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Abstract

This study investigated the influence of student-teacher relationships and attitudes toward bullying on middle school students' bullying behaviors. Gender and grade differences were also examined. Data were collected from 435 middle school students. Results indicated that students' attitudes toward bullying mediated the relationship between student-teacher relationships and physical and verbal/relational bullying. There was a significant group difference on student-teacher relationships and attitudes toward bullying between bully, bully-victim, victim, and bystander groups and students not involved in bullying. In addition, sixth graders reported significantly more positive student-teacher relationships than seventh and eighth graders. Implications for the role of both cognitive and behavioral bullying intervention and prevention efforts are discussed.

Keywords: attitudes toward bullying, bullying, student-teacher relationships

Bullying is a social relationship phenomenon that occurs in schools worldwide. It is defined by the Centers for Disease Control and Prevention in the United States as "any unwanted aggressive behavior(s) by another youth or group of youths who are not siblings or current dating partners that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated.

Bullying may inflict harm or distress on the targeted youth including physical, psychological, social, or educational harm" (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014, p. 7). Three characteristics that differentiate bullying from other forms of aggression include the repetition of the behavior, the intent to harm, and an imbalance of power between those perpetrating the bullying and those who are victimized (Olweus, 1993). According to national studies in the United States examining the prevalence of bullying, 27.8% to 41% of children and adolescents are involved in bullying (Bradshaw, Sawyer, & O'Brennan, 2007; Dinkes, Kemp, & Baum, 2009; Nansel et al., 2001; Robers, Kemp, Truman, & Snyder, 2013). Research has shown that involvement in bullying is related to many psychosocial difficulties, including academic difficulties, depressive symptoms, anxiety, low self-esteem, and suicidal ideation (Card & Hodges, 2008; Haynie et al., 2001; Lacey & Cornell, 2013; Smokowski & Kopasz, 2005; Thijs & Verkuyten, 2008). Although school climate factors, such as student-teacher relationships, have been found to influence bullying behaviors, it is not clear how this process unfolds. It is important to examine the interpersonal relationships and socio-cognitive factors (e.g., pro-bullying attitudes) that are associated with bullying in order to better understand the importance of student-teacher relationships that can either support or discourage bullying behaviors. This study aims to test whether youth who hold pro-bullying attitudes are the students who bully others and if pro-bullying attitudes mediate the relationship between student-teacher relationships and students' bullying behavior.

STUDENT-TEACHER RELATIONSHIPS, ATTITUDES, AND BULLYING

A mixture of social theories has been hypothesized to underlie bullying involvement (Espelage & Swearer, 2009). Thus, social-ecological theory (Bronfenbrenner, 1979), social disorganization theory (Shaw & McKay, 1942), and social control theory (Hirschi, 1969) guide the current study. *Bronfenbrenner's* social-ecological theory (1979) highlights the complex contextual factors in human development, in that individual and environmental factors interact to influence behaviors. The environment is comprised of a series of systems, including microsystems or the immediate social environment (e.g., family); mesosystems or the interactions between the structures in the microsystems; exosystems or the social environments that impact development indirectly (e.g., parents' friends); and macrosystems (e.g., social norms). Social disorganization theory (Shaw & McKay, 1942) attributes deviant behavior to socially disorganized cities, the breakdown of the institutions (e.g., family, school, church), and the absence of positive and cooperative relationships in the community. Youth engage in delinquent and criminal behaviors because the economic and social environments limit the community's (e.g., parents, school)

