an adolescent is likely to experience as they progress through secondary school.

Bystanders. Bullying is often regarded as a group process (Salmivalli et al., 1996) in which peers may play a substantial role (Olweus, 1999). Student bystander behavior has become a focal point for anti-bullying programs and prevention efforts. A bystander is defined as someone who witnesses a bullying event but lacks participation in the event as either the bully or the victim (Twemlow, Fonagy, & Sacco, 2004). The presence of bystanders and their potential for intervention is not surprising (Nishina & Juvonen, 2005).

Bystanders are considered a pivotal part of deterring or interrupting bullying behavior. When bystander interventions do occur, they are often the most successful interventions possible (Hawkins, Pepler, & Craig, 2001). Although bystander interventions can be very effective, youth seldom stand up to bullies (Nishina & Juvonen, 2005). When observing children playing, Craig and Pepler (1997) found that 85% of

bullying episodes involved other peers and within these episodes, only 11% of the peers intervened on behalf of the victim.

Teachers and school staff. As adolescents move from elementary to secondary school, they learn to establish new social bonds with not only peers, but also non-parental adults (Anderman, 2003; Leon & Liew, 2017). Assessing teacher-student interactions is especially important in adolescence because it is a period when students begin to have relationships with a greater number of teachers and relate to them in a more independent and assertive manner. Studies show that secondary school students who experience negative teacher-student relationships are more likely to have difficult academic and social-emotional adjustment (Hamre and Pianta 2001; Leon & Liew, 2017; Roorda et al. 2011).

Several authorities have asserted that bullying by teachers presents a serious problem that is readily recognized by students (McEvoy, 2005; Whitted & Dupper, 2008). Bullying in school is generally defined as repeated, intentional acts of aggression directed towards a student who has less status or power (Olweus, 2003); bullying by teachers should have the same defining features as bullying by students, however, with a significant qualification. Teachers have legitimate power over students and they can be expected to criticize and discipline students in appropriate situations. The most important qualification is that bullying by a teacher must clearly go beyond the reasonable exercise of their authority to instruct their students and to maintain discipline.

Dating partners. Adolescence is a period of development marked by the shift from family-focused to peer-focused relationships. An important aspect of adolescent peer relations is the onset of romantic relationships and the accompanying activity of

dating. Definitions of dating vary from "seriously dating, to "casual," to "hooking up," or "going out" (Lenhart, Smith, & Anderson, 2015; Orpinas et al., 2013). Regardless of the definition of dating used, close to 35% of adolescents report having a romantic partner as early as the eighth grade (Lenhart et al., 2015). As expected, high school age students report twice as much dating in comparison to middle school age students and these relationships are more likely to be serious and/or sexually active (Lenhart et al., 2015; Orpinas et al., 2013).

Dating is an important developmental marker in adolescence that is linked to both positive and negative outcomes (Furman, 2002; Orpinas et al., 2013). On one hand, adolescents who date may benefit from higher self-esteem and psychosocial well-being (Exner-Cortens, 2014; Salerno et al., 2014). On the other hand, dating, especially the early onset of dating, has been linked to higher risk behaviors and poorer academic adjustment (Orpinas et al., 2013). Even though most relationships are healthy and promote positive development, there is evidence that adolescents sometimes encounter aggressive behaviors from a dating partner (CDC, 2016). These aggressive behaviors within a dating relationship may take the form of violent acts and/or threatening and coercive actions (CDC, 2016). Essentially, it is important to consider these negative behaviors within a dating relationship as instances of bullying in a distinctive context. Often these behaviors represent a pattern of controlling behavior intended to maintain the partner's power in a relationship.

Current Research

This three-paper dissertation explores three different social contexts in adolescence that involves bullying. The first paper focused on the importance of beliefs

and attitudes towards aggression that are associated with bystander behaviors that may encourage or discourage bullying. The second paper investigated prevalence of teacher bullying and compared it to peer bullying. In the third paper, we investigated the prevalence of teen dating aggression and its relation to risk behaviors and academic adjustment.

Paper one. Early adolescents are highly susceptible to peer influences and perceptions of normative group behavior (Saarento, Boulton, & Salmivalli, 2015). Bullying is generally regarded as a group process that is sustained by bystander behavior that tends to reinforce the bully (Olweus, 2001). A relatively new body of research is examining the different roles that bystanders can take in response to bullying. Reinforcers are bystanders whose actions, such as laughing, bolster and encourage the bully. Passive bystanders are defined as those who choose to ignore the bullying event and do not aid or deter the bullying when they witness it (Gini, Albiero, Benelli, & Altoè, 2008; Thornberg & Jungert, 2013). In contrast to these two roles, "upstanders" are bystanders who intervene on behalf of victims to stop bullying (Ansary, Elias, Greene, & Green, 2015; Salmivalli et. al, 1996; Thornberg & Jungert, 2013). The term "upstander" has gained recognition through bullying prevention programs (NSCC, 2010). Newer bully prevention programs focus on encouraging students to be upstanders by teaching students that bullying is a group problem and urging them to practice positive interventions by standing up to bullies (Nese, Horner, Dickey, Stiller, & Tomlanovich, 2014; NSCC, 2010).

Normative beliefs about aggression influence a student's aggressive behavior (Crick & Dodge, 1994; Wright & Li, 2013); for example, students who believe that being

a good fighter is necessary to gain the respect of their peers will engage in more fighting than youth who do not share this belief (Gendron, Williams, & Guerra, 2011; Huesmann & Guerra, 1997; Wright & Li, 2013). Pro-aggressive attitudes, such as the belief that fighting makes you more popular, are contrary to the messages taught by anti-bullying programs (Nese et al., 2014; Polanin, Espelage, & Pigott, 2012). Huesmann's theory of aggression (1988) posited that children hold higher normative aggressive beliefs as a result of cognitive scripts about aggression they learn from others. These cognitive scripts are maintained through observations of others (peer context) and active engagement, such as bullying and teasing others (Huesmann, 1988).

The first study investigated the hypothesis that a student who endorses pro-aggressive beliefs would be more likely to be a reinforcer and less likely to be an upstander. Furthermore, a goal of this study was to demonstrate that in schools where aggressive attitudes are more widely shared, students would be less likely to be upstanders and more likely to be reinforcers.

The initial sample consisted of 51,638 seventh and eighth grade students who participated in the 2013 Virginia Secondary School Climate Survey, a part of the state's annual school safety audit program (Cornell et al., 2013). Because the study was concerned with bystanders, 6,856 students who were involved in the group process of bullying as bullies, victims, or bully-victims, were excluded from the sample. The final analytic sample consisted of 28,765 students representing a diverse distribution of race, gender, and socioeconomic status (SES).

Students answered six items from the Aggressive Attitudes scale, which measured the prevalence of aggressive attitudes related to bullying and fighting. It included

statements such as “Bullying is sometimes fun to do” and “It feels good when I hit someone” that were answered on a four-point scale, ranging from 1-*strongly disagree*, 2-*disagree,* 3-*agree, to* 4-*strongly agree*. At the student level, summing all the items formed an overall aggressive attitudes score. At the school level, the student-level scores were aggregated to an overall school-level aggressive attitudes score. Huang et al. (2015) investigated the multilevel factor structure, measurement invariance, and concurrent validity of the Aggressive Attitudes scale and found excellent psychometric support for the scale at both the student and school level.

To determine bystander behavior, students were asked to report what they did the last time they saw someone being bullied. Based on previous literature, the students were categorized into three bystander roles (Pozzoli et al., 2012; Thornberg & Jungert, 2013; Trach et al., 2010): (1) 13,842 (48.1%) students who reported “I did something to try to stop it when it was happening” and/or “I asked a teacher or another adult at school for help about it” were categorized as upstanders, (2) 1,857 (6.5%) students who reported “I laughed along with others who saw it” were categorized as reinforcers, and (3) 13,066 (45.4%) students who reported “I ignored it” and/or “I did nothing at the time, but tried to stop it from happening again” were categorized as passive bystanders.

Multi-level logistic regressions indicated that higher aggressive attitudes were associated with less upstanding behavior at the school level and less upstanding behavior and more reinforcing behavior at the individual level, while controlling for other school and student demographic variables. The results confirmed the study hypothesis that pro-aggressive attitudes were associated with a lower likelihood of upstander behavior in the multilevel model. This study provides new information about bystanding behavior and

the association with pro-aggressive attitudes that could be a target of intervention by anti-bullying programs. These findings suggest that focusing on normative beliefs and attitudes in anti-bullying programs could be a point of intervention for influencing students' actions.

The paper, "Aggressive Attitudes and Prevalence of Bullying Bystander Behavior in Middle School," was first presented as a poster at the XXIst International Society for Research on Aggression World Meeting in July 2014. The paper was published in *Psychology in the Schools* in July 2016 (Datta, Cornell, & Huang, 2016).

Paper two. Typically, bullying is defined as repeated, intentional acts of aggression directed towards another student who has less status or power (Olweus, 1996, 2001). The standard definition implies that bullying focuses on student interactions and does not consider bullying by adults. However, there is research on bullying in the workplace, where it is recognized that supervisors can abuse their authority and bully their supervisees (Samnani & Singh, 2015). Similarly, teachers may abuse their authority and bully their students (Zerillo & Osterman, 2011). Twemlow and colleagues (2006) defined teacher bullying as actions "to punish, manipulate or disparage a student beyond what would be a reasonable disciplinary procedure." A few studies have begun to investigate bullying by teachers and report a wide range of prevalence rates (Brendgen, Wanner, & Vitaro, 2006; Khoury-Kassabri, 2006; Pottinger & Stair, 2009; Twemlow et. al, 2006). In a secondary school sample, Delfabbro and colleagues (2006) found that almost 13% of students reported they were often victimized by peers, 11% reported they were often victimized by teachers, and 1.4% reported both types of victimization at school. In contrast, rates of peer bullying by students range from 17% to 25% among

students in the United States (Lessne & Cidade, 2015; Nansel et al., 2001). A goal of this study is to assess prevalence rates of bullying by teachers and how they overlap or compare to bullying by peers.

Bullying by peers has been identified as one of the most important problems faced by middle school students because it has widespread toxic effects on student engagement in school and overall social-emotional adjustment (Glew, Fan, Katon, & Rivara, 2008; Juvonen, Wang, & Espinoza, 2011). Many studies have found that bullied students become disengaged in school and have poor achievement (DiPerna, 2006; Finn & Rock, 1997; Lacey, Cornell, & Konold, 2015). In prior research, victims of peer bullying report lower grade point averages (GPA) in comparison to non-victims (Glew et al., 2008; Juvonen et al., 2011). Bullying by teachers could have similar toxic effects on students. Students may report lower engagement and achievement because students are working for their teachers; students might be less inclined to work hard for them and earn good grades. It seems likely that students who are bullied by teachers would hold a negative view of their school climate and in particular that they would perceive discipline as unfair and their teachers as unsupportive, which are two key elements of school climate (Konold et al., 2014).

Bullying by peers has been consistently linked to poorer emotional and social adjustment (Benedict et al., 2015). When bullied by peers, students show high levels of social and emotional distress (Delfabbro et al., 2006). It is conceivable that students bullied by teachers would feel similarly isolated, anxious, and sad in response to being picked on by their teachers. In one study, research found that students who reported bullying by peers characteristically showed higher levels of social alienation and lower

self-esteem than those bullied by teachers (Delfabbro et al., 2006). The results of the latter study suggest that there may be important differences between students who are bullied by teachers as opposed to peers, which need to be more extensively studied.

In view of the need for research on bullying by teachers, this study examined two main questions: (1) How does the prevalence of bullying by teachers compare to the prevalence of bullying by peers in middle school? and (2) How does academic and social-emotional adjustment of students bullied by teachers compare to the adjustment of students bullied by peers?

The initial sample consisted of 60,695 seventh and eighth grade students who participated in the 2015 Virginia Secondary School Climate Survey, a part of the state's annual school safety audit program (Cornell et al., 2015). The final analytic sample included 56,508 students representing a diverse distribution of race, gender, and socioeconomic status (SES).

To measure levels of bullying by peers and teachers, students were first given a description of bullying derived from the widely adopted Olweus (1996) definition. Students were also provided with a definition of bullying by teachers consistent with prior studies (Twemlow & Fonagy, 2005; Twemlow et al., 2006), "A teacher or other adult at school bullies a student by repeatedly punishing or criticizing a student unfairly. This goes beyond what is normal discipline in the school." Students were then asked to report whether peers or teachers had bullied them in the past year.

Academic adjustment was measured by self-reports of grades, affective engagement, and cognitive engagement. A survey item asked students to report, "What grades did you make on your last report card?" Student engagement in school was

measured with a six-item scale (Konold, 2014) that included three items measuring affective engagement (e.g., "I am proud to be a student at this school") and three items measuring cognitive engagement (e.g., "I want to learn as much as I can at school").

School climate was measured by two key elements: student support and disciplinary structure (Gregory & Cornell, 2009). An eight-item scale measured supportiveness of teacher-student relationships with items such as, "There are adults at this school I could talk with if I had a personal problem." A seven-item scale measured perceived fairness and strictness of school discipline with items such as, "Students are treated fairly regardless of their race or ethnicity."

Social-emotional adjustment was measured with a five-item scale encompassing items most commonly identified as reactions to bullying, such as "I didn't want to come back to school" (Cornell et al., 2015). This scale was only answered by students who endorsed yes to being victimized or bullied by peers or their teachers, which reduced the sample size for some analyses.

To answer the first question, students were classified into four groups: (1) not bullied (87.2%), (2) bullied only by peers (9.3%), (3) bullied only by teachers (1.2%), and (4) bullied by peers and teachers (1.5%). To answer the second question, six regression models investigated the academic and social-emotional adjustment of students bullied by teachers, students bullied by peers, and students who were doubly victimized (i.e., bullying by peers and teachers). In all regression models victims of bullying, regardless of whether victimized by a student, teacher, or both, reported poorer school adjustment than students who were not victimized. The toxic correlates of teacher bullying were different than the correlates of peer bullying. Bullying by teachers was

associated with more negative academic adjustment, whereas bullying by peers was associated with greater distress. In general, students bullied by both peers and teachers reported the most substantial adjustment problems. Notably, students bullied only by peers reported higher distress in contrast to students bullied only by teachers. It is conceivable that students felt more distress when negatively evaluated by their peers as opposed to authority figures. Although bullying by peers held a significant negative association with school adjustment, the effect sizes associated with bullying by teachers are substantial and concerning. Our findings call for more attention and research on the problem of teacher bullying.

The paper, "The Toxicity of Bullying by Teachers," was first presented as a poster at the American Psychological Association Annual Conference in August 2016. The paper was accepted for publication in *School Psychology Review* in April 2017 (Datta, Cornell, & Huang, in press).

Paper three. Teen dating aggression (TDA) is characterized by a pattern of controlling behavior intended to maintain the bully's power in a relationship (CDC, 2016; Gladden et al., 2014). The literature frequently uses the term teen dating violence, but violence is typically defined as the intentional use of physical force to injure someone (Krug, Mercy, Dahlberg, & Zwi, 2002), whereas aggression is defined more broadly as a forceful behavior, action, or attitude that is expressed physically, verbally, or symbolically (aggression, n.d.; Warburton & Anderson, 2015). Therefore, this study used the term teen dating aggression to encompass forms of aggression that are short of violence.

Most often, researchers have focused on physical abuse such as hitting a partner (CDC, 2016) and sexual abuse such as forcing a partner to engage in sex acts against their will (CDC, 2016; Wincentak, Connolly, & Card, 2016). These types include *Verbal aggression*, in the form of name-calling and belittling comments, to target the self-worth of the victim and/or promote isolation from friends and family (CDC, 2016); *Threat to harm*, to manipulate the behavior of a victim with a threat of violence (Wolfe et al., 2001); *Stalking/harassment*, to use a pattern of threatening tactics to cause fear (CDC, 2016); *Pressure to take alcohol/drugs*, to coerce a partner to participate in risky behaviors that endanger their health or render them more vulnerable to control by others (Goncy, Sullivan, Farrell, Mehari, & Garthe, 2016; Lavoie, Robitaille, & Hébert, 2000; Niolon et al., 2015; Wolfe et al., 2001). Therefore, there is a need to consider multiple forms of aggression associated with teen dating aggression.

There are mixed findings about the prevalence of TDA in adolescent populations (Wincentak et al., 2016). For example, a recent meta-analysis reported a range of prevalence rates reported across TDA research and found that physical TDA ranged from as low as 1% to as high as 61% (Wincentak et al., 2016). Analysis of prevalence rates are further compounded by varied findings across demographic characteristics such as gender (Cutbush, Williams, & Miller, 2016; Espelage & Rue, 2013), race (Hamby, 2015), grade (Goncy et al., 2016), SES (Foshee et al., 2009; West & Rose, 2000), and urbanicity (Lormand et al., 2013). Traditionally, girls have reported higher rates of TDA victimization, especially physical TDA (Wincentak et al., 2016). However, there is emerging evidence to suggest boys may underreport their own victimization experiences (Goncy et al., 2016; Lormand et al., 2013). There is substantial evidence that students of

lower socioeconomic status (SES) and varying urbanicity experience TDA at higher rates (Lormand et al., 2013; Wincentak et al., 2016). For example, students from rural and urban areas may experience higher rates of TDA in comparison to students from towns or suburban settings (Foshee et al., 1996; Lormand et al., 2013). Furthermore, there are mixed findings that age and race are significantly correlated with TDA (Debnam, Waasdrop, & Bradshaw, 2016; Lormand et al., 2013). As a result, there is a need to examine the prevalence of TDA in a large and diverse sample that can simultaneously consider differences across gender, grade, and racial/ethnic groups.

There is widespread agreement that TDA co-occurs at high rates with other harmful behaviors in adolescence (Swahn et al., 2013). TDA has been linked to high-risk behavior including substance use (Ackard, Eisenberg, & Neumark-Sztainer, 2007; Swahn, Bossarte, Palmier, Yao, & Van Dulmen, 2013) and fighting at school (Niolon et al., 2015; Swahn et al., 2013). Many studies have investigated how TDA is linked to suicidality (Ackard et al., 2007; Nahapetyan, Orpinas, Song, & Holland, 2014; Olshen, McVeigh, Wunsch-Hitzig, & Rickert, 2007). In a longitudinal study of 127 middle and high school students, both boys and girls who experienced TDA reported later suicidal ideation and attempts (Ackard et al., 2007). In another longitudinal study of 624 high school students, girls, students in grades 9-11, and those who had experienced TDA were more likely to report suicidal ideation (Nahapetyan et al., 2014).

There is extensive agreement across studies that peer victimization may cause students to become disengaged from school, leading to poor achievement (DiPerna, 2006; Finn & Rock, 1997; Lacey, Cornell, & Konold, 2015). It is conceivable that students experiencing dating aggression would similarly become disengaged and report lower

achievement (Break the Cycle, 2014; Halpern, Oslak, Young, Martin, & Kupper, 2001). Due to the heightened importance of romantic relationships in adolescence, TDA may be a particularly potent form of peer victimization (Exner-Cortens, 2014).

This study investigated three research questions: (1) Is there evidence to support a brief, 6-item measure of multiple types of TDA?, (2) What is the prevalence of TDA across different demographic groups?, and (3) Do students who have experienced TDA report higher risk behaviors and poorer academic adjustment in comparison to their peers who are dating and not experiencing TDA?

The initial sample consisted of 62,679 ninth, tenth, eleventh, and twelfth grade students who completed the 2016 State Secondary School Climate Survey as part of the state's annual school safety audit program (Cornell et al., 2016). To focus on students who were actively dating and thus could experience dating aggression, the sample was subdivided to include only those who reported dating someone in the past 12 months (48.2%). The final analytic sample consisted of 32,428 students representing a distribution across race, gender, and SES.

Six questions were derived from previous scales to capture different types of dating aggression (Foshee, Linder, Bauman, et al., 1996; Niolon et al., 2015; Wolfe et al., 2001). Each question began with the root, "During the past 12 months how many times did someone you dated or went out with …" The six items asked students to report how many times they had experienced physical aggression, verbal aggression, threat to harm sexual aggression, continued harassment, and pressure to use alcohol/drugs.

Academic adjustment was measured by self-reports of grades, affective engagement, and cognitive engagement. Student engagement in school was measured

with a six-item scale (Konold et al., 2014) that included three items measuring affective engagement (e.g., "I am proud to be a student at this school") and three items measuring cognitive engagement (e.g., "I want to learn as much as I can at school").

Five items were taken from the Youth Risk Behavior Survey (YRBS; CDC, 2015) to measure student risk behavior. Items included marijuana use ("During the past 30 days, how many times did you use marijuana?"), engaging in a fight ("During the past 12 months, how many times were you in a physical fight on school property?"), and consuming alcohol ("During the past 30 days, on how many days did you have at least one drink of alcohol?"). Furthermore, students were asked about suicidal ideation ("During the past 12 months, did you ever seriously consider attempting suicide?") and their number of suicide attempts ("During the past 12 months, how many times did you actually attempt suicide?").

To answer the first question, results of a single factor CFA analysis suggested reasonable fit as gauged by the fit indices, with some room for improvement. Standardized factor loadings linking each item to an overall TDA factor were large and statistically significant, ranging between .57 and .79. Notably, verbal aggression and harassment were the two highest reported types of TDA (19-25% of all students in the sample). A survey that focused only on physical and sexual TDA would have overlooked other types of coercive and aggressive behaviors in relationships that occur with more frequency. For the second research question, our analyses indicated that nearly 4 out of 10 high school students experienced at least one form of TDA in the past 12 months. As expected, girls reported significantly more TDA. However, upon closer examination of the items, boys were seen to report threat to harm (11%), pressure to drink alcohol/drugs

(10%), and physical aggression (10%) at nearly equivalent rates to girls. Also as expected, older students in the 11th and 12th grade reported more TDA. Students from a lower SES also reported more TDA. Our findings for racial/ethnic differences and TDA were contrary to some previous findings; Hispanic students were the only minority group to report higher TDA in comparison to White students.

To answer the third research question, hierarchical multiple regression was used to investigate the association of the resulting teen dating aggression victimization scale with eight dependent variables: (1) marijuana use, (2) fighting, (3) alcohol use, (4) suicidal ideation, and (5) suicide attempts, (6) engagement, (7) student reported grades, and (8) educational aspirations. Students who experienced TDA in the past year reported more marijuana use (26% vs. 13%), alcohol use (40% vs. 22%), fighting (13 vs. 5), suicidal ideation (31% vs. 13%), and suicide attempts (17% vs. 5%) than students who dated without TDA. Students who experienced TDA also reported lower school engagement, educational aspirations, and lower grades. These findings add new evidence that TDA is a prevalent adolescent problem associated with poorer overall adjustment.

Implications

This dissertation aims to provide a window into three under-recognized aspects of adolescent bullying. Bullying in adolescence is complex and conceptualizations of it must consider the social contexts in which it occurs. The first paper established a connection between pro-aggressive attitudes and bystanding behavior, which could be a focal point of intervention in anti-bullying programs. The second paper raised awareness of the prevalence of teacher bullying and connection to toxic school outcomes for students in comparison to bullying by peers. The third paper provided an analysis of TDA

victimization across important demographic characteristics and demonstrated a relationship between TDA and higher risk behaviors and poorer academic adjustment. In each paper, implications for school interventions are addressed to develop stronger and more effective anti-bullying and anti-aggression programming.

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Abstracts

Manuscript One: Aggressive Attitudes and Prevalence of Bullying Bystander Behavior in Middle School

Separate lines of research find that pro-aggressive attitudes promote peer aggression and that bystanders play a pivotal role in deterring or facilitating bullying behavior. The current study hypothesized that pro-aggressive attitudes in middle school would deter students from standing up to bullying and encourage them to reinforce bullying behavior. Middle school students (n = 28,765) in 423 schools completed a statewide school climate survey that included an aggressive attitudes scale and their bystander response to a recent episode of bullying, which was categorized as upstanding, reinforcing, or passive. Multi-level logistic regressions indicated that higher aggressive attitudes were associated with less upstanding behavior at the school level and less upstanding behavior and more reinforcing behavior at the individual level, while controlling for other school and student demographic variables. These findings suggest that anti-bullying programs might address student attitudes toward aggression as a means of boosting positive bystander intervention.

Manuscript Two: The Toxicity of Bullying by Teachers

Although the toxic effects of peer bullying among middle school students are widely recognized, bullying by teachers has received little attention. This study compared the prevalence and school adjustment of students bullied by teachers versus peers. The sample consisted of 56,508 students in grades 7 and 8 who completed a statewide school climate survey. Students were classified into four groups: (1) not bullied (87.2%), (2) bullied only by peers (9.3%), (3) bullied only by teachers (1.2%), and (4) bullied by peers and teachers (1.5%). In comparison to students who reported no bullying, students bullied by teachers were significantly more likely to report lower school engagement and GPA, and more negative perceptions of school climate. Students bullied only by peers reported more distress symptoms than those bullied by teachers. These findings call for more attention to the problem of teacher bullying.

Manuscript Three: The Association of Teen Dating Aggression with Risk Behavior and Academic Adjustment

Teen dating aggression (TDA) is recognized as a serious developmental concern in adolescence. The current study constructed a six-item TDA scale, investigated the prevalence of TDA in a statewide sample, and examined the association between TDA and high-risk behaviors and academic adjustment. The sample consisted of 32,428 students in 320 high schools who completed a school climate survey. Nearly four in 10 students (39%) reported experiencing at least one form of dating aggression in the past year. Students who experienced TDA reported more marijuana use, alcohol use, fighting, and suicidality. Students who experienced TDA also reported lower school engagement, educational aspirations, and grades. These findings add new evidence that TDA is a prevalent adolescent problem associated with poorer overall adjustment.

Manuscript One

Aggressive Attitudes and Prevalence of Bullying Bystander Behavior in Middle School

Pooja Datta and Dewey Cornell

Curry School of Education, University of Virginia

Francis Huang

College of Education, University of Missouri

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Pooja Datta, Curry School of Education, University of Virginia; Dewey G. Cornell, Curry School of Education, University of Virginia; Francis L. Huang, College of Education, University of Missouri.

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Correspondence concerning this article should be addressed to Pooja Datta, School of Education, University of Virginia, 205 Ruffner Hall, Charlottesville, VA 22903. E-mail: pd8tb@virginia.edu

Abstract

Separate lines of research find that pro-aggressive attitudes promote peer aggression and that bystanders play a pivotal role in deterring or facilitating bullying behavior. The current study hypothesized that pro-aggressive attitudes in middle school would deter students from standing up to bullying and encourage them to reinforce bullying behavior. Middle school students (n = 28,765) in 423 schools completed a statewide school climate survey that included an aggressive attitudes scale and their bystander response to a recent episode of bullying, which was categorized as upstanding, reinforcing, or passive. Multi-level logistic regressions indicated that higher aggressive attitudes were associated with less upstanding behavior at the school level and less upstanding behavior and more reinforcing behavior at the individual level, while controlling for other school and student demographic variables. These findings suggest that anti-bullying programs might address student attitudes toward aggression as a means of boosting positive bystander intervention.

Keywords: aggressive attitudes; bystander behaviors; upstanders

Aggressive Attitudes and Prevalence of Bullying Bystander Behavior in Middle School

Bullying is widely regarded as a group process that is sustained through student bystanders who can facilitate or discourage the bully's behavior (Olweus, 2001; Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukianen, 1996; Salmivalli, 2010). Recently, student bystander behavior has become a focal point for anti-bullying programs and prevention efforts (Bully-Victim-Bystander Cycle Tool Kit, 2015; Nishina & Juvonen, 2005; O'Connell, Pepler, & Craig, 1999; Twemlow, Fonagy, & Sacco, 2004). For example, the Expect Respect program teaches students that bullying is a group problem and encourages them to practice positive interventions as a bystander (Nese, Horner, Dickey, Stiller, & Tomlanovich, 2014). The KiVa program encourages positive changes in bystander behavior to reduce social rewards perceived by bullies (Karna et al., 2013; Salmivalli, Poskiparta, Ahtola, & Haataja, 2013).

Bystander literature distinguishes three common bystander behaviors: students who come to the aid of the victim (upstanding behavior), side with the perpetrator (reinforcing behavior), or ignore the event (passive behavior; Salmivalli, Voeten, & Poskiparta, 2011). For this study, students who reported that they intervened on behalf of victims to stop bullying were defined as upstanders, which is comparable to defenders in previous literature (Ansary, Elias, Greene, & Green, 2015; Devine & Cohen, 2007; Pozzoli, Gini, & Vieno, 2012; Salmivalli et. al, 1996; Thornberg & Jungert, 2013). The term "upstander" is derived from being an *upstanding* citizen in society, which describes people who adopt a stance against injustices (Grantham, 2011). This term has gained recognition through bullying prevention programs (NSCC, 2010). Students who laughed or supported the bullying behavior were defined as reinforcers and those who chose to

ignore bullying were defined as passive-bystanders (Gini, Albiero, Benelli, & Altoè, 2008; Thornberg & Jungert, 2013). The presence of upstanders and reinforcers has an effect on the social rewards perceived by bullies (Craig & Pepler, 1997; Salmivalli et al., 2011).

Salmivalli et al. (2011) investigated whether defending or reinforcing actions by bystanders were associated with the frequency of bullying in a sample of 8,248 Finnish elementary school students (Grades 3-5). Students filled out the Participant Role Questionnaire (Salmivalli & Voeten, 2004), which included scales for defending or reinforcing behavior to aid in identifying bystander behavior. Overall, they found that the presence of defending behavior was associated with reduced reinforcing behavior and bullying (Salmivalli et al., 2011).

Recent research on the KiVa anti-bullying program found that the anti-bullying attitudes of bystanders were important mediators of the reductions in bullying achieved by the program (Saarento, Boulton, & Salmivalli, 2015). This study supported the theoretical view that the peer group plays a key role in the development and persistence of bullying. The KiVa program attempted to reduce bullying by influencing the peer group to disapprove of bullying and stand up for victims, so that bullies would be deprived of the social motivation that encourages and sustains bullying behavior. At both student and classroom levels, changes in bystander attitudes toward bullying were associated with decreased bullying. The present study does not examine an anti-bullying program; it tests whether the hypothesized mechanism is associated with the level of bullying across a large and diverse sample of schools. A goal of this study is to demonstrate the importance of school-level attitudes toward aggression as a factor that

influences bystander behavior. Whereas previous studies have examined the aggressive attitudes of students who bully others, this study investigates the more general influence of aggressive attitudes on bystander behavior. Unlike previous studies that focused on the attitudes of individual students that shape their own behavior, this study takes a multi-level approach that measures both individual, student-level influences, and school-level effects.

Demographic Differences

With regard to demographic factors, studies have found that as students move from elementary to secondary schools, they report less willingness to intervene and help others (Stevens, Van Oost, & De Bourdeaudhuij, 2000); however, when examined by gender, differences emerge. Girls are more likely to be defenders as opposed to boys (O'Connell et al., 1999; Salmivalli et al., 1996; Trach, Hymel, Waterhouse, & Neale, 2010), perhaps because they have greater empathy for others and are more likely to engage in pro-social behavior (Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000).

There is substantial evidence that student demographics are associated with school differences in bullying and peer aggression (Gottfredson, Gottfredson, Payne, & Gottfredson, 2005; Juvonen & Graham, 2014; Robers, Kemp, & Truman, 2013). Some studies have found that schools with larger proportions of racial minority students have greater levels of peer aggression (Gottfredson, et al., 2005), although there is some contrary evidence that racial diversity is associated with lower levels of peer victimization (Juvonen & Graham, 2014). There are mixed findings regarding the association of school size and levels of student aggression (Gottfredson & DiPietro,

2011; Klein & Cornell, 2010). Although socioeconomic status has not been investigated in relation to bystander behaviors to this date, students with low socioeconomic status (SES) have demonstrated significantly higher aggression in comparison to students in middle to high SES (Bas & Yurdabakan, 2012). Greater proportions of low SES students have also been identified as a risk factor for higher school rates of victimization (Bauer, Guerino, Nolle, & Tang, 2008; Khoury-Kassabri, Benbenishty, Astor, & Zeira, 2004).

Aggressive Attitudes

Normative beliefs about aggression influence a student's aggressive behavior (Crick & Dodge, 1994; Wright & Li, 2013); for example, students who believe that being a good fighter is necessary to gain the respect of their peers will engage in more fighting than youth who do not share this belief (Gendron, Williams, & Guerra, 2011; Huesmann & Guerra, 1997; Wright & Li, 2013). Huesmann's theory of aggression (1988) posited that children hold higher normative aggressive beliefs as a result of cognitive scripts about aggression they learn from others. These cognitive scripts are maintained through observations of others (peer context) and active engagement, such as bullying and teasing others (Huesmann, 1988).

McConville and Cornell (2003) surveyed 403 middle school students using an aggressive attitudes scale that measured the degree to which students considered aggressive behavior such as fighting to be normative and supported by their peers. Students who endorsed aggressive attitudes were more likely than other students to engage in aggressive behavior (e.g. shoving, hitting, and kicking peers) over the school year and were more likely to be identified as bullies by their peers and teachers. In addition, McConville and Cornell demonstrated that aggressive attitudes predicted school

disciplinary referrals, detentions, and suspensions. This study demonstrated an individual-level effect of the student's perceptions of peer support for aggression on his or her own aggressive behavior but did not measure the effects of school-level beliefs by peers.

In contrast to individual-level studies, Bandyopadhyay, Cornell, and Konold's (2009) study used school-level measures to predict school-level outcomes. Using a survey of ninth-grade students from 291 schools, Bandyopadhyay et al. investigated the association of aggressive attitudes with measures of rates of misbehavior, suspensions, and bullying. Higher aggressive attitudes were associated with a greater number of student misbehaviors and a greater prevalence of bullying and teasing as reported by teachers (Bandyopadhyay et al., 2009).

A recent study investigated the concurrent validity of aggressive attitudes at both the school and the student-level using a large sample of middle school students (n = 39,364; Huang, Cornell, & Konold, 2015). At the student-level, the aggressive attitudes were associated with a higher likelihood of bullying others. At the school-level, attitudes supportive of aggression were associated with increased prevalence of teasing and bullying, student victimization, school suspensions, and aggression-related disciplinary infractions, as well as teacher perceptions of reduced safety. The value of the Huang et al. study is that it provides a school-level measure of aggressive attitudes that has not been previously available and permits the investigation of school-level effects.

The Current Study

There are two converging lines of research that led to the current study. One line of research in the peer aggression literature indicates that students who believe that

aggressive behavior will gain them popularity and status are more likely to engage in aggressive behavior (Bandyopadhyay et al., 2009; Gendron et al., 2011; Huang et al., 2015; Huesmann & Guerra, 1997; Wright & Li, 2013). Another line of research in the bullying literature contends that bullying is supported by the attitudes of bystanders that reinforce bullying and that bullying is reduced when more students are willing to stand up to bullying (Salmivalli et al., 2011; Thornberg & Jungert, 2013). The current study investigated the hypothesis that peer attitudes supportive of aggressive behavior will be associated with bullying bystander behavior. Students who value aggressive behavior as a source of popularity might not only be more aggressive but also more likely to encourage and reinforce bullying by their peers (Salmivalli et al., 2011; Thornberg & Jungert, 2013). This study examines how aggressive attitudes might be associated with bystander behavior on two levels. At an individual level, a student's aggressive attitude would be associated with his or her own response to bullying. At a group or school level, there would be fewer upstanders and more reinforcers in schools where aggressive attitudes are more widely shared by students. These prevailing attitudes, such as the belief that fighting makes you more popular, are contrary to the messages taught by anti-bullying programs (Nese et al., 2014; Polanin, Espelage, & Pigott, 2012). Students who do not value aggressive behavior may be willing to challenge perpetrators by standing up for the victim (Salmivalli et al., 2011).

The present study examined both individual- and school-level associations between attitudes toward aggression and bystander behavior in a sample of 28,765 students from 423 middle schools. It was hypothesized that students would be less likely

to report upstanding behavior and more likely to report reinforcing behavior in a school climate characterized by high levels of aggressive attitudes.

Method

Participants

The sample consisted of 7th and 8th grade students who participated in the Virginia Secondary School Climate Survey, a part of the state's annual school safety audit program (Cornell et al., 2013). The surveys were completed in March to mid-May of 2013. The school participation rate was approximately 98%, based on 423 of 430 eligible schools. High participation rates were achieved with the endorsement of the Virginia Department of Education and the Virginia Department of Criminal Justice Services.

Schools were given the option to either (a) invite all 7th and 8th graders to participate in the study (whole grade option) or (b) randomly select 25 students from each grade to participate (random sample option). For schools that chose the random sample option, principals were given instructions for using a random number list customized to their enrollment size to select students. All students were eligible to participate in the study, except for those with limited English proficiency or an intellectual or physical disability that would prevent them from completing the survey.