ability to manage or supervise their behavior (Espelage & Swearer, 2009). *Social control theory, as explained by* Hirschi (1969), posits that "delinquent acts occur when an individual's bond to society is weak or broken" (p. 16). Therefore, it assumes that adolescents are less likely to engage in delinquent behavior when they have secure bonds and positive relationships with important people (e.g., teachers) in their lives. All three theories emphasize the importance of relationships between individuals and key members in their environments (e.g., student-teacher relationships) and community norms on adolescent aggression and both cognitive and behavioral influences. Consistent with the three aforementioned theories, research has shown that positive student-teacher relationships are an integral component of school bonding and school climate and are associated with fewer bullying behaviors (Cunningham, 2007; Ma, 2002; Murray-Harvey & Slee, 2010; Raskauskas, Gregory, Rifshana, & Evans, 2010; Richard, Schneider, & Mallet, 2011; Roland & Galloway, 2004). Longitudinal studies have also shown that close student-teacher relationships predicted less physical aggression; while student-teacher conflict predicted both physical and relational aggression (Troop-Gordon & Kopp, 2011). Furthermore, studentteacher conflict during kindergarten predicted peer victimization during first and second grade (Reavis, Keane, & Calkins, 2010). Positive student-teacher relationships also protect against the negative outcomes that are associated with bullying involvement. For instance, positive student-teacher relationships have been found to ameliorate the negative effect of bullying on boys' academic achievement (Konishi, Hymel, Zumbo, & Li, 2010) and served as a protective factor for victimization from kindergarten to first grade (Runions & Shaw, 2013). However, the process underlying the mechanisms by which positive student-teacher relationships deter adolescents from engaging in bullying behaviors remains unclear (Swearer, Espelage, Vaillancourt, & Hymel, 2010). In addition to student-teacher relationships, individual sociocognitive variables, such as attitudes toward bullying, have been found to significantly predict bullying behaviors (Boulton, Trueman, & Flemington, 2002; Gendron, Williams, & Guerra, 2011). Students are more likely to internalize values and regulations from the social group in which they feel secure and to which they can relate (Deci & Ryan, 2000). It follows that, when students have positive relationships with their teachers, they may be more likely to internalize teachers' values (i.e., negative attitudes toward bullying) and refrain from engaging in bullying behaviors.

Currently, no studies have examined the role of students' attitudes toward bullying as a mediator between student-teacher relationships and bullying involvement. The directionality of the association between bullying others and student-teacher relationships remains unclear. Students' engagement in bullying behaviors may be fueled by their positive attitudes toward bullying, which then leads to negative student-teacher relationships, or students' engagement in bullying may serve

to create positive attitudes supportive of bullying, which leads to negative student-teacher relationships. One longitudinal study found that poor student-teacher attachment predicted later delinquency, but delinquency did not predict worse student-teacher attachment over time (Liljeberg, Eklund, Fritz, & Klinteberg, 2011), which supports our hypothesis that student-teacher relationships will predict students' bullying behaviors instead of vice versa. We also hypothesize that students' attitudes toward bullying will mediate this association.

GENDER AND AGE DIFFERENCES

Due to differences in gender role socialization during childhood, girls are taught to be more relationally oriented, which leads them to put forth greater effort in caring for others and preserving relationships (Gilligan, 1982; Karniol, Grosz, & Schorr, 2003). This theory suggests that boys are more likely to engage in bullying behaviors and may have less positive student-teacher relationships than do girls. Furthermore, having positive student-teacher relationships may be more important and beneficial for girls than boys because girls are socialized to be more relationally oriented. However, research on gender differences in bullying and aggression contains contradictory findings. Some studies have found that boys are more likely to be involved in traditional bullying (i.e., non-cyber bullying) than are girls (Robson, & Witenberg, 2013). Other studies found that while boys engage in more physical and verbal aggression than do girls, the gender differences on indirect/relational aggression was close to zero ($d = -.06$), with girls engaging in slightly higher levels of indirect/relational aggression (Archer, 2004; Card, Stucky, Sawalani, & Little, 2008).