Procedure

From a potential pool of 51,638 students, there were a total of 43,805 students who participated in the survey (overall participation rate approximately 84.8%). The main reasons for non-participation were student absence because of illness, the parent declined participation, or a schedule conflict (for more information, see Cornell et al., 2013).

To improve data quality, 4,441 (10.1%) surveys collected from students were excluded for three reasons: (1) completion time was lower than an empirically determined cutoff, approximately 7.2 minutes (0.7%), (2) students marked the wrong grade level (0.04%), and (3) students reported not answering truthfully, according to two validity screening items (6.4%) (Konold et al., 2014). We plotted survey response times for respondents taking 30 minutes or less to complete the survey. Results indicated that 10% of students completed the survey too fast (under 7.2 minutes) to have read the survey carefully. The two validity items were "I am telling the truth on this survey" and "How many of the questions on this survey did you answer truthfully?" The use of validity screening questions has been shown to improve the quality of adolescent survey data (Cornell, Klein, Konold, & Huang, 2012; Cornell, Lovegrove, & Baly, 2014).

Due to our interest in pure bystanders who were not involved in the group process of bullying as bullies, victims, or bully-victims, 6,856 students were excluded from the final analytic sample. Three items measured whether or not a student was a bully or victim; consistent with previous studies (Baly, Cornell, & Lovegrove, 2014; Branson & Cornell, 2009; Cornell & Brockenbrough, 2004; Solberg & Olweus, 2003), students who endorsed being bullied or perpetrating bullying more than once or twice were excluded.

The final analytic sample included 28,765 students, of which 14,918 (51.9%) were girls. There were 14,931 (51.9%) seventh graders and 13,834 (48.1%) eighth graders. Approximately 3,608 (13%) students identified themselves as Hispanic or Latino ethnicity. The racial breakdown was 5,233 (18%) Black, 1,050 (4%) Asian American, 15,316 (53%) White, 4,182 (15%) multiracial, and 2,984 (10%) of two or more race or other race/ethnicity not defined. The distribution of parental education, a proxy measure

for socioeconomic status, was 24.7% completed post-graduate studies, 24.4% completed a four-year college degree, 14.2% completed a two-year college or technical education degree, 28.6% graduated from high school, and 8.1% did not graduate from high school.

Measures

Anonymous surveys, comprised of approximately 120 items, were administered online to students during the school day under the supervision of school staff using standardized instructions. The surveys consisted of questions about school climate characteristics such as student support, fairness of school discipline, and student demographics (for more information, see Cornell et al., 2013).

Aggressive attitudes. The Aggressive Attitudes scale (see Table 1 for items) measured the prevalence of aggressive attitudes related to bullying and fighting. It included six statements, such as "Bullying is sometimes fun to do" and "It feels good when I hit someone," that were answered on a four-point scale, ranging from 1-*strongly disagree*, 2-*disagree,* 3-*agree, to* 4-*strongly agree*.

Huang et al. (2015) used the same sample as the present study to investigate the multilevel factor structure, measurement invariance, and concurrent validity of the Aggressive Attitudes scale and found excellent psychometric support for the scale at both the student and school level. In the present study, at the student level, an overall aggressive attitudes score was formed by summing all the items (M = 10.80, SD = 3.29, range = 6-24, coefficient alpha = .78). At the school-level, the student-level scores were aggregated to an overall school-level aggressive attitudes score (M = 10.89, SD = 0.96, range = 8.27 – 14.50, coefficient alpha = .89, ICC = .01).

Bystander type. Students were asked to report what they did the last time they saw someone being bullied. There were six possible response options, with the ability to endorse more than one: (1) *I ignored it*, (2) *I did nothing at the time, but tried to stop it from happening again*, (3) *I asked a teacher or another adult at school for help about it*, (4) *I did something to try to stop it from happening,* (5) *I laughed along with others who saw it*, and (6) *I did something else*. Based on previous bystander literature the students were categorized into three bystander roles (Pozzoli et al., 2012; Thornberg & Jungert, 2013; Trach et al., 2010): (1) students who reported "I did something to try to stop it when it was happening" and/or "I asked a teacher or another adult at school for help about it" were categorized as upstanders, (2) students who reported "I laughed along with others who saw it" were categorized as reinforcers, and (3) students who reported "I ignored it" and/or "I did nothing at the time, but tried to stop it from happening again" were categorized as passive bystanders.

Students who solely endorsed "I did something else" were excluded because their responses did not fall within a distinct bystander role. Students who endorsed conflicting responses were also excluded (e.g., reinforcer and upstander; 3,743 students; 9%).

Covariates. The analyses controlled for student demographic variables that included gender, grade level, race/ethnicity, and parental education. The analyses also controlled for school demographics: percentage of students who received free or reduced-price meals (FRPM; $M = 0.45$, $SD = 0.21$), school enrollment size (per 100 students; $M = 7.18$, $SD = 4.16$), and percentage of White students ($M = 0.61$, $SD = 0.28$). School demographic data were obtained from state records.

Analytic Strategy. Hierarchical generalized linear models were used to predict binary outcomes using a logit link function (i.e., multilevel logistic regression model). Two models were run to predict (1) upstander and (2) reinforcing behavior.[1] In both models, passive-bystanders served as the reference group. All data management and regression models (PROC GLIMMIX) were run using SAS 9.3. Random intercepts models were used to account for the students nested within schools and all continuous variables were grand mean centered. Results are shown in odds ratios (*OR*s), but the log odds were converted into predicted probabilities for easier interpretation.

Results

Students in the sample were classified as exhibiting one of three categories: (1) *upstander* behavior (13,842 students; 48.1%), (2) *reinforcer* behavior (1,857 students; 6.5%), and (3) *passive* behavior (13,066 students; 45.4%). For descriptive purposes, Figure 1 shows the decrease in upstander behavior and increase in reinforcer behavior as the level of Aggressive Attitudes increased within a school. The school level of aggressive attitudes was sorted into three groups: schools with "low" prevalence of aggressive attitudes (one *SD* or more below the mean), schools with "average" prevalence of aggressive attitudes (between one *SD* below and one SD above the mean), and schools with "high" prevalence of aggressive attitudes (one *SD* or more above the mean).

Separate multi-level logistic regressions (see Table 2) distinguished (1) upstander behavior versus passive behavior and (2) reinforcer behavior versus passive behavior. As is customary with multilevel models, we computed the intraclass correlations (ICCs) for

[1] Another alternative strategy we used was to run a multilevel multinomial regression. Results were approximately the same.

both outcomes, which reflect the amount of variability attributable to the group level. Although ICC computations for linear regression models is straightforward, there is no one agreed-upon method for computing ICCs for multilevel logistic regression models, so we used ICC = $\sigma^2 / (\sigma^2 + [\pi^2 / 3])$ as recommended by Merlo et al. (2006) where σ^2 represents the between-error variance from a null model. For upstanding behavior, ICC was .02, and for reinforcing behavior, ICC was .06. Best practices in multilevel modeling suggest the importance of accounting for clustering even when minimal levels of ICCs are detected (Huang, 2016).

Upstander Behavior

In the logistic regression models predicting upstanding behavior (compared to bystander behavior), higher school level aggressive attitudes were associated with a lower likelihood of engaging in upstanding behavior (*OR* = 0.95, $p < .05$). In addition, other covariates were also statistically significant predictors of upstanding behavior (see Table 2): percent FRPM (*OR* = 1.41, $p < .01$), percent of White students (*OR* = 1.36, $p < .001$), and school size (per 100 students; *OR* = 0.99, $p < .01$).

At the student level, aggressive attitudes were also predictive of upstanding behavior. Students with higher levels of aggressive attitudes were less likely to demonstrate upstanding behavior (*OR* = 0.89, $p < .001$), while controlling for gender, grade, race/ethnicity, and parental education. Because the aggressive attitude *OR*s and the variability at the school level were much smaller compared to the student-level measure of aggressive attitudes (*SD* = 0.96 vs. 3.29), more of the differences can be attributed to student-held aggressive attitudes. In terms of predicted probabilities (converted from the log odds units from the regression models), an 8th grade male with a low level of

aggressive attitudes (-1 *SD* below the mean) in an average school has a 49% probability of exhibiting upstanding behavior compared to a similar child with a high level (+2 *SD* above the mean) of aggressive attitudes (41%; see Figure 2).

Reinforcing Behavior

In contrast to the models investigating upstanding behavior where all school-level predictors were statistically significant, none of the school-level variables predicted reinforcing behavior (all *p*s > .05). However, at the student level, aggressive attitudes were a statistically significant predictor (*OR* = 1.28, $p < .001$) while controlling for other student demographic characteristics. Females were more likely to engage in reinforcing behavior compared to males (*OR* = 1.12, $p < .05$) and all other race/ethnicities were also more likely to be reinforcers compared to White students (*OR*s = 1.37 – 1.48, all *p*s < .05). Grade level and parental education were not statistically significant (both *p*s > .05).

In terms of predicted probabilities, White male students who attended average schools and had low levels (-1 *SD* below the mean) of aggressive attitudes had a 4.8% probability of engaging in reinforcing behavior. However, a similar child with much higher levels of aggressive attitudes (+2 *SD* above the mean) had a 9.6% probability of engaging in reinforcing behavior, approximately twice the likelihood (see Figure 2). Even though the prevalence of reinforcing behavior was generally low, students with higher levels of aggressive attitudes were more likely to encourage bullying.

Discussion

Anti-bullying programs have focused attention on school-wide efforts to increase upstander behavior and decrease reinforcer behavior among bystanders (Ansary et al., 2015). Recent research has pushed for bystander behavior to be understood in the context

of larger group norms that actively or passively support bullying (Espelage, Green, & Polanin, 2012; Salmivalli, Kärnä, & Poskiparta, 2011). The current study helps to clarify the role aggressive attitudes may play in bystander behaviors by examining both individual- and school-level effects. Our findings suggest that prevention and intervention strategies should target the association between aggressive attitudes and bystander behavior.

As hypothesized, students in schools characterized by a higher prevalence of aggressive attitudes were less likely to report upstanding behavior in response to bullying. This effect was found after controlling the percentage of students who receive free and reduced-price meals, school enrollment size, and percentage of White students. In terms of reinforcing behavior, students were more likely to report being reinforcers as the prevalence of aggressive attitudes rose and students were less likely to report being upstanders as well.

Being an upstander could imply a wide range of helping behaviors, such as immediately intervening with a bully or asking a teacher or adult for help. Fewer than half of the students in this study (48%) reported they intervened on behalf of the victim in a bullying event. This finding is comparable to a similar study by Nickerson, Mele, and Princiotta (2008), where 52% of their middle school sample reported being defenders.

Furthermore, previous research has consistently linked girls with upstanding behavior (Jeffrey, Miller, & Linn, 2001). However, like Nickerson and Mele-Taylor (2014), the current study found that middle school girls were not more likely to be upstanders; in fact, girls were more likely to report reinforcing behavior. The Jeffrey et al. study found that overall sympathy for bystanders dwindled for students between the

fifth to the eighth grade, which could account for the greater percentage of girls reporting upstander behavior.

Although reinforcers are a small proportion of student enrollment, they are an important minority (Salmivalli, 1999). Relatively few students in a school (typically < 10%) reported reinforcing behavior. In previous studies, researchers have found 1 in 5 students were willing to admit that they engaged in reinforcer behavior, which still represent a small proportion of their students (Craig & Pepler, 1997; O'Connell et al., 1999). Additionally, the separation of bullies from the bystander sample in the current study may have filtered out more students who were reinforcers (Salmivalli et al., 2011). The strong association between aggressive attitudes and reinforcer behavior was entirely at the individual level. Essentially, individually held beliefs of aggression held more predictive power of a student being a reinforcer, in comparison to the school's endorsement of higher aggression. This relationship suggests that it would be more appropriate to use secondary intervention programs as opposed to relying on universal bystander interventions.

At the student level, the race or ethnicity of a student seemed to be a strong predictor of differing bystander behavior. The racial differences seen in this study are difficult to parse out because of the absence of other measured variables such as the race of the victim and the race of the bully, or whether the bullying was race-related. Although our results indicate that Black and multi-racial students are less likely to report passive bystanding behavior, there is a need for further examination of racial differences in bystander behavior.

These results also support the social ecological model that emphasizes the role of a student's environmental context on aggressive behavior (Espelage & Swearer, 2010). Espelage, Holt, and Henkel (2003) found that students affiliate with individuals who engage in the same degree of bullying and that fighting is predictive of engaging in these behaviors in the future. Espelage et al. posited a homophily effect, which is the tendency for individuals to associate with similar others, to explain how students influence each other in a social system and why peer context is influential to behavior. In a sample of middle school students, peer group context was significantly associated with more bullying. Essentially, if one member of a peer group engages in bullying then other friends in that peer group are more likely to engage in bullying. School and group level analyses are important in combination with individual analyses because they aid in investigating how peer groups impact individuals. Although this study examined school-level aggressive attitudes, future studies could consider the student's immediate peer group, which would likely have a stronger influence than the school student body as a whole. In this study, with the use of anonymous surveys, it was not possible to identify each student's closest peers.

There are effective prevention programs for schools that use a social-cognitive model of aggressive behavior (e.g., Coping Power; Lochman & Wells, 2002a). These programs aim to identify and change the cognitive processes associated with aggression.

Limitations

Several limitations should be considered when interpreting our results. First, the findings of this study are correlational in nature. Although our results were consistent with the hypothesis that the prevalence of aggressive attitudes will decrease the

likelihood that a student will report upstanding behavior, we cannot rule out the role of other unmeasured variables. Future research using an experimental design could determine whether reductions in aggressive attitudes produce an increased willingness to engage in upstanding or decrease reinforcing behavior. Second, self-reports of positive behavior are often overestimated in comparison to actual demonstrated behavior (O'Connell et al., 1999). Particularly, self-serving bias is more prevalent for students who report coming to the aid of the victim, because they wish to sound more pro-social. In turn, self-serving bias could hinder the validity of students' reporting upstanding behavior in the sample. However, because the survey was administered anonymously, there is a lower likelihood that such was the case. Finally, another limitation is that the sample only included seventh- and eighth-grade students and assessment across more grades is needed. The sample was also confined to one state, but included nearly the complete state population of eligible public schools from urban, suburban, and rural communities.

Conclusion

This study provides new information about the association between student attitudes toward aggression and bystanding behavior. There was evidence of both individual- and school-level effects across a large, demographically diverse sample of students and schools. These findings suggest that efforts to encourage students to intervene as upstanders should take into consideration the role of student attitudes that aggressive behavior is important to acceptance and popularity among their peers. School-based interventions that target student beliefs and norms about aggression in order to reduce aggressive behavior may have an impact on bystander behavior, which is critical to the effectiveness of anti-bullying programs.

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Table 1.

Breakdown of Student Responses to the Items in the Aggressive Attitudes Scale (n = 28,765)

Do you agree or disagree with these statements? 1-*Strongly Agree*, 2-*Agree*, 3-*Strongly Disagree*, 4-*Disagree*	Percent Agree or Strongly Agree	Percent Disagree or Strongly Disagree
If someone threatens you, it is okay to hit that person.	43%	57%
It feels good when I hit someone.	23%	77%
If you are afraid to fight, you won't have many friends.	19%	81%
If you fight a lot, everyone will look up to you.	15%	85%
Students who are bullied or teased mostly deserve it.	9%	91%
Bullying is sometimes fun to do.	7%	93%

Note. Cronbach's alpha = .79

Table 2.

Multilevel logistic model results (in odds ratios [OR]) for reporting upstanding behavior versus passive behavior and reinforcing behavior versus passive behavior (overall *n = 28,765* students in 423 schools)

	Upstanding behavior (n = 26,908)				Reinforcing behavior (n = 14,923)			
			95% CI				95% CI	
Variables	*OR*		*LB*	*UB*	*OR*		*LB*	*UB*
School level								
Aggressive Attitudes	0.95	*	0.90	0.99	1.05		0.96	1.16
Percent Free-reduced-price meals	1.41	**	1.11	1.80	1.22		0.77	1.92
Percentage of White students	1.36	***	1.16	1.61	0.80		0.59	1.09
School Size (/100 students)	0.99	**	0.98	<1.00	0.98		0.96	1.01
Student level								
Aggressive Attitudes	0.89	***	0.89	0.90	1.28	***	1.26	1.30
Female	1.05		1.00	1.11	1.12	*	1.01	1.25
7th Grade[1]	1.18	***	1.13	1.24	1.02		0.92	1.13
Black[2]	1.10	*	1.02	1.20	1.82	***	1.55	2.12
Asian[2]	0.94		0.81	1.08	1.48	*	1.08	2.03
Hispanic[2]	1.17	***	1.07	1.27	1.37	***	1.15	1.63
Multiracial or Other[2]	1.26	***	1.17	1.36	1.42	***	1.21	1.67
Parental Education	0.98	*	0.96	<1.00	1.03		0.99	1.08

Notes. FRPM = free or reduced-price meals. [1]Grade 8 is the reference group. [2]White is the reference group. *$p < .05$, **$p < .01$, *** $p < .001$.

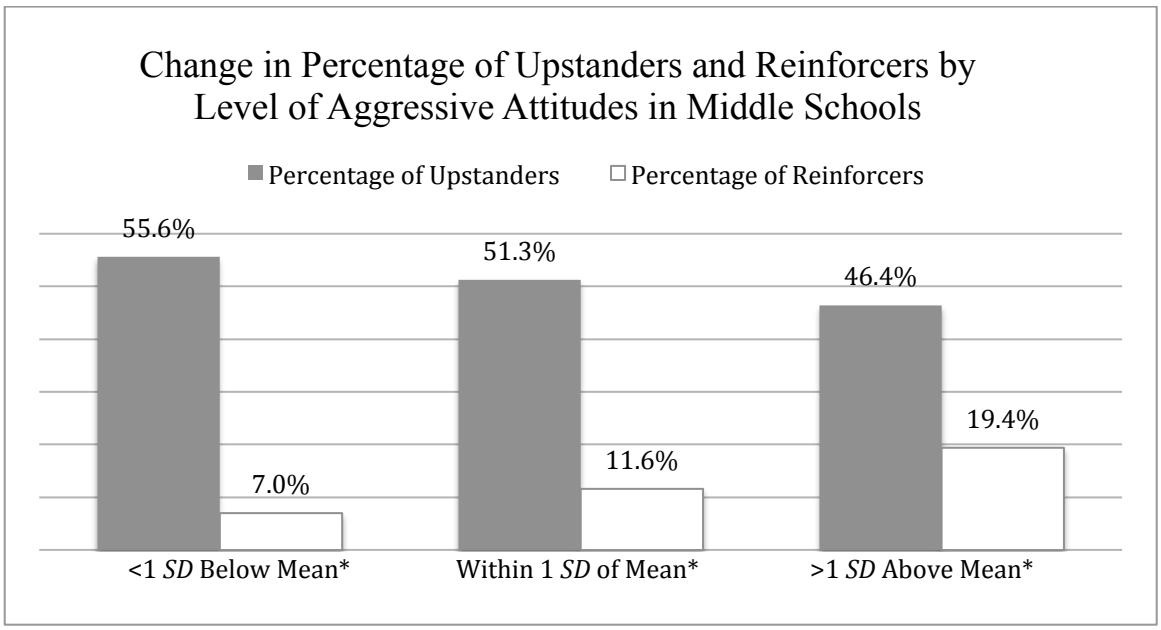

Figure 1. Change in percentage of upstanders and reinforcers by level of aggressive attitudes in middle schools. Mean percentages of upstanding and reinforcing behaviors were significantly different at each level (*$p < .001$).

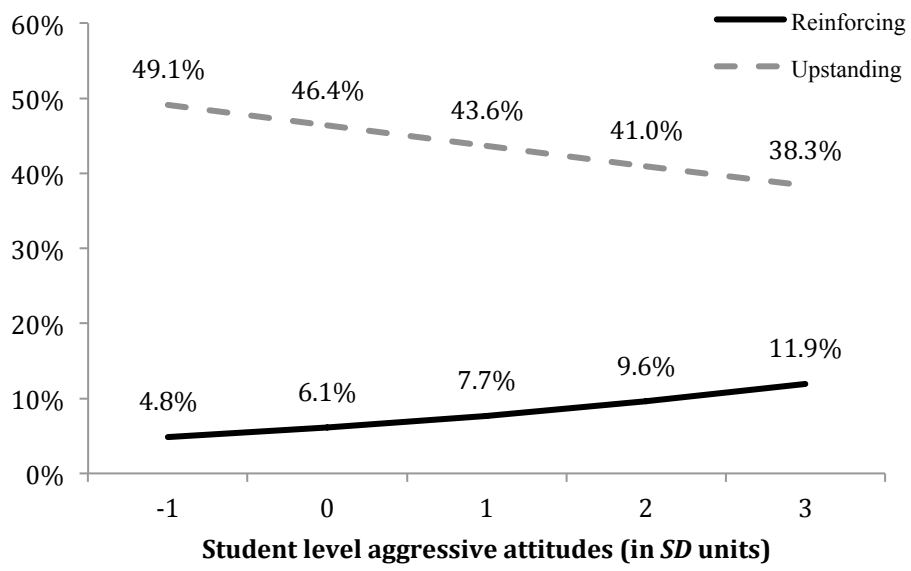

Figure 2. Predicted probabilities of engaging in upstanding or reinforcing behavior. For White males in grade 8 in schools with average levels of aggressive attitudes ($M = 0$).

Manuscript Two

The Toxicity of Bullying by Teachers and Other School Staff

Pooja Datta and Dewey Cornell

Curry School of Education, University of Virginia

Francis Huang

College of Education, University of Missouri

In press, *School Psychology Review*

Author note

Pooja Datta, Curry School of Education, University of Virginia; Dewey G. Cornell, Curry School of Education, University of Virginia; Francis L. Huang, College of Education, University of Missouri.

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Correspondence concerning this article should be addressed to Pooja Datta, School of Education, University of Virginia, 205 Ruffner Hall, Charlottesville, VA 22903. E-mail: pd8tb@virginia.edu

Abstract

Although the toxic effects of peer bullying among middle school students are widely recognized, bullying by teachers and other school staff has received little attention. This study compared the prevalence and school adjustment of students bullied by teachers/staff, students bullied by peers, and students who were not bullied. The sample consisted of 56,508 students in grades 7 and 8 who completed a statewide school climate survey. Students were classified into four groups: (1) not bullied (87.2%), (2) bullied only by peers (9.3%), (3) bullied only by teachers/staff (1.2%), and (4) bullied by peers and teachers/staff (1.5%). In comparison to students who reported no bullying, students bullied by teachers/staff were significantly more likely to report lower school engagement and self-reported grades, and more negative perceptions of school climate. Students bullied only by peers reported more distress symptoms than those bullied by teachers/staff. These findings call for more attention to the problem of teacher/staff bullying.

Keywords: bullying prevalence, teacher bullying, school adjustment

The Toxicity of Bullying by Teachers and Other School Staff

There is considerable evidence that bullying victimization by peers is linked to lower school engagement (DiPerna, 2006), decreased academic achievement (Eisenberg, Neumark-Sztainer, & Perry, 2003; Vaillancourt et al., 2013), and poorer mental health (Benedict, Vivier, & Gjelsvik, 2015). However, bullying by teachers and other school staff is a less widely recognized problem (Zerillo & Osterman, 2011). A goal of this study is to assess prevalence rates of bullying by teachers and other school staff members. Although students spend the majority of their time with teachers, they could experience bullying by other school staff members, such as school administrators or counselors. There has been little research on the prevalence of this form of bullying or its impact on academic and social-emotional adjustment.

Bullying in school is generally defined as repeated, intentional acts of aggression directed towards a student who has less status or power (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2013; Olweus, 2003). Typically, research on bullying has focused narrowly on bullying between students; however, there is research on bullying in the workplace, where it is recognized that supervisors can abuse their authority and bully their supervisees (Samnani & Singh, 2015). Similarly, teachers and other school staff can abuse their authority and bully their students (Zerillo & Osterman, 2011). Teachers and other adults in school have legitimate power over students and they can be expected to criticize and discipline them in appropriate situations. Accordingly, Twemlow and colleagues (2006) defined teacher bullying as actions "to punish, manipulate or disparage a student beyond what would be a reasonable disciplinary procedure" (p. 191). For example, physical forms of teacher bullying could include grabbing or shaking a student,

and verbal bullying could involve insulting or ridiculing a student. Several authorities have asserted that bullying by teachers presents a serious problem that is readily recognized by students (McEvoy, 2005; Whitted & Dupper, 2008). In a study of elementary school students, teachers identified bullying by their colleagues as a serious problem with potential for substantial harm to students (Zerillo & Osterman, 2011).

Several large-scale studies report prevalence rates for bullying by peers but make no mention of bullying by teachers or other staff members. Rates of bullying by students range from 17% to 25% among students in the United States (Lessne & Cidade, 2015; Nansel et al., 2001). The failure to assess bullying by school personnel is a potentially important gap in the assessment of bullying. Moreover, research on anti-bullying programs is concerned with changes in the rates of bullying by students and gives little or no attention to bullying by teachers or other adults in a school (Ttofi, Farrington, Losel, & Loeber, 2011).

A few studies have begun to investigate bullying by teachers (Brendgen, Wanner, & Vitaro, 2006; Khoury-Kassabri, 2006; Pottinger & Stair, 2009; Twemlow et. al, 2006). Twemlow and colleagues (2006) reported that 45% of elementary teachers admitted to bullying a student at least once in their teaching career. Delfabbro and colleagues (2006) found that almost 13% of students reported they were often victimized by peers, 11% reported they were often victimized by teachers, and 1.4% reported both types of victimization at school.

Academic and Social-emotional Adjustment

There is substantial evidence that that there may be important differences between bullying by teachers/staff members versus peers. Victims of student bullying experience a

decline in academic engagement and achievement (Juvonen, Graham, & Schuster, 2003; Juvonen, Wang, & Espinoza, 2011; Nansel et al., 2001). The consensus across studies is that bullying may cause students to become disengaged from school, leading to poor achievement (DiPerna, 2006; Finn & Rock, 1997; Lacey, Cornell, & Konold, 2015). Mehta and colleagues (2013) found that ninth grade students were less engaged in school and less involved in school activities in schools where bullying was more prevalent. From a secondary school sample, victims of peer bullying reported lower grades in comparison to non-victims (Glew, Fan, Katon, & Rivara, 2008; Juvonen et al., 2011). In a sample of 1,526 sixth grade students, Wang and colleagues (2014) found that peer victimization remained significantly related to lower student reported grades after controlling for school climate scores and demographic covariates. Bullying by teachers may have a similar effect on engagement and achievement because students are working for their teachers. Students who resent their teachers for bullying them understandably might be less inclined to work hard for them and earn good grades.

Previous studies have found an association between the prevalence of bullying by peers and two key elements of school climate: disciplinary structure and student support (Konold et al., 2014). It seems likely that teacher bullying may poison a student's perceptions of school leading to a generally negative view of school climate. Disciplinary structure refers to the idea that school rules are strict but fair. Student support refers to perceived supportiveness of teacher-student relationships. Research has shown that students are more likely to demonstrate prosocial behavior when they perceive their school's policies to be supportive and respectful (Daly, Finnigan, Moolenaar, & Che, 2014; Eccles et al., 1993; Shirley & Cornell, 2014). Student perceptions of teacher

fairness are associated with positive adolescent development, prosocial behavior, and academic success (Daly et al., 2014; Eccles et al., 1993). Further, students who perceive their school climate as punitive have more strained relationships with adults in the school (Daly et al., 2014). Based on these observations, it seems plausible that students who are bullied by teachers would develop a negative view of their school and in particular that they would perceive discipline as unfair and their teachers as unsupportive.

When bullied by peers, students show high levels of social and emotional distress (Delfabbro et al., 2006). It is conceivable that students bullied by teachers or other school personnel would feel similarly isolated, anxious, and sad. However, students bullied by adults may experience distress that is different from being bullied by peers because of the authority that adults have in the school and the expectation that they will be fair and just in their interactions with their students. Several studies have found different effects for students who were bullied by teachers versus peers; for example, students who reported bullying by teachers had lower levels of social-emotional adjustment (Monsvold et al., 2011; Pottinger & Stair, 2011). In contrast, an Australian study (Delfabbro et al., 2006) of 1,284 tenth grade students from 25 schools found that students who reported bullying by peers characteristically showed higher levels of social alienation and lower self-esteem than those bullied by teachers. Students bullied by teachers exhibited lower school engagement and academic performance, as well as more involvement in high-risk behaviors. The results of this study suggest that there may be important differences between students who are bullied by teachers as opposed to peers. The study did not examine the adjustment of students who were bullied by both teachers and students.

Demographic Correlates of Bullying

There is substantial evidence that students experience bullying differently across gender (Sentse, Kretschmer, & Salmivalli, 2015), socioeconomic status (SES; Tippett & Wolke, 2014), and minority status (Wang et al., 2014). In comparison to girls, boys were more likely to experience bullying by teachers and peers (Delfabbro et al. 2006); however, the effect size was small and did not differentiate between gender and bullying by peers versus teachers. In general, SES was found to be a stronger predictor of bullying by peers in comparison to bullying by teachers, but students from lower SES homes experienced more of both peer and teacher bullying than students from higher SES homes (Delfabbro et al. 2006). There are mixed findings concerning the prevalence of bullying by teachers experienced by minority students in contrast to White students. Some studies have found that Black and Asian students experience greater peer victimization (Schumman, Craig, & Rosu, 2013; Wang, Iannotti, and Nansel, 2009), while others report lower levels of peer victimization (Eslea & Mukhtar, 2000; Larochette, Murphy, & Craig, 2010).

Present Study

Peer bullying has been identified as one of the most important problems faced by middle school students because it has widespread effects on student engagement in school and overall school adjustment (Glew et al., 2008; Juvonen et al., 2011). In contrast, bullying by teachers has received relatively little attention. In light of the need for research on bullying by teachers, this study examined two central questions: (1) What is the prevalence of bullying by teachers[2] in comparison to the prevalence of bullying by peers in in a large statewide middle school sample? and (2) How does the school

[2] For brevity, we use 'teachers' to indicate both teachers and other school staff.

adjustment of students bullied by teachers compare to the adjustment of students who are not bullied and who are bullied by peers? Overall school adjustment was measured in both academic and social-emotional domains. In the academic domain, we hypothesized that bullying by teachers would be associated with less student engagement in school, lower academic grades, and more negative perceptions of school climate along the dimensions of disciplinary structure and student support. In the social-emotional domain, we hypothesized that bullying by teachers would be associated with more symptoms of distress such as reports of sadness, anxiety, and suicidal ideation in comparison to students who were not bullied. Furthermore, we hypothesized greater distress would be associated with students bullied only peers in comparison to those only bullied by teachers, similar to prior studies (Delfabbro et al. 2006).

This study analyzed student surveys completed by a statewide sample comprised of 56,508 grade 7-8 students in 415 middle schools (sixth grade students were not included in this state survey). Like other cross-sectional surveys of bullying, we can investigate correlates of bullying but not demonstrate a causal effect of bullying on school adjustment. Nevertheless, we can compare self-reported rates of peer and teacher/staff bullying and show whether some commonly identified correlates of peer bullying are also observed for teacher/staff bullying.

Method

Participants

The sample consisted of 56,508 7^{th} and 8^{th} grade students who completed the State Secondary School Climate Survey as part of the state's annual school safety audit program (Cornell et al., 2015). The school participation rate was approximately 93%,

based on 415 of 430 eligible public schools. High participation rates were achieved with the endorsement of the Virginia Department of Education and the Virginia Department of Criminal Justice Services. The University of Virginia Institutional Review Board approved the study and survey questions.

All students were eligible to participate in the study, except for those with limited English proficiency or an intellectual or physical disability that would prevent them from completing the survey. Schools received the option to (a) invite all 7th and 8th graders to participate in the study (whole grade option; 169 schools) or (b) randomly select 25 students from each grade to participate (random sample option; 218 schools). For schools that chose the random sample option, principals were given instructions for selecting 25 students per grade using a random number list customized to grade enrollment size. Principals marked the main reasons for nonparticipation, which included student absence because of illness, the parent declining participation, or a scheduling conflict (for more information, see Cornell et al., 2015). There were a total of 60,695 students who participated in the survey (overall participation rate approximately 80.5%).

To improve data quality, 4,187 (6.9%) surveys were excluded for two reasons: (1) completion time was lower than a previous empirically determined cutoff of approximately seven minutes (0.8%) and (2) students reported not answering truthfully according to two validity screening items (6.1%; see Validity screening items below). The time cutoff was derived from examination of the distribution of response times on prior administrations of this survey (Cornell et al., 2013). Students who completed the survey rapidly (i.e., less than seven minutes) were found to be statistically anomalous in comparison to other respondents (Cornell et al., 2013). Additionally, reviewers instructed

to complete the survey as quickly as possible found that it was highly improbable to read and complete the survey below this time limit. The final weighted analytic sample included all valid responses from 56,508 students, of which 27,300 (48.3%) were girls and 28,254 (50%) were in the seventh grade. Approximately 15.8% of students identified themselves as Hispanic or Latino ethnicity. The racial breakdown was 49.4% White, 18.1% Black, 6.8% Asian, 2.2% American Indian or Alaskan Native, 1.0% Native Hawaiian or Pacific Islander, and 22.5% multiracial. The distribution of parental education was 27.3% completed post-graduate studies, 26.8% completed a four-year college degree, 13.4% completed a two-year college or technical education degree, 24.9% graduated from high school, and 7.5% did not graduate from high school. The distribution for family structure was 73.7% two-parent household, 24.8% one-parent household, and 1.5% no-parent household.

Measures

Students completed surveys under the supervision of school staff using standard instructions. The surveys were administered anonymously online using Qualtrics software. The surveys consisted of approximately 110 questions about school climate characteristics such as student engagement, student support, and student demographics (for more information, see Cornell et al., 2015). The survey was programmed to require participants to answer each question before proceeding to the next page (with the exception that students who reported no victimization were not asked the distress questions about their reaction to being victimized). Student participation was voluntary and students could refuse to complete the survey at any time.

Validity screening items. There were two validity-screening items. The first item, "I am telling the truth on this survey" had four response options: *strongly disagree*, *disagree*, *agree*, and *strongly agree*). Students who answered *strongly disagree* or *disagree* were excluded from the sample. The second item was "How many of the questions on this survey did you answer truthfully?" This item had five response options: *all of them*, *all but 1 or 2 of them*, *most of them*, *some of them*, and *only a few or none of them*. Students who answered *some of them* or *only a few or none of them* were omitted from the sample. The use of validity screening questions has been shown to improve the quality of adolescent survey data (Cornell, Klein, Konold, & Huang, 2012; Cornell, Lovegrove, & Baly, 2014; Jia, Konold, Cornell, & Huang, 2016).

Bullying. To measure levels of bullying by peers and teachers, students were first given a description of bullying derived from the widely adopted Olweus (1996) definition.

> Bullying is the repeated use of one's strength or popularity to injure, threaten, or embarrass another person on purpose. Bullying can be physical, verbal, or social. It is not bullying when two students who are about the same in strength or popularity have a fight or argument.

Students were also provided with a definition of bullying by teachers consistent with prior studies (Twemlow & Fonagy, 2005; Twemlow, Fonagy, Sacco, & Brethour Jr., 2006), "A teacher or other adult at school bullies a student by repeatedly punishing or criticizing a student unfairly. This goes beyond what is normal discipline in the school." Students were then asked to complete general bullying questions: (1) "I have been bullied at school this year [since school started last fall]" and (2) "I have been bullied by teachers or other adults at school this year." Each item was answered on a four-point Likert-scale (1 = *never*, 2 = *once or twice,* 3 = *about once per week,* and 4 = *more than once per*

month). The peer-bullying question has been used in a series of validation studies (Baly & Cornell, 2011; Baly, Cornell, & Lovegrove, 2014; Branson & Cornell, 2009; Huang & Cornell, 2015). As per Solberg and Olweus (2003), if students were bullied once per week or more, students were classified as bullied (1 = *yes*) or not (0 = *no*) by students and teachers. Based on the classification, students were identified as not bullied, bullied by students, bullied by teachers, or bullied by both students and teachers.

Engagement. Student engagement in school was measured with a six-item scale (see Table 1; Konold et al., 2014). Previous research has conceptualized engagement as having both cognitive (investment in learning) and affective (attachment and pride in school) components (Appleton, Christenson, & Furlong, 2008). In previous studies, this scale was negatively associated with student reports of the prevalence of teasing and bullying in school (Mehta, Cornell, Fan, & Gregory, 2013). Konold et al. (2014) found support for the factor structure and concurrent validity of a six-item version of this scale in a sample of middle school students. Three items measured affective engagement (e.g. "I am proud to be a student at this school") and three items measured cognitive engagement (e.g. "I want to learn as much as I can at school"). The answer choices for these items were on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Both academic engagement (.92) and cognitive engagement (.78) alphas were calculated using polychoric correlations (Bland & Altman, 1997; Gadermann, Guhn, & Zumbo, 2012).

Student reported grades. A survey item asked, "What grades did you make on your last report card?" The seven response options ranged from 1 (*mostly A's*) to 7 (*mostly D's and F's*). Student responses were recoded to approximate the standard four-

point metric for grade point average calculated by schools (GPA; *M* = 3.25, *SD* = 0.74). Students with *mostly A's* had a 4, *mostly A's and B's* had a 3.5, *mostly B's* had a 3, and so on, with a response of *mostly D's and F's* scored as a 1.

Disciplinary structure. Perceived fairness and strictness of school discipline was measured with a seven-item scale (see Table 1; Konold et al., 2014). Each item was answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Representative items included, "The adults at this school are too strict" and "Students are treated fairly regardless of their race or ethnicity" (range = 5-20). The disciplinary structure scale yielded an alpha value of .80.

Student support. Supportiveness of teacher-student relationships was measured with an eight-item scale. Konold et al. (2014) demonstrated psychometric support for this scale through multilevel confirmatory factor analysis. Representative items included "Most teachers and other adults at this school want all students to do well" and "There are adults at this school I could talk with if I had a personal problem" (range = 8-32). The student support scale yielded an alpha value of .89.

Distress in response to victimization. Social-emotional adjustment was measured with a five-item scale (see Table 1 for items) answered on a four-point Likert scale (1 = *not true*, 2 = *a little true*, 3 = *somewhat true*, to 4 = *definitely true*; range = 5-20, coefficient alpha = .86). Students were answered the statements with the following prompt, "You have just answered some questions about being teased or bullied in some way. Think about the worst time that this happened to you at school this year. How did it affect you?" The five items encompassed symptoms that are commonly identified as reactions to bullying (Nishina, Juvonen, & Witkow, 2005; Olweus, 1978; O'Sullivan &

Fitzgerald, 1998; Rigby, 2002) ranging from statements such as, "I didn't want to come back to school" to "I felt so badly, life did not seem worth living" (see Table 1). The questions were only answered by students who endorsed yes to being victimized or threatened by peers or their teachers, reducing the sample size for some analyses. The distress scale had an alpha value of .92.

Covariates. The analyses controlled for student demographic variables obtained from the survey, which included gender, race/ethnicity, and SES (represented by parent educational level and number of parents in the home). Students were asked to report the highest educational level attained by either parent (1 = *did not graduate from high school*, 2 = *graduated from a high school*, 3 = *graduated from a two-year college or technical school*, 4 = *graduated from a four-year college*, 5 = *completed post-graduate studies*). The number of parents in the home was used as an additional indicator of SES (NCES, 2012; Sirin, 2005): "How many parents live with you? Include biological and adoptive parents" (1 = *two parents*, 2 = *one parent*, and 3 = *no parents*).

Analytic Strategy. We calculated correlations among all study variables (see Table 2). Students were classified into four groups (not bullied, peer bullied, teacher bullied, and both peer and teacher bullied). Multiple regression was used to investigate the association of bullying victimization with six dependent variables of academic and social-emotional adjustment: (1) affective engagement, (2) cognitive engagement, (3) student reported grades (approximation of GPA), (4) perceived disciplinary structure, (5) perceived student support, and (6) distress in reaction to victimization. School fixed effect (FE) models were included in order to account for the nested structure of the data and explain variability associated with school-level clustering (Huang, 2016). The FE

models were appropriate because we were interested primarily in student-level results and FE models accounted for all variability at the school level resulting from all observed and unobserved variables at the cluster level (Murnane & Willett, 2010). In all analyses, normalized weights, based on the inverse of the students' probability of being selected at the school, were used to account for the uneven selection probabilities of a student being chosen as a result of the sampling mechanism used by the school principal. In addition, cluster robust standard errors were used (Cameron & Miller, 2015). All regression models controlled for gender, race/ethnicity, and number of parents using dummy-coded variables with White males from two parent homes serving as the reference group. Parental education was entered as a continuous variable.

Bullying victimization status, the main independent variable of interest, was entered using three dummy-coded variables with students who were not victimized serving as the reference group. However, for the model that had student distress as the response variable (n = 7,933), only two dummy codes were used, with students victimized by peers serving as the reference group. To compare differences between the dummy-coded groups, we used a *z* test where $z = (B_1 - B_2) / (\text{sqrt}(SE_1^{2+} SE_2^2)$; B_1 and B_2 were the regression coefficients of interest and SEs were the corresponding standard errors.

Due to the dependent variables having different measurement scales, in order to facilitate comparison between models, we standardized the dependent variables (M = 0, SD = 1). As a result of the standardization, regression coefficients for dummy-coded variables represent standardized mean differences (or Cohen's *d*), which can be interpreted based on Cohen's (1988) effect size guidelines (i.e., 0.20 = small, 0.50 =

moderate, 0.80 = large) in comparison to the reference group. No missing data were present because participants were required to answer every question with the exception of the distress variables (students who reported no victimization were not asked about their reaction to being victimized). All data management and analyses were done using R (R Core Team, 2014) and the lfe package for fixed effect models (Gaure, 2013).

Results

Our first research question focused on the prevalence rates of teacher and peer bullying victimization. Descriptive analyses yielded four distinct groups of students: not bullied (49,291 students; 87.2%), bullied only by teachers (1,098 students; 1.9%), bullied only by peers (5,275 students; 9.3%), and bullied by both peers and teachers (842 students; 1.5%). There were a total of 1,940 students (3.4%) who reported being bullied by teachers.

Although our primary interest was teacher/staff and peer bullying, there was some variation across student demographic groups (see Table 3). There were statistically significant differences in bullying rates between boys and girls; when reporting bullying by peers, boys endorsed more bullying then girls, χ^2 (1) = 14.92, p = .033, and girls reported more bullying by teachers than boys, χ^2 (1) = 25.49, p = .002. Statistically significant differences in grade level were found for bullying by peers but not for teacher bullying, χ^2 (1) = 2.32, p = .353. Students in the 7th grade reported more bullying by peers than 8th grade students, χ^2 (1) = 25.76, p = .007. There were also statistically significant differences in bullying rates of White versus minority students; White students reported more bullying by peers, χ^2 (1) = 67.74, p < .001, and minority students reported more bullying by teachers, χ^2 (1) = 95.63, p < .001. However, given the statistically significant

findings, the differences were not large and no more than two percentage points (e.g., 10.4% of White students reported bullying by peers compared to 8.4% of minority students). There were also no statistically significant differences when comparing the two types of bullying and level of parental education, a proxy for socioeconomic status.

School Adjustment by Victimization Experience

Six regression models investigated the academic and social-emotional adjustment of students bullied by teachers, students bullied by peers, and students who were doubly victimized (i.e., bullied by peers and teachers). As an initial modeling step, intraclass correlation coefficients (ICCs) measured how much the dependent variable varied as a result of clustering. ICCs were low to moderate for all measures: engagement-cognitive (.04), engagement-affective (.12), GPA (.12), disciplinary structure (.10), student support (.07), and distress (.02). The size of the ICCs indicated that clustering was important to account for in the succeeding models, which was accomplished using fixed effects models (Huang, 2016) and cluster robust standard errors (Cameron & Miller, 2015). As a modeling strategy, we included all covariates in one step, and then we added the victimization dummy-coded variables in a second step. Running the model using two steps showed how much the model R^2 changed with the inclusion of the victimization variables, which was the difference between R^2full and R^2reduced (see Table 4). As standard R^2s are known to have an upward bias and increase with the addition of model predictors, adjusted R^2s are presented (Yin & Fan, 2001).

Including only covariates in the models, R^2 ranged from .09 for cognitive engagement to .23 for GPA. The inclusion of the victimization variables increased R^2 from .09 for student support to .24 for distress, which were statistically significant for all

models. Although the regression models tested differences between the victimized students and the reference group of non-bullied students, we also compared differences in regression coefficients (e.g., to test whether the coefficients of student- and teacher-victimized students had differences from each other that were statistically significant). Figure 1 shows the effect sizes with 95% confidence intervals for each type of bullying (excluding distress) and Table 5 shows test statistics of the comparisons. Common to all regression models (see Table 4) was that victims of bullying, regardless of whether victimized by a student, teacher, or both, reported poorer school adjustment than students who were not victimized (all p's < .001).

Academic adjustment. Academic adjustment refers to a set of academic and school climate outcomes measured by student engagement, student-reported grades, disciplinary structure, and student support. For the academic adjustment variables, the absolute value of effect size measures for the group that was bullied by both students and teachers ranged from 0.34 (for GPA) to 1.14 (for student support). The average effect size comparing those doubly victimized with those who were not victimized was 0.81. On average, students bullied by teachers had worse academic adjustment compared to non-bullied students, with an average effect size of d = 0.61. In comparison, students bullied only by peers had worse adjustment than non-bullied students with a weighted average effect size of d = 0.26.

In comparison to White students, Black students reported lower affective engagement, GPA, structure, and support. In comparison to non-Hispanic students, Hispanic students reported lower cognitive engagement, GPA, and perceived disciplinary structure. In comparison to White students, Asian students reported higher academic

adjustment. In comparison to boys, girls reported higher affective engagement. On the other hand, girls reported considerably lower cognitive engagement and GPA. In comparison to 8th grade students, 7th grade students reported better academic adjustment. In general, students from higher SES households had more favorable adjustment (with the exception of perceived disciplinary structure). In comparison to students living in households with two parents, students from single-parent households reported consistently lower academic adjustment on all dependent variables. Students not living with their parents reported the lowest academic adjustment on all dependent variables.

Social-emotional adjustment. Students victimized by both students and teachers had higher levels of distress than students bullied only by peers ($d = .18$, $p < .01$). In contrast, students who were bullied only by teachers had lower levels of distress ($d = -.74$, $p < .001$) than students bullied only by peers. This pattern was displayed across the individual items of the distress measure (see Figure 2). On all five items, students bullied only by peers had consistently higher levels than students only bullied by teachers.

In comparison to boys, girls reported greater distress. In comparison to White students, Black students endorsed less distress than the other racial/ethnic groups. No differences were observed between Asian and White students or between 7th and 8th grade students. Students from higher SES households reported lower levels of distress.

Discussion

This study contributes to a nascent literature on the often-overlooked problem of bullying by teachers and other school personnel. Studies of the prevalence of bullying routinely ask about peer bullying and ignore teacher/staff bullying. Consequently, current anti-bullying efforts neglect teacher bullying and fail to make it a target of intervention.

Although teacher bullying is not as prevalent as student bullying, it affects a substantial number of students. Students who report being bullied by their teachers or other adults in school experience lower school adjustment that differs in important ways from students who report being bullied by their peers. Students who are victims of both forms of bullying appear to be most at risk for lower academic adjustment and higher distress compared to their classmates.

The first research question concerned the prevalence of bullying by teachers versus peers. Overall, the survey revealed that approximately 3.4% of students reported being bullied by a teacher or other school staff member. Although this rate is lower than the 10.8% rate of students who reported being bullied by peers, it is not negligible. A survey that focused only on peer bullying would have overlooked this form of bullying. The relatively small portion of our total sample (1.2%) who reported bullying by both teachers and peers is similar to Delfabbro and colleagues (2006), who found that just 18 students of 1,284 students (1.4%) reported being bullied by both teachers and peers.

School Adjustment

Students bullied by teachers were significantly more likely to report lower affective engagement, cognitive engagement, grade point average, and perceptions of school climate structure and support in comparison to students who reported no bullying. Students bullied by their teachers may be more likely to hold a tainted view of their school climate, viewing school discipline as unfair and their teachers or other adults in their school as unsupportive. They are less likely to be engaged academically or take pride in their school, and they have a lower GPA. These findings are consistent with Delfabbro's conclusion that bullying by teachers was associated with poorer engagement

and achievement in schools. Not surprisingly, students bullied only by teachers held a substantially more negative perception of their school climate, with respect to perceived student support and disciplinary structure. Although bullying by peers held a significant negative association with these factors, the effect sizes associated with bullying by teachers are substantial and concerning. It is possible that bullying by teachers contributes to a toxic school climate for the student and fosters feelings of discontentment and disengagement about school. Research has consistently found that school climates are an important foundation for effective learning (Piscatelli & Lee, 2011); teachers and supporting school staff, such as school psychologists, aid in setting the stage for nurturing and structured school climates.

Another finding was that students bullied only by peers reported more distress symptoms than those bullied solely by teachers. These results are consistent with another study where students who reported bullying by peers showed higher levels of social alienation and lower self-esteem than those bullied by teachers (Delfabbro et al., 2006). It is conceivable that students felt more distress when negatively evaluated by their peers as opposed to authority figures because peer approval and acceptance is so important to adolescents. Students may find it easier to disregard or discount criticisms by adults than their peers (Zimmer-Gembeck, 2016). Research has consistently shown that high levels of internalizing distress are associated with bullying victimization (Malecki et al., 2015; Swearer et al., 2001). Future research could further investigate different forms of distress or behaviors (e.g., suicidal ideation versus anger) associated with teacher bullying in contrast to peer bullying.

The demographic findings show that student reactions to bullying may be complex and influenced by multiple factors. Rates of bullying and school adjustment differed significantly by sex, grade level, racial/ethnic identity, and SES. Unsurprisingly, students from lower SES and minority backgrounds reported disproportionate rates of bullying by both teachers and peers. Furthermore, students from higher SES and two-parent households reported higher and better adjustment (excluding distress) than students of lower SES and single or no parent households.

Overall, 7th grade girls were more likely to experience bullying by peers, whereas 8th grade boys were more likely to experience bullying by teachers. These findings differ from a previous study that found no gender or grade differences when comparing students bullied by teachers or other adults to those bullied by peers (Delfabbro et al., 2006). Further lines of research could investigate gender differences and types of bullying by teachers in a school. For example, it is widely recognized that when bullied by peers, boys experience more physical bullying in comparison to girls experiencing more social exclusion (Gladden et al., 2013). It is possible that similar patterns could exist for boys and girls experiencing different forms of bullying by teachers. Overall, 7th grade students reported better school adjustment with the exception of distress, which was not statistically significant. Although girls appeared to report higher affective engagement, they reported lower levels of academic adjustment and higher levels of distress. Future lines of research could investigate how student demographics interact with the demographics of the teacher who is perceived as bullying.

Limitations

This is a correlational and cross-sectional study that cannot establish causal relationships, so that the findings are open to multiple interpretations. The results suggest that bullying by teachers in middle school is associated with negative school outcomes, but it is possible that the strong association between bullying victimization and negative outcomes is bidirectional; for example, students who are disengaged in school may elicit more negative interactions with their teachers, which could also lead to lower grades and a perception that teachers are not supportive (Limber, 2006; Roth, Coles, & Heimberg, 2002). A longitudinal study that assesses student adjustment before and after the onset of bullying would provide more insight into this process.

Another limitation is the reliance on self-report. Students may be biased to report favorable performance or engagement in schools (e.g. higher academic performance) and correlations may be increased by shared method variance. To limit some forms of response bias, this study used a screening procedure to filter out a small proportion of the sample (<7%). Another limitation is that our measure of student distress was limited to five items and a more comprehensive and longitudinal assessment of social-emotional adjustment is needed. Although there is no gold standard for measuring bullying-related behaviors, researchers have recommended the use of multiple raters when possible (Casper, Meter, & Card, 2015). Future studies could use independent sources of information, such as identifying victims of bullying by peer report, assessing student adjustment with parent evaluations, and measuring student achievement with school records of grades and test performance (Brand et al., 2008; Twemlow et al., 2006).

A particular concern in this study is the use of student self-reports of teacher bullying that are not confirmed by other independent sources. School psychologists may find that in some cases a student might perceive himself or herself to be a victim of bullying when the teacher had a different perception. The student's perception is valuable to recognize because whether it is correct or incorrect, it could lead to negative effects. However, in individual counseling it is important to assess the validity of the student's report. This may require classroom observation and consultation with others who have observed teacher-student interactions. Multiple methods of report may also improve upon the evolving definition of teacher bullying. When a student has clearly misperceived a teacher's response to a student, it is valuable to help the student understand what has occurred and to resolve the misunderstanding that may damage the student's ability to learn from this teacher. School psychologists could provide greater consultation for teachers to foster overall positive interactions with their students, in lieu of using bullying as a focal subject for intervention. Interventions would include focusing on positive ways of interacting with students and delivering criticism that is encouraging rather than disparaging. For instance, teachers may resort to bullying when under significant stress to manage their classroom (Zerillo & Osterman, 2011) and from the mistaken belief that a tough approach will motivate their students to work harder. Future research should examine specific instances of teacher bullying and whether other teachers and school staff regard the actions as bullying, which may include exploring reasons that some students may be bullied by their teachers as opposed to being bullied their peers.

Prospective longitudinal research designs would also be able to demonstrate short-term and long-terms effects of bullying by teachers. Lastly, another limitation is

that the sample only included seventh- and eighth-grade students from a single state. Assessment across more grades is needed. Although the sample was confined to one state, it included urban, suburban, and rural communities. Most of the prior studies on bullying by teachers or adults in a school have used international samples. There may be national or cultural differences in expectations for teacher-student interactions that should be considered.

Conclusions

Teachers and other adults in a school are integral in establishing a school climate that fosters better academic performance and social relationships (Twemlow et al., 2006). The notion that teachers or school staff may bully students and treat them unfairly is a delicate topic to broach. There are several school programs geared towards improving teacher-student relations and could address teacher bullying (Zerillo & Osterman, 2011). School-based efforts such as School-Wide Positive Behavioral Interventions and Supports (SWPBIS) have been found to improve learning conditions for both teachers and students (Bradshaw, Mitchell, & Leaf, 2010; Sugai & Horner, 2006). SWPBIS uses a number of key practices that improve teacher-student interactions by targeting staff behaviors: clearly defining behavioral expectations, proactively teaching what those expected behaviors look like in various school settings, rewarding students for compliance with behavioral expectations, and providing clear and fair consequences for behavioral violations. Several randomized control trials have shown the impact of SWPBIS training on reducing student disciplinary referrals and increasing academic achievement.

Similarly, a professional development program such as My Teaching Partner – Secondary aims to improve teacher-student interactions by enhancing emotional, organizational, and instructional supports (Gregory, Allen, Mikami, Hafen, & Pianta, 2015). In this program, coaches review videos of teachers in their classrooms and give them constructive feedback for managing teacher-student interactions, which result in improved behavior and engagement by their students (Allen, Pianta, Gregory, Mikami, & Lun, 2011). In particular, classroom coaching has emerged as a promising strategy to improve teacher-student relationships and interactions and could lead to reductions in disproportionate discipline and improved academic achievement (Gregory et al., 2014).

In summation, our study brings attention to a frequently neglected aspect of school bullying. Overall, the negative associations of bullying by teachers are comparable to bullying by peers. Most notably, students who experienced bullying by both teachers/staff and peers reported the worst school adjustment outcomes with respect to academic adjustment, perceptions of school climate, and distress. Results of this study provide areas for further inquiry on bullying by teachers and other school staff. Efforts to reduce bullying in schools should encompass all forms of bullying, including those exhibited by adults in a school. Teachers and other school personnel set an example in how they manage their classrooms and promote a more tolerant and respectful school community (Guimond, Brendgren, Dionne, Vitaro, & Boivin, 2015; Jennings & Greenberg, 2009).

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Table 1.

Descriptives for Survey Scales

Items	*M* (*SD*)	Cronbach's alpha
Academic engagement scale (3 items)	8.9 (2.0)	.92
Cognitive engagement scale (3 items)	10.1 (1.6)	.78
Disciplinary structure scale (7 items)	18.5 (3.0)	.80
Student support scale (8 items)	24.2 (4.4)	.89
Distress in response to victimization (5 items)	9.9 (4.6)	.92
It bothered me a lot.	2.2 (1.2)	--
I felt sad about it.	2.0 (1.2)	--
I felt angry about it.	2.4 (1.2)	--
I didn't want to come back to school.	1.8 (1.6)	--
I felt so badly, life did not seem worth living.	1.5 (1.0)	--

Note. All ns = 56,508 except for distress which only included bullied students, n = 7,933.

Table 2.

Correlation Matrix for Study Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12
1. Female	-											
2. 7th Grade	<-.00	-										
3. White	<-.00	.02*	-									
4. Parental Education	-.04*	-.01*	.15*	-								
5. Parents in Household	.04*	.01*	-.15*	-.20*	-							
6. Affective Engagement	-.04*	-.11*	.08*	.11*	-.11*	-						
7. Cognitive Engagement	.10*	-.05*	.01*	.18*	-.11*	.33*	-					
8. Student Reported Grades	-.13*	.03*	-.16*	.02*	.20*	-.19*	-.40*	-				
9. Disciplinary Structure	-.02*	-.09*	.05*	.02*	-.07*	.46*	.26*	-.07*	-			
10. Student Support	-.01*	-.09*	.06*	-.11*	-.11*	.58*	.42*	-.17*	.57*	-		
11. Distress	.22*	-.01*	.01*	-.05*	.05*	-.15*	-.01*	.05*	-.09*	-.10*	-	
12. Bullying by Peers	.02*	-.02*	.03*	-.01*	.03*	-.17*	-.06*	.07*	-.13*	-.15*	.40*	-
13. Bullying by Teachers	-.02*	.01*	-.04*	.01*	.04*	-.16*	-.09*	.08*	-.18*	-.21*	.12*	.20*

Note. *$p < .01$

Table 3.

Cross-tabulations of Student Demographic Variables and Type of Bullying (n = 56,508)

	Bullied by peers only						Bullied by teachers only					
	No		Yes				No		Yes			
	n	Row %	*n*	Row %	χ^2	*p*	*n*	Row %	*n*	Row %	χ^2	*p*
Gender					14.92	.033					25.49	.002
Boys	26,347	90.2	2,860	9.8			28,723	98.3	485	1.7		
Girls	24,885	91.2	2,415	8.8			26,686	97.8	614	2.2		
Grade					25.76	.007					2.32	.353
7th	25,440	90.0	2,813	10.0			27,729	98.1	524	1.9		
8th	25,792	91.3	2,462	8.7			27,680	98.0	574	2.0		
Race					67.74	< .001					95.63	< .001
White	23,406	89.6	2,723	10.4			25,781	98.7	348	1.3		
Minority	27,827	91.6	2,552	8.4			29,628	97.5	751	2.5		
Highest parental education					16.03	.225					11.32	.319
No high school	3,813	90.1	421	9.9			4,161	98.3	74	1.7		
High school	12,686	90.0	1,410	10.0			13,834	98.1	262	1.9		
Two year or technical	6,927	91.2	670	8.8			7,440	97.9	156	2.1		
Four year	13,747	90.7	1,410	9.3			14,893	98.3	265	1.7		
Post-graduate studies	14,060	91.2	1,365	8.8			15,082	97.8	343	2.2		
Total	51,233	90.7	5,275	9.3			55,410	98.1	1,098	1.9		

Notes. Weighted analyses shown. Chi-square statistics adjusted for clustered data (Rao & Scott, 1981).

Table 4.

Linear Regression Coefficients and Standard Errors

	Engagement (Affective)	Engagement (Cognitive)	GPA	Disciplinary Structure	Student Support	Distress[1]
Female	0.077***	-0.197***	-0.269***	-0.000	0.023	-0.514***
	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)	(0.033)
Race/Ethnicity[2]						
Asian	0.070*	0.242***	0.187***	0.059*	0.066*	-0.010
	(0.028)	(0.029)	(0.023)	(0.029)	(0.031)	(0.100)
Black	-0.081***	0.009	-0.283***	-0.196***	-0.065**	-0.151**
	(0.021)	(0.021)	(0.021)	(0.022)	(0.022)	(0.057)
Hispanic	-0.022	-0.064**	-0.251***	-0.116***	-0.036	0.127*
	(0.021)	(0.023)	(0.021)	(0.021)	(0.021)	(0.055)
Other	-0.102***	-0.046*	-0.192***	-0.175***	-0.111***	-0.005
	(0.012)	(0.021)	(0.020)	(0.021)	(0.021)	(0.048)
Grade 7	0.219***	0.081***	0.060***	0.178***	0.176***	0.044
	(0.013)	(0.013)	(0.012)	(0.014)	(0.014)	(0.035)
Parental Education	0.021***	0.111***	0.166***	0.009	0.019**	-0.015*
	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)	(0.013)
One parent[3]	-0.087***	-0.153***	-0.214***	-0.108***	-0.107***	0.029
	(0.015)	(0.017)	(0.016)	(0.016)	(0.016)	(0.036)
No parent[3]	-0.128*	-0.380***	-0.323***	-0.214***	-0.289***	0.177
	(0.055)	(0.055)	(0.056)	(0.054)	(0.057)	(0.099)
Bullied by[4]						
Student (S) only	-0.434***	-0.101***	-0.127***	-0.309***	-0.337***	
	(0.022)	(0.023)	(0.021)	(0.023)	(0.024)	
Teacher (T) only	-0.560***	-0.290***	-0.226***	-1.002***	-0.950***	-0.740***
	(0.054)	(0.052)	(0.047)	(0.054)	(0.054)	(0.051)
Both S & T	-0.931***	-0.488***	-0.342***	-1.143***	-1.135***	0.175**
	(0.067)	(0.070)	(0.059)	(0.052)	(0.060)	(0.055)
ICC	.12	.04	.12	.10	.07	.09
Adjusted $R^2_{reduced}$	.14	.09	.23	.13	.09	.17
Adjusted R^2_{full}	.18	.09	.23	.17	.13	.24

Note. GPA = Approximation of grade point average based on student reported grades. ICC = intraclass correlation. [1]All ns = 56,508 except for distress which only included bullied students, n = 7,933. [2]White is the reference group. [3]Living with both parents is the reference group. [4]Not victimized is the reference group except for Distress where students bullied by peers were the reference group. $R^2_{reduced}$ only includes covariates. All dependent variables are standardized. Weighted analyses are shown and include school fixed effects. Cluster robust standard errors within parentheses. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5.

Pairwise comparisons by victimization status (z-tests shown with Bonferroni adjustments to account for multiple comparisons)

Comparison	Engagement (Affective)	Engagement (Cognitive)	Student-reported GPA	Disciplinary Structure	Student Support
Student vs. Teacher	2.16	3.32 **	1.92	11.81 ***	10.37 ***
Student vs. Both[a]	7.05 ***	5.25 ***	3.43 **	14.67 ***	12.35 ***
Teacher vs. Both[a]	4.31 ***	2.27	1.54	1.88	2.29

Note. [a]Both means bullied by both teacher and student. ** $p < .01$. *** $p < .001$.

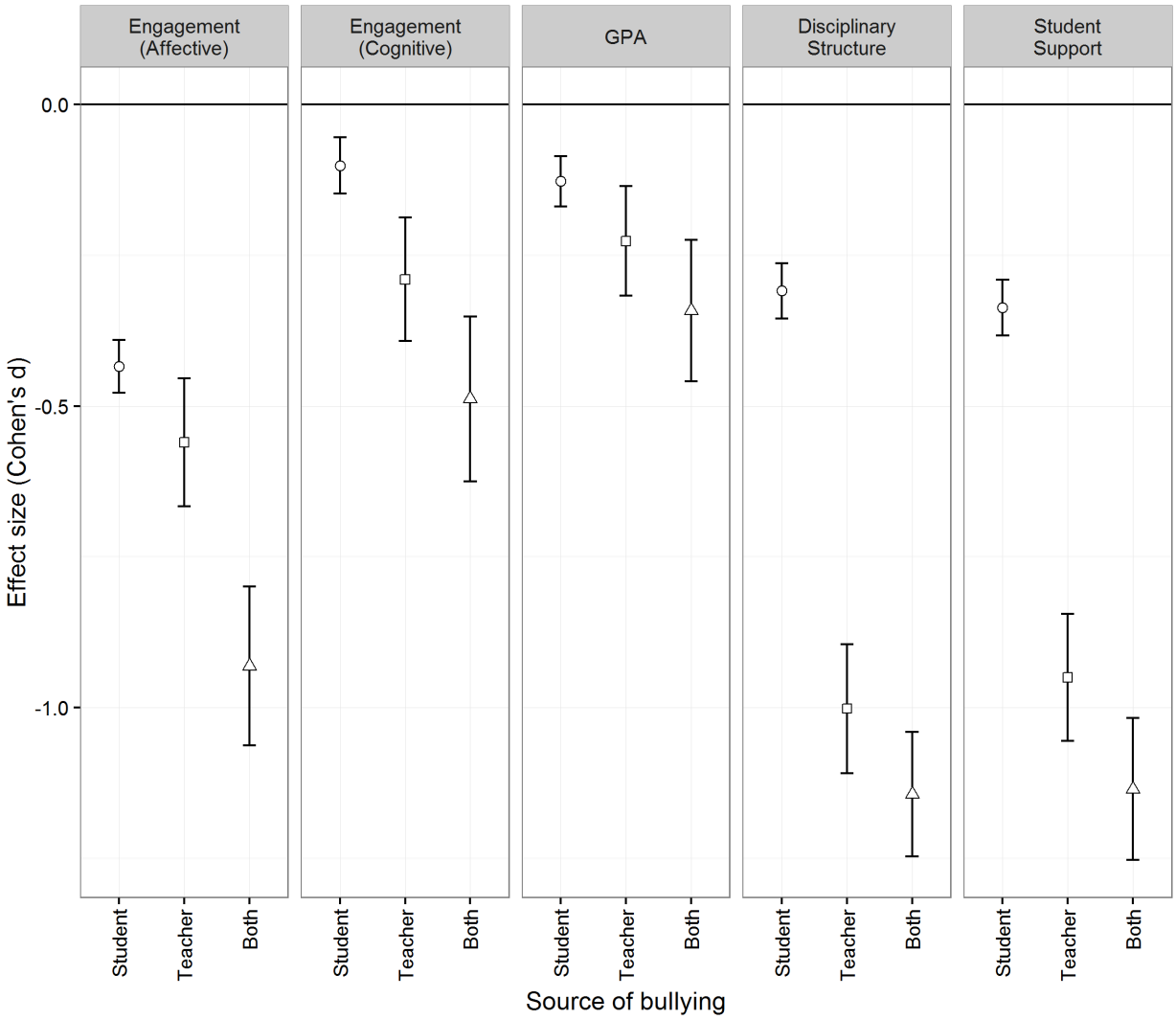

Figure 1. Effect size comparisons (with 95% confidence intervals) by victimization status. The comparison/reference group is non-victimized students, which is represented by the horizontal line at zero.

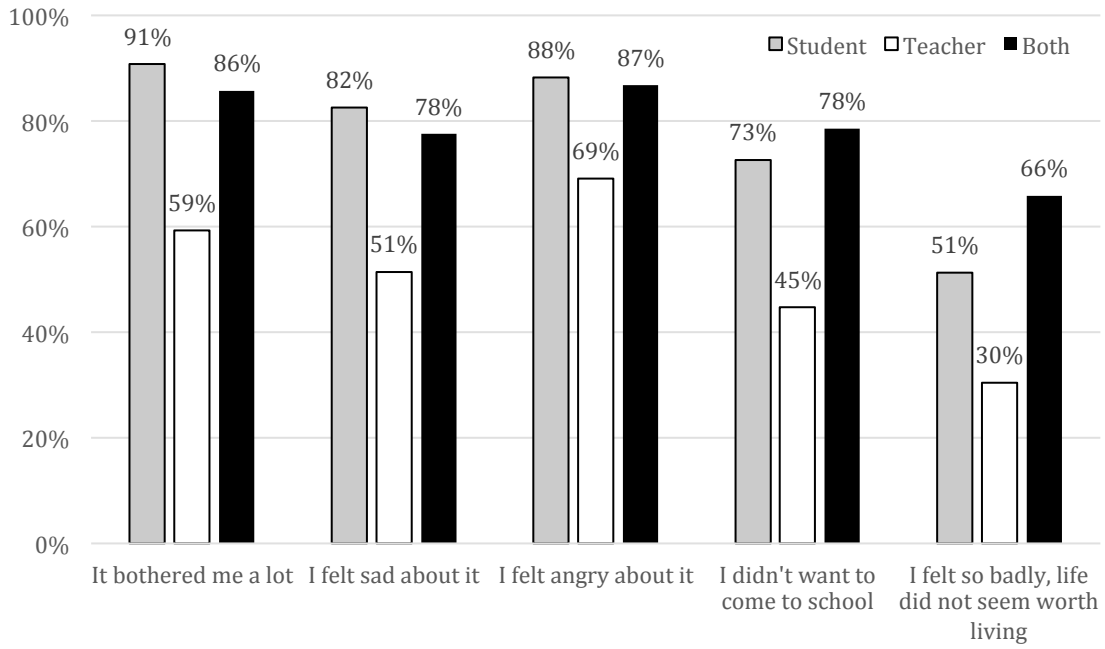

Figure 2. Percent of students responding true (vs. not true) by distress item and victimization status (n = 7,933).

Note. Answers of *a little true, somewhat true,* and *definitely true* were coded as (1) true versus *not true* coded as (0).

Manuscript Three

The Association of Teen Dating Aggression with Risk Behavior and Academic Adjustment

Pooja Datta, Dewey Cornell, and Timothy Konold

Curry School of Education, University of Virginia

Author note

Pooja Datta, Dewey G. Cornell, and Timothy Konold; Curry School of Education, University of Virginia.

Correspondence concerning this article should be addressed to Pooja Datta, School of Education, University of Virginia, 205 Ruffner Hall, Charlottesville, VA 22903. E-mail: pd8tb@virginia.edu

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Abstract

Teen dating aggression (TDA) is recognized as a serious developmental concern in adolescence. The current study constructed a six-item TDA scale, investigated the prevalence of TDA in a statewide sample, and examined the association between TDA and high-risk behaviors and academic adjustment. The sample consisted of 32,428 students in 320 high schools who completed a school climate survey. Nearly four in 10 students (39%) reported experiencing at least one form of dating aggression in the past year. Students who experienced TDA reported more marijuana use, alcohol use, fighting, and suicidality. Students who experienced TDA also reported lower school engagement, educational aspirations, and grades. These findings add new evidence that TDA is a prevalent adolescent problem associated with poorer overall adjustment.

Keywords: dating aggression, adolescents, risk behavior, academic adjustment

The Association of Teen Dating Aggression with Risk Behavior and Academic Adjustment

Adolescence is a period of development where dating is initiated and the risk for encountering aggression from a dating partner arises (CDC, 2016). Nationally representative surveys have found that approximately 20-30% of high school students are exposed to dating aggression in the form of emotional, physical, and/or verbal abuse (Centers for Disease Control and Prevention, 2014). Teen dating aggression[1] (TDA) has been identified as a risk factor for problem behaviors and academic failure (Haynie et al., 2013).

Typically, researchers have focused on two types of dating aggression in adolescence: *physical aggression* such as hitting a partner and *sexual aggression* such as forcing a partner to engage in sexual acts against the partner's will (CDC, 2016). However, research on adult dating aggression has considered other behaviors that are perceived as threatening and coercive in relationships. Adolescents are more likely to encounter mild forms of aggression (e.g., physical intimidation) than physical harm (e.g., slapping; CDC, 2016; Roscoe & Callahan, 1985) and therefore more likely to experience a *threat to harm* (Wolfe et al., 2001). *Verbal aggression* refers to name-calling and use of belittling comments that target the self-worth of the victim (CDC, 2016). *Harassment* refers to a pattern of unwelcome attempts to remain in contact with someone or cause them distress (CDC, 2016). Few studies have begun to include harassment into their measurement of TDA (Niolon et al., 2015). *Pressure to use alcohol/drug use* refers to

[1] The literature frequently uses the term teen dating violence, but violence is typically defined as the intentional use of physical force to injure someone (Krug, Mercy, Dahlberg, & Zwi, 2002), whereas aggression is defined more broadly as a forceful behavior, action, or attitude that is expressed physically, verbally, or symbolically (aggression, n.d.; Warburton & Anderson, 2015). Therefore, we use the term teen dating aggression to encompass forms of aggression that are short of violence.

pressuring a partner to participate in substance use (Lavoie, Robitaille, & Hébert, 2000; Niolon et al., 2015). This type of pressure within a relationship can also function as peer pressure in a situation where a youth wants to please their partner or maintain a social status or also a mechanism for placing a partner in a more vulnerable position (Dumas, Ellis, & Wolfe, 2012; Exner-Cortens, 2014; Goncy, Sullivan, Farrell, Mehari, & Garthe, 2016).

Prevalence rates range significantly by type of TDA (Exner-Cortens, Gill, & Eckenrode, 2016; Parker, Debnam, Pas, & Bradshaw, 2016; Wincentak, Connolly, & Card, 2016). A meta-analysis found that physical TDA ranged from as low as 1% to as high as 61%, whereas sexual TDA ranged from as low as <1% to as high as 54% (Wincentak et al., 2016). Estimates of TDA tend to be higher with more comprehensive measures and when they include less severe types of TDA such as verbal threats that are more common than violent acts (Espelage & Holt, 2007; Exner-Cortens et al., 2016).

Demographic Differences

Traditionally, girls have reported higher rates of TDA victimization, especially physical TDA (Wincentak et al., 2016). However, further examination of TDA types and gender is needed because there is research that boys may experience some types of victimization at similar rates to girls (Howard, Feigelman, Li, & Rachiba, 2002; Goncy et al., 2016). There is evidence that boys may underreport their own victimization perhaps due to social desirability to maintain a more masculine identity (Wincentak et al., 2016). Boys may be more likely to experience verbal aggression whereas girls may experience more physical or sexual aggression (Goncy et al., 2016).

There is substantial evidence that socioeconomic status (SES) and urbanicity are significantly correlated with TDA (Lormand et al., 2013; Wincentak et al., 2016). In one study, rates of physical and sexual TDA were higher among students from disadvantaged backgrounds (Debnam, Waasdorp, & Bradshaw, 2016). Research samples that included a larger proportion of students from rural communities and disadvantaged urban communities also reported higher rates of physical TDA (Basch, 2011; Foshee, McNaughton Reyes, Gottfredson, Chang, & Ennett, 2013; Marquart, Nannini, Edwards, Stanley, & Wayman, 2007). Prior research has suggested that rural and disadvantaged communities may hold more traditional or exaggerated notions of gender roles that promote hypermasculinity (i.e., men should be aggressive and dominating over women; Marquart et al., 2007). Further investigation into the connections among urbanicity, income level, and TDA is needed (Wincentak et al., 2016).

There are mixed findings that age is correlated with TDA (Debnam et al., 2016; Lormand et al., 2013). It is expected that older students will consistently report higher rates of TDA because of their greater dating experience (Debnam et al., 2016). However, a recent meta-analysis did not find that older students experienced higher levels of physical or sexual TDA (Wincentak et al., 2016). The association of age with other forms of TDA has not been thoroughly examined.

Although some researchers have found evidence that minority students experience more TDA (Debnam et al., 2016), others have posited that this difference is specific to physical TDA and not verbal TDA (Howard, Wang, & Yan, 2007). One study found that Hispanic and Black students report physical TDA at higher rates than White students (CDC, 2012). Another study of 684 secondary school students did not find significant

differences between minority and White students who experienced physical or emotional TDA (Espelage & Holt, 2007). Overall, few studies have examined racial/ethnic differences with TDA, especially across different forms (Debnam et al., 2016; Espelage & Holt, 2007; Lormand et al., 2013).

Risk Behaviors

There is widespread agreement that TDA co-occurs at high rates with other harmful behaviors in adolescence (Swahn, Bossarte, Palmier, Yao, & Van Dulmen, 2013). TDA has been linked to high-risk behavior including substance use (Ackard, Eisenberg, & Neumark-Sztainer, 2007; Swahn et al., 2013). In one longitudinal study of 125 middle and high school students, both male and female adolescents who experienced TDA were more likely to report later drug use (e.g., marijuana; Ackard et al., 2007). Moreover, there is evidence of a link between TDA and higher rates of fighting at school (Niolon et al., 2015; Swahn et al., 2013). The indirect effects model suggests that students who are involved in aggressive behaviors, including TDA, are more likely to use substances as a way of coping with the negative emotional and social effects of TDA and/or more likely to engage in delinquent peer interactions (i.e., fighting; Fite, Colder, Lochman, & Wells, 2007; McNaughton Reyes, Foshee, Bauer, & Ennett, 2012; White et al., 1993).

TDA can lead youth to feel depressed and self-critical, and this could result in suicidal thoughts and actions (Nahapetyan, Orpinas, Song, & Holland, 2014; Olshen, McVeigh, Wunsch-Hitzig, & Rickert, 2007). In a longitudinal study of 127 middle and high school students, students who experienced TDA had increased odds for reporting later suicidal ideation and attempts (Ackard et al., 2007). These results were significant

for both boys and girls with stronger effects for suicidal ideation among boys. In contrast, a cross-sectional study of 87 New York City public high schools found that girls were more likely than boys to report attempting suicide when experiencing dating aggression (Olshen et al., 2007). In another longitudinal study of 624 high school students, girls, students in grades 9-11, and those who had experienced TDA were more likely to report suicidal ideation (Nahapetyan et al., 2014).

Academic Adjustment

Studies have found that peer aggression in general, both in and out of school, has a negative impact on academic achievement (Basch, 2011; Espelage, Hong, Rao, & Low, 2013; Nakamoto & Schwartz, 2010). In a study of 632 high school students, researchers found that students who experienced physical, sexual, and verbal TDA also reported lower grade point averages (Bergman, 1992). In contrast, a longitudinal study with a rural sample of 3,328 eighth through twelfth grade students did not find TDA to be a significant predictor of academic aspirations or grades (Foshee et al., 2013); however, researchers cautioned that their findings were limited to rural populations.

TDA is a particular form of peer victimization that emerges in adolescence and has some distinguishing characteristics with other forms of peer victimization. Due to the heightened importance of romantic relationships in adolescence, TDA may be a particularly potent form of peer victimization (Exner-Cortens, 2014). Prior research has concluded that students victimized by their peers experience a decline in school belonging and engagement that leads to lower grades (Espelage et al., 2013). It is feasible that students who experience TDA may also report poorer engagement in school.

Current Study

There are three research questions investigated in this study. First, is there evidence to support a brief, 6-item measure of multiple types of TDA? A brief scale is needed so that it can be incorporated into broader school climate and safety assessments (e.g., Espelage & Holt, 2013). Nevertheless, a brief TDA scale should include aggressive behaviors that are short of violence such as verbal aggression (CDC, 2016), pressure to use alcohol or drugs (Goncy et al., 2016; Wolfe et al., 2001), and harassment (CDC, 2016).

Second, what is the prevalence of TDA across different demographic groups? Previous studies using selective samples have generated a wide range of TDA rates across demographic groups (Exner-Cortens et al., 2016; Parker et al., 2016; Wincentak et al., 2016). Through use of a statewide sample, we examine TDA rates across demographic characteristics of gender, grade, SES, and racial/ethnic background. Our use of a large and diverse sample will help disentangle rates across demographic groups. Furthermore, the inclusion of a broader range of TDA may shed new light on gender and grade differences.

Third, do students who have experienced TDA report higher risk behaviors and poorer academic adjustment in comparison to their peers who are dating and not experiencing TDA? TDA has been linked to particular risk behaviors (Parker et al., 2016). The current study examines a broader range of risk behaviors including marijuana/alcohol use, fighting at school, and suicidality. In contrast to risk behaviors, less is known about the association of TDA with academic adjustment, including student engagement in school, course grades, and educational aspirations (Basch, 2011; Foshee et

al., 2013; Swahn et al., 2013). This study will inform existing contradictory information on TDA and the connection with poor academic adjustment.

Method

Participants

The sample consisted of 32,428 9th, 10th, 11th, and 12th grade students who completed the State Secondary School Climate Survey as part of the state's annual school safety audit program (Cornell et al., 2016). The school participation rate was approximately 99%, based on 320 of 322 eligible schools. High participation rates were achieved with the endorsement of the State Department of Education and the State Department of Criminal Justice Services.

All students were eligible to participate in the study, except for those with limited English proficiency or an intellectual or physical disability that would prevent them from completing the survey. Schools received the option to (a) invite all 9th through 12th graders to participate in the study (whole grade option; 44 schools) or (b) randomly select 25 students from each grade to participate (random sample option; 206 schools). For schools that chose the random sample option, principals were given instructions for selecting students using a random number list customized to grade enrollment size. Principals reported student absence because of illness, the parent declined participation, or a schedule conflict as the main reasons for non-participation (for more information, see Cornell et al., 2016). There were a total of 68,951 students who participated in the survey (overall participation rate approximately 80.5%). To improve data quality, 6,272 (9.1%) surveys were excluded for two reasons: (1) completion time was lower than an empirically determined cutoff of approximately 7 minutes (2.4%) and (2) students

reported not answering truthfully according to two validity screening items (6.7%). Student demographic characteristics for the analytic sample are presented in Table 1, for the full sample and dating/analysis subsample.

To focus on students who were actively dating and thus could experience dating aggression, the sample was subdivided to only include those who reported dating someone in the past 12 months. All students reflected on experiences of dating aggression, how often they occurred, and whether they had dated someone in the past year. Students answered, "I have dated or gone out with someone in the past 12 months" on a 5-point scale, ranging from 1 (*Never*) to 5 (*Four or more times*). Students who endorsed *Never* dating someone within the past 12 months were excluded from the analytical sample (30,251 students; 48.2%), consistent with previous studies (Debnam et al., 2016; Edwards & Neal, 2017; Lormand et al., 2013; Vivolo-Kantor, Olsen, & Bacon, 2016).

Measures

Students completed surveys under the supervision of school staff using standard instructions. The surveys were administered anonymously online using Qualtrics software. The surveys consisted of approximately 94 questions about school climate characteristics such as student perceptions of school discipline and relationships with teachers (for more information, see Cornell et al., 2016).

Validity screening items. There were two validity-screening items. The first item, "I am telling the truth on this survey" was answered on a 4-point scale, ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*). Students who answered *strongly disagree* or *disagree* were excluded from the sample. The second item was "How many

of the questions on this survey did you answer truthfully?" This item had five response options ranging from 1 (*All of them*) to 5 (*Only a few or none of them*). Students who answered *some of them* or *only a few or none of them* were omitted from the sample. The use of validity screening questions has been shown to improve the quality of adolescent survey data (Cornell, Lovegrove, & Baly, 2014; Cornell, Klein, Konold, & Huang, 2012; Jia, Konold, & Cornell, in press).

Dating aggression. Six items were adapted from previously developed scales to create a brief Teen Dating Aggression scale to measure victimization (Cronbach's alpha = .82). Items were adapted from two scales: (1) the 35-item CADRI (Wolfe et al., 2001), which covers five types of dating aggression: threatening behaviors, physical, sexual, relational, and emotional/verbal abuse; and (2) the 18-item Safe Dates Victimization in Dating Relationships (Foshee et al., 1996), which assesses two types of dating aggression: sexual and physical abuse. These scales were too long to be used as part of a comprehensive school climate survey, so we derived a briefer scale in response to school administration concerns about survey length and loss of instructional time.

Each question began with the root, "During the past 12 months how many times did someone you dated or went out with …" The six items (see Figure 1) encompassed physical abuse, threats to harm, verbal abuse, sexual abuse, encouragement of risky behavior, and stalking/harassment. Each question had five response options ranging from 1 (*Never*) to 5 (*Four or more times*).

Risk behaviors. The survey incorporated five items from the Youth Risk Behavior Surveillance Survey (YRBS; CDC, 2015) to measure the prevalence of student risk behavior. Items included marijuana use ("During the past 30 days, how many times

did you use marijuana?"), engaging in a fight ("During the past 12 months, how many times were you in a physical fight on school property?"), and consuming alcohol ("During the past 30 days, on how many days did you have at least one drink of alcohol?"). Furthermore, students were asked about suicidal ideation ("During the past 12 months, did you ever seriously consider attempting suicide?") and their number of suicide attempts ("During the past 12 months, how many times did you actually attempt suicide?"). All items were answered on a 5-point scale, ranging from 1 (*0 times*) to 5 (*6 or more times*), except for suicidal ideation, which was answered with *Yes* or *No*.

Student engagement. Prior studies have conceptualized student engagement in school as having both affective (attachment and school pride) and cognitive (investment in learning) components (Appleton, Christenson, & Furlong, 2008). Student engagement in school was measured with a six-item scale that has demonstrated good reliability and validity in previous studies (Cornell, Shukla, & Konold, 2016; Konold et al., 2014; Konold & Cornell, 2015). Three items measured affective engagement (e.g., "I am proud to be a student at this school") and three items measured cognitive engagement (e.g., "I want to learn as much as I can at school"). The answer choices for these items were on a four-point Likert-scale, ranging from 1 (S*trongly disagree)* to 4 (*Strongly agree*).

Grades and educational aspirations. One survey item asked, "What grades did you make on your last report card?" The seven response options ranged from 1 (*Mostly D's and F's*) to 7 (*Mostly A's*). One survey item asked, "How far do you expect to go in school?" There were six response options ranging from 1 (*I do not expect to graduate from high school*) to 6 (*I expect to complete post-graduate studies [such as a master's degree or doctoral degree] after graduating from a four-year college*). These items were

used in a previous study as academic indicators for middle and high school students (Cornell et al., 2016).

Covariates. The analyses controlled for the student demographic variables of gender, race/ethnicity, SES (represented by parent educational level), and urbanicity. Students were asked to report their parents' highest educational level, ranging from 1 (*Did not graduate from high school)* to 5 (*Completed post-graduate studies*). Urbanicity was measured by population density (number of residents per square mile), which was obtained from 2010 Census data (U.S. Census Bureau, 2012).

Analytic Strategy

Our analyses were conducted in three phases. The first phase tested the hypothesized one-factor structure of the Teen Dating Aggression scale. Horn's Parallel Analysis (HPA) was used to assist in identifying the number of factors underlying the TDA items, and the structure of the items was evaluated within a confirmatory factor analysis framework. The quality of the resulting model was gauged with the Tucker-Lewis index (TLI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). The first two measures generally range between 0 and 1.0, with larger values reflecting better fit. Values of .90 or greater have been taken as evidence of good fitting models (Bentler & Bonett, 1980). By contrast, smaller RMSEA values are reflective of better fitting models; where, values <.08 are considered reasonable and values >.10 are considered poor (Browne & Cudeck, 1993, Hu & Bentler, 1999). In the second phase, descriptive analyses were used to investigate differences in TDA across demographic variables. We calculated four analysis of variance (ANOVA)

tests to determine if mean scores on TDA differed by gender, grade, SES, and race/ethnic groups.

In the third phase, hierarchical multiple regression was used to investigate the association of the resulting teen dating aggression victimization scale with eight dependent variables: (1) marijuana use, (2) fighting, (3) alcohol use, (4) suicidal ideation, and (5) suicide attempts, (6) engagement, (7) student reported grades, and (8) educational aspirations. Linear regression was used for the continuous outcomes (all except suicidal ideation) and logistic regression was used with the dichotomous outcome (suicidal ideation). The first step of these models considered relations between student covariates and the outcomes. The covariates included gender, race/ethnicity, parental education, and population density. White students and girls served as reference groups. School fixed effects (FE) were also included to account for school-level influences in student responses. FE models allowed us to retain our primary interest in student-level results while accounting for variability at the school level resulting from all observed and unobserved variables at the cluster level (Huang, 2016; Murnane & Willett, 2010). The additional importance of teen dating aggression was evaluated through inclusion of this scale in the second step of the regression models. Statistical analyses were performed with Mplus 7.0 using a maximum likelihood estimator with robust standard errors (MLR), where the nesting of students within schools was accounted for through specification of a *complex* analysis.

Results

In the first phase, all TDA items were moderately correlated with one another (*r*s = .35-.68, all *p*s < .001), and Horn's parallel analysis suggested the presence of a single

factor. Results of a single factor CFA analysis suggested reasonable fit as gauged by the CFI (= .90) and RMSEA (= .08), with the TLI (= .83) reflecting some room for improvement. Standardized factor loadings linking each item to an overall TDA factor were large and statistically significant, ranging between .57 and .79 (see Figure 1).

In the second phase, prevalences on the individual TDA items are presented in Table 1 and Figure 2. Nearly four in 10 students (39%) who were dating reported experiencing at least one type of dating aggression within the past year. Compared to boys, girls reported higher rates of verbal abuse (31%), harassment (22%), and touching against their will (18%). Girls and boys reported similar rates of threat to harm (11%), physical abuse (10%), and pressure to drink alcohol or take drugs (10%).

Four ANOVAs were used to investigate the effects of (1) gender, (2) grade, (3) SES, and (4) race/ethnicity on TDA. First, girls reported more TDA than boys, $F(1, 1) = 113.158$, $p < .001$, $R^2 = .003$. Second, students in higher grades reported more TDA than students in lower grades, $F(1, 3) = 12.508$, $p < .001$, $R^2 = .001$. Third, students of lower SES reported higher TDA, $F(1, 4) = 4{,}856.142$, $p < .001$, $R^2 = .006$. Fourth, there was a significant difference among White, Hispanic, Black, and Asian students, $F(1, 4) = 28.143$, $p < .001$, $R^2 = .005$. Post hoc Tukey pairwise comparisons indicated that in comparison to White students ($M = 7.86$), Hispanic students ($M = 8.26$) reported higher TDA, $p < .001$. No other comparisons between White and minority groups were statistically significant.

In the third phase, regression results for risk behavior and academic adjustment outcomes are reported in Tables 2 and 3, respectively. Effect sizes are reported as the change in R^2 (ΔR^2) value when TDA was added to the regression models. Students who

experienced TDA reported significantly higher marijuana use, fighting, alcohol use, suicide attempts, and suicidal ideation than peers who were dating and not experiencing TDA, after controlling for student- and school-level covariates.

In comparison to boys, girls reported less marijuana and alcohol use and fighting; however, they reported a higher number of suicide attempts and were more likely to report suicidal ideation. Older students reported more marijuana and alcohol use, suicide attempts, and were more likely to report suicidal ideation; however, they reported less fighting. Students who resided in more densely populated areas reported more marijuana use and were more likely to report suicidal ideation. Higher parental education was significantly linked to lower marijuana use and fighting, and lower suicidality. In comparison to White students, Black students reported higher marijuana use, fighting, and suicidal ideation, and lower alcohol use; Hispanic students reported higher marijuana and alcohol use, fighting, and suicide attempts; and Asian students reported more fighting and suicidality, and lower marijuana and alcohol use.

Students who experienced TDA reported significantly lower student engagement, grades, and educational aspirations than peers who were dating and not experiencing TDA after controlling for student and school level covariates. There were also notable statistically significant effects for student demographics in relation to reports of academic adjustment. In comparison to boys, girls reported higher engagement, grades, and educational aspirations. Older students were more likely to report higher grades and educational aspirations, but lower engagement. Students who resided in more populated areas reported lower grades and higher educational aspirations. Higher parental education was significantly associated with higher engagement, grades, and educational aspirations.

In comparison to White students, Black students reported lower engagement and grades; Hispanic students reported lower engagement and grades; and Asian students reported higher grades and educational aspirations.

Discussion

The United States Department of Education and CDC have called for new efforts and programs that promote awareness of teen dating aggression (Break the Cycle, 2014; Office of Safe and Healthy Students, 2017). To help address this problem, this study provides schools with a measurement tool to recognize the prevalence of TDA. Secondary schools can use this scale to help students and school staff become more aware of the problem of TDA. This study provides new information about the association between TDA and high-risk behaviors and poor academic adjustment. These findings from a large, demographically diverse sample of students and schools indicate that TDA is a prevalent concern in high schools across gender, grade, and racial/ethnic groups.

As hypothesized in the first research question, a CFA found support for including six types of dating aggression onto an underlying factor model of TDA. Notably, verbal aggression and harassment were the two highest reported types of TDA (19-25% of all students in the sample). A survey that focused only on physical and sexual TDA would have overlooked other types of coercive and aggressive behaviors in relationships that occur with more frequency. Our findings support previous claims that students in relationships were more likely to experience TDA in the form of threatening behavior as opposed to violent acts (Espelage & Holt, 2007).

For the second research question, our analyses indicated that nearly 4 out of 10 high school students experienced at least one form of TDA in the past 12 months.

Unsurprisingly, girls reported higher overall TDA rates than boys (Goncy et al., 2016, Lormand et al., 2013). However, as seen in Figure 2, girls experienced some forms of TDA at rates comparable to boys. In line with some prior research, girls reported physical TDA and threats to harm at the same rate as boys (Banyard & Cross, 2008; Halpern, Oslak, Young, Martin, & Kupper, 2001; Yan, Howard, Beck, Shattuck, Hallmaek-Kerr, 2010). Girls and boys also reported similar rates of pressure to drink alcohol or use drugs. In a study on peer pressure and risk factors for alcohol, peer pressure strongly influenced both boys and girls, but through separate mechanisms (Whaley, Hayes, & Smith, 2014): girls were more susceptible to peer approval and boys were more susceptible to peer pressure.

Consistent with previous research, students of lower SES reported more TDA than students of higher SES (Lormand et al., 2013; Wincentak et al., 2016). TDA rates also increased with grade level. Our findings for racial/ethnic differences and TDA were contrary to some previous findings; Hispanic students were the only minority group to report higher TDA in comparison to White students. Although these results are somewhat inconsistent across samples (CDC, 2012; Espelage & Holt, 2007), some research suggests that the high levels of TDA among Latino youth are largely underreported and studied (Cuevas, Sabina, & Bell, 2014). It is feasible that due to the diversity and power of our sample, we were able to tease out the difference between racial/ethnic groups and TDA (Lormand et al., 2013).

For the third research question, students who reported TDA were at risk for higher risk behaviors (Ackard et al., 2007, Swahn et al., 2013), as predicted. Students who experienced TDA were more likely to report higher rates of marijuana use, alcohol use,

and fighting. These results were not surprising based on previous literature between TDA and high-risk behaviors (Goncy et al., 2017). Students who endorsed TDA also reported more suicidality, which was consistent with prior research. Numerous links have been made between TDA and suicidality because of the strong association between TDA and depression (Ackard et al. 2007; Ackard & Neumark-Sztainer 2002; Banyard & Cross, 2008; Olshen et al., 2007; Yan et al. 2010). Students who report TDA are presumed to report more depressive symptoms, including suicidality, because of strong distress in response to dating aggression. Nahapetyan and colleagues (2014) suggested that a student who experiences frequent verbal TDA is more likely to take the name-calling personally and factor it into their self-worth. These students would be more likely to then withdraw socially and feel isolated.

Students who experienced TDA were also at a greater risk of reporting negative academic adjustment. These students reported lower engagement, grades, and educational aspirations. A large body of peer victimization research has established that students who feel unsupported, threatened, or isolated by their peers are less likely to attend or take pride in their school (Basch, 2011; Ladd, Kochenderfer, & Coleman, 1997). In response to TDA, kids are more likely to feel depressed and isolated (Ackard et al. 2007; Ackard & Neumark-Sztainer 2002), which affects their motivation to do well in school, achieve good grades, or even attend school (Basch, 2011).

Limitations and Implications

Several limitations should be considered when interpreting the findings of this study. This is a correlational and cross-sectional study that cannot establish causal relationships between TDA and the outcomes measured. We posited that students who

experienced TDA would be more likely to report negative behaviors and lower academic performance. However, it is possible that this relationship may be bi-directional; for example, students who engage in high-risk behaviors may encounter more aggression in their dating relationships (Exner-Cortens, Eckenrode, & Rothman, 2013). A few studies have demonstrated a link between TDA and increased suicidality (Nahapetyan et al., 2014; Silverman, Raj, Mucci, & Hathaway, 2001).

Another limitation is the reliance on self-report. Students may also have been cautious about answering or likely to underreport the frequency of their high-risk behaviors and lower grades. To limit some forms of response bias, this study used a screening procedure to filter out a proportion of the sample (~9%). Despite this concern, measurement options for TDA are limited to self-report because it is not often spoken of or witnessed by others (Foshee et al., 2013).

The psychometric properties of our TDA scale warrant further study. Although our fit indices demonstrated reasonable fit for the one-factor structure of TDA, future studies could compare the brief scale to longer measures to investigate external validity (Exner-Cortens, et al., 2016). The scale was limited to just six items, which prevents a more comprehensive assessment of different components of dating aggression; however, this also makes the scale more useful in larger school climate surveys where brief measures are needed.

The current study emphasizes the relevance of dating aggression prevention programs in secondary schools. TDA research needs brief measures that have strong psychometric qualities that provide schools with the ability to recognize the problem and help students become more aware of TDA. Accurate assessment of TDA will also inform

selection and impact of intervention programs that may mediate TDA and higher risk behaviors and negative academic outcomes (Edwards & Neal, 2017; McNaughton Reyes et al., 2012). A program such as Safe Dates (Foshee et al., 2000), one of the most extensively studied and implemented programs, has demonstrated immediate behavioral changes that affect rates of dating aggression. Overall, the current study emphasized the need for dating aggression to be a focus of secondary school prevention programs due to its associations with poorer academic performance, high-risk behavior, and potentially serious mental health consequences.

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Table 1.

Student Demographic Characteristics

	Not dated (n = 30,521)		Dated no TDA (n = 19,832)		Dating and TDA (n = 12,596)		Total (N=67,679)	
	N	%	N	%	N	%	N	%
Gender								
Female	16,042	53.0%	9,776	49.3%	4,741	37.6%	30,559	48.8%
Male	14,209	47.0%	10,056	50.7%	7,855	62.4%	32,120	51.2%
Grade								
9th	9,226	30.5%	4,795	24.2%	3,062	24.3%	17,083	27.3%
10th	8,099	26.8%	4,979	25.1%	3,338	26.5%	16,416	26.2%
11th	7,020	23.2%	5,211	26.3%	3,237	25.7%	15,468	24.7%
12th	5,906	19.5%	4,847	24.4%	2,959	23.5%	13,712	21.9%
Race/Ethnicity								
White	15,010	49.2%	12,001	60.5%	7,137	56.7%	34,148	54.5%
Hispanic	3,688	12.1%	2,123	10.7%	1,564	12.4%	7,375	11.8%
Black	5,973	19.6%	3,190	16.1%	2,006	15.9%	11,169	17.8%
Asian	2,742	9.0%	620	3.1%	282	2.2%	3,644	5.8%
Other	2,838	9.2%	1,898	9.6%	1,607	12.8%	6,343	10.1%
Parental Education								
No high school	2,261	7.5%	1,281	6.5%	1,201	9.5%	4,743	7.6%
High school	7,762	25.7%	5,407	27.3%	3,616	28.7%	16,785	26.8%
2 year or technical	4,055	13.4%	2,991	15.1%	2,022	16.1%	9,068	14.5%
4 year	8,144	26.9%	5,368	27.1%	2,999	23.8%	16,511	26.3%
Post-grad studies	8,029	26.5%	4,785	24.1%	2,758	21.9%	15,572	24.8%
Dating Aggression[1]								
Physical	508	1.7%	-	-	3,310	26.3%	3,818	6.1%
Threat to harm	651	2.2%	-	-	3,471	27.6%	4,122	6.6%
Verbal	1,475	4.9%	-	-	8,386	66.6%	9,861	15.7%
Sexual	587	1.9%	-	-	4,723	37.5%	5,310	8.5%
Risky/Alcohol	365	1.2%	-	-	3,159	25.1%	3,524	5.6%
Bother/Harass	533	1.8%	-	-	6,324	50.2%	6,857	10.9%
Risk Behaviors[2]								
Marijuana use	2,325	7.7%	2,511	12.7%	3,317	26.3%	8,153	13.0%
Fighting	1,438	4.8%	1,067	5.4%	1,676	13.3%	4,181	6.6%
Alcohol Use	3,814	12.6%	4,500	22.7%	5,093	40.4%	13,407	21.4%
Suicidal Ideation	3,265	10.8%	2,571	13.0%	3,952	31.4%	9,788	15.6%
Suicide Attempts	1,175	3.9%	974	4.9%	2,152	17.1%	4,301	6.9%

Note. TDA = Teen Dating Aggression. [1]Reported at least one instance of teen dating aggression. [2]Reported at least one or more times, except for Suicidal Ideation which was reported as Yes or No.

Table 2.

Standardized Regression Coefficients and Standard Errors for Risk Behaviors

	Marijuana Use Beta (Standard Error)		Fighting Beta (Standard Error)		Alcohol Use Beta (Standard Error)		Suicidal Ideation[1] Odds Ratio (Beta)		Suicide Attempt Beta (Standard Error)	
Girls[2]	0.085	***	0.119	***	0.125	***	-1.938	***	-0.041	***
	(.005)		(.006)		(.012)		(.662)		(.006)	
Grade level	0.086	***	-0.037	***	0.103	***	0.915	***	-0.046	***
	(.006)		(.005)		(.006)		(-.089)		(.005)	
Race/ Ethnicity[3]										
Hispanic	0.036	***	0.065	***	0.046	*	1.021		0.057	***
	(.007)		(.009)		(.022)		(.020)		(.007)	
Asian	-0.010	*	0.018	**	-0.121	***	1.412	***	0.021	***
	(.005)		(.005)		(.029)		(.345)		(.005)	
Black	0.033	***	0.055	***	-0.016	***	0.727	***	0.007	
	(.007)		(.007)		(.016)		(-.319)		(.006)	
Other	0.048	***	0.043	***	0.033		1.249	***	0.050	***
	(.007)		(.007)		(.021)		(.222)		(.006)	
Parental Education	-0.041	***	-0.026	***	0.002		0.939	***	-0.40	***
	(.006)		(.006)		(.005)		(-.063)		(.006)	
Population Density	0.026	**	0.004		-0.001		1.004	**	0.008	
	(.008)		(.007)		(.001)		(.004)		(.007)	
TDA	0.268	***	0.335	***	0.072	***	1.138	***	0.334	***
	(.009)		(.013)		(.002)		(.129)		(.010)	
$R^2_{covariates}$	.024	***	.025	***	.024	***	.047	***	.018	***
R^2_{full}	.096	***	.135	***	.117	***	.127	***	.129	***
ΔR^2	.071		.111		.093		.080		.111	

Note. [1]Odds ratio presented for logistic regression. [2]Girls is the reference group. [3]White is the reference group. TDA = Factor score of teen dating aggression scale. All dependent variables are standardized. Cluster robust standard errors within parentheses. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3.

Standardized Regression Coefficients and Standard Errors for Indicators of Academic Adjustment

	Engagement Coefficient (Standard Error)		Student Reported Grades Coefficient (Standard Error)		Educational Aspirations Coefficient (Standard Error)	
Boys[1]	-0.051	***	-0.146	***	-0.175	***
	(.006)		(.006)		(.007)	
Grade level	-0.048	***	0.076	***	0.017	*
	(.008)		(.008)		(.007)	
Race/ Ethnicity[2]						
Hispanic	-0.036	***	-0.080	***	-0.007	
	(.007)		(.007)		(.008)	
Asian	0.004		0.014	*	0.032	***
	(.008)		(.006)		(.006)	
Black	-0.062	***	-0.129	***	0.010	
	(.008)		(.010)		(.008)	
Other	-0.070	***	-0.075	***	0.004	
	(.008)		(.008)		(.006)	
Parental Education	0.119	***	0.228	***	0.318	***
	(.007)		(.008)		(.008)	
Population Density	-0.007		-0.028	*	0.025	**
	(.011)		(.011)		(.009)	
TDA	-0.188	***	-0.096	***	-0.115	***
	(.008)		(.007)		(.008)	
$R^2_{covariates}$	.033	***	.113	***	.133	***
R^2_{full}	.068	***	.123	***	.147	***
ΔR^2	.035		.011		.014	

Note. [1]Girls is the reference group. [2]White is the reference group. All dependent variables are standardized. Cluster robust standard errors within parentheses. * $p < .05$, ** $p < .01$, *** $p < .001$.

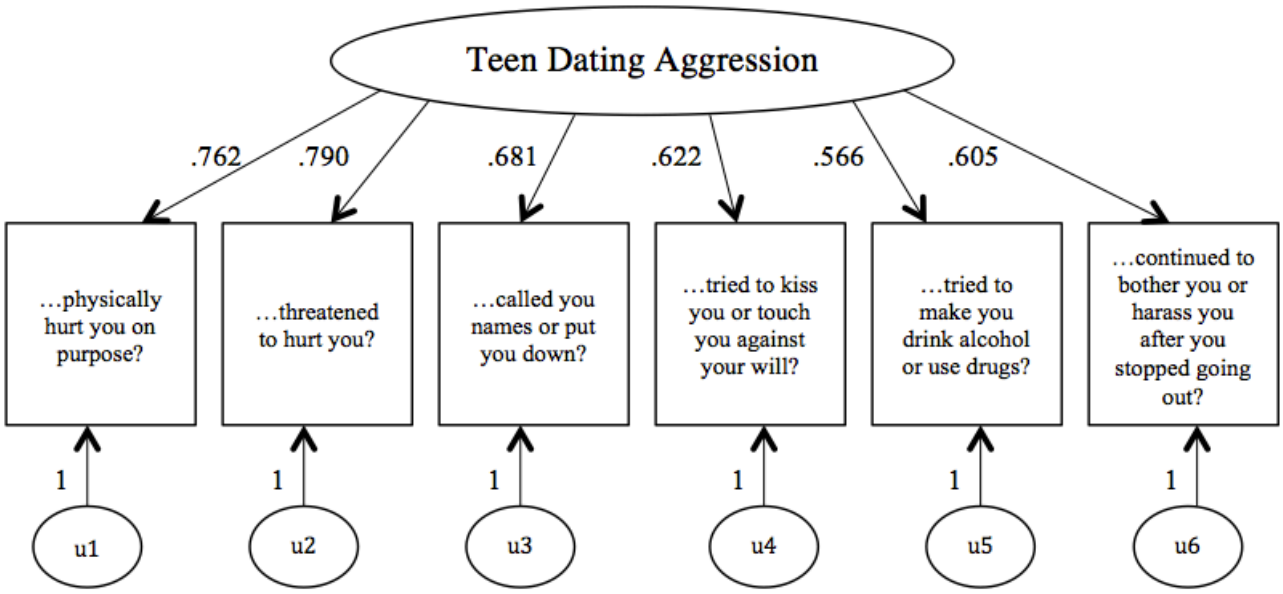

Figure 1. Confirmatory factor analysis of Teen Dating Aggression Scale.

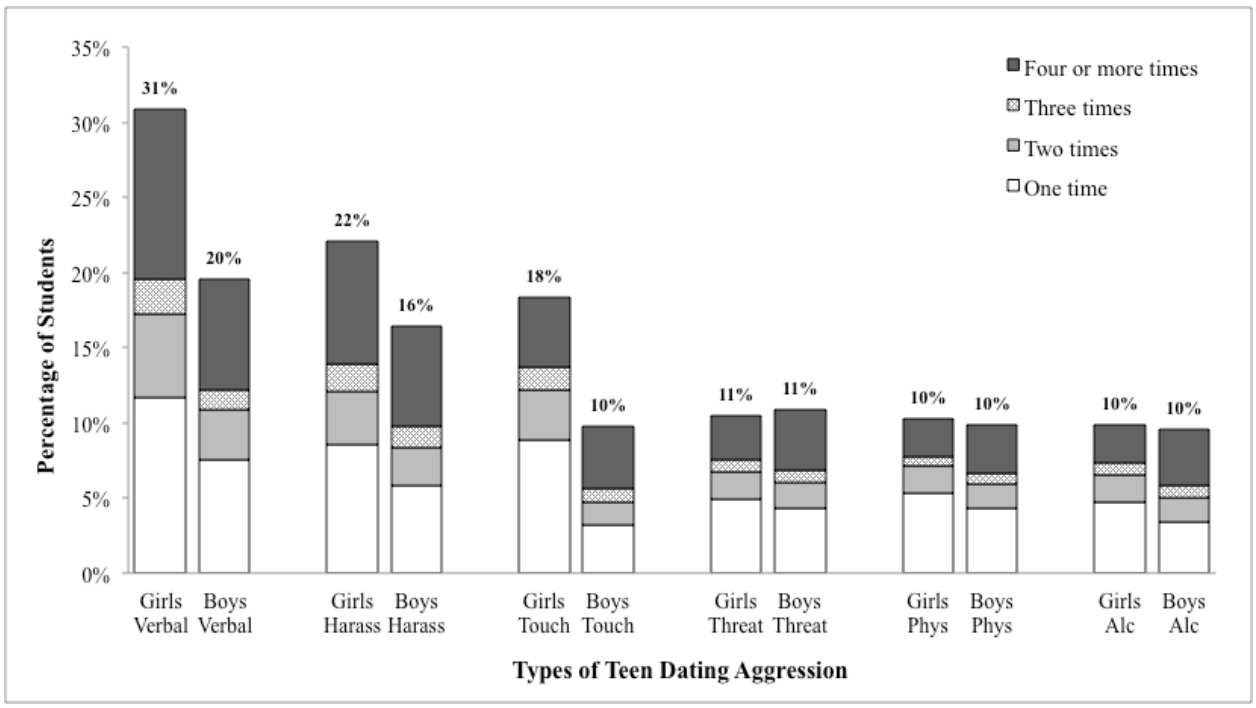

Figure 2. Prevalence of Teen Dating Aggression by Type, Frequency, and Gender. N = 32,438