Empirical evidence also suggests that gender and age contribute to student-teacher relationships and attitudes toward bullying; however, the results of such studies are inconsistent. Younger students and girls have been found to hold more positive and empathetic beliefs about victims of bullying (Baldry, 2004; Gini, Pozzoli, Borhit, & Franzoni, 2008; Johnson et al., 2013; Rigby & Slee, 1991; Swearer & Cary, 2003), endorse nonviolent attitudes (Dymnicki, Antonio, & Henry, 2011), and report closer relationships with their teachers (Lynch & Cicchetti, 1997; Rudasill, Reio, Stipanovic, & Taylor, 2010) than do older students and boys. In contrast, another study did not find any gender differences in the level of student-teacher attachment (Anderson, Holmes, & Ostresh, 1999). One study found that ninthand tenth-grade boys expressed significantly more support for action against bullying compared with girls but found that seventh-grade girls expressed significantly more support for action against bullying compared with boys (Boulton et al., 2002). Researchers have found that gender may moderate the relationship between student-teacher relationships and delinquent behavior as well. Another study found that negative student-teacher attachment predicted later delinquency for

both boys and girls, but the effect was stronger for boys. On the other hand, three aspects of school bonding (poor school attachment, poor school commitment, and poor teacher attachment) negatively predicted delinquency for boys, while only negative relationships with teachers predicted delinquency for girls (Liljeberg et al., 2011). The opposite effect has also been found, in that having a strong attachment to school significantly predicted the decrease in girls' (not boys') delinquent behaviors (Anderson et al., 1999).

Although previous studies have elucidated the protective function of student-teacher relationships on bullying involvement, a paucity of research has investigated the role of specific cognitive underlying processes (e.g., attitudes toward bullying) and potential moderating variables (e.g., gender) that contribute to this relationship. Research examining gender and grade differences have also yielded inconsistent results. Therefore, the purpose of this study was to investigate: (a) whether there are group differences (gender, grade, bully/victim status) in student-teacher relationships, involvement in bullying, and attitudes toward bullying; (b) whether attitudes toward bullying mediate the association between student-teacher relationships and bullying behaviors; (c) whether the mediation effect differs by subgroups (bullies and bully-victims); and (d) whether gender moderates the relationship between student-teacher relationships and bullying behaviors. Specifically, it was hypothesized that female and younger students would report more positive student-teacher relationships, less involvement in bullying, and more negative attitudes toward bullying than male and older students. Further, it was hypothesized that students who bully others would report more negative student-teacher relationships and more positive attitudes toward bullying than victims, bystanders, and students who are not involved in bullying. In addition, we hypothesized that attitudes toward bullying would mediate the association between student-teacher relationships and bullying behaviors. Finally, we hypothesized that gender would moderate the relationship between student-teacher relationships and bullying behaviors and predicted that stronger effects would be found for girls compared with boys.

METHOD

Participants

Data were collected from 123 sixth-, 174 seventh-, and 138 eighth-grade students (247 females and 188 males) in three Midwestern middle schools in the United States. Informed consent was obtained from parents, and youth assent was obtained from participants. All middle schools in a mid-sized Midwestern school district were eligible to participate in the current research. Three out of 10 schools agreed to participate. Parents in those three schools were then invited to consent to the

research study. No incentives were provided for participation. The overall parent consent rate was 44% across three schools, or 33%, 49% and 52% at each school; the assent rate was 100%. Participants' ranged in age from 11 to 15 years of age (*M* = 12.77, *SD* = 0.94). The majority of students in the study were Caucasian (71.3%), followed by African American (6.0%), Asian American (4.1%), Hispanic (3.4%), and Eastern European (1.4%). Regarding school demographic information, the three middle schools were similar in size (n = 565, 569, 715) and gender composition (male: 48.5%, 52.9%, 52.6%), but differed in percentage of ethnic minority students (41.2%, 25.8%, 9.7%) and percentage of students receiving free and reduced lunch (65.1%, 43.1%, 26.6%). Analysis of variance (ANOVA) results found that there were no school difference on any of the variables of interest, including physical bullying, verbal bullying, studentteacher relationship, and pro-bullying attitudes. As a result, we analyzed the data from these three schools together.

Measures

Each student completed a demographic questionnaire that included questions about gender, age, grade, first language use, and race/ethnicity. Data were also collected from school records that included demographics, students' GPA, and office disciplinary referral data.

    The Bully Survey-Student Version (BYS-S; Swearer, 2001) is a four-part survey that queries students regarding their experiences with, perceptions, and attitudes toward bullying and victimization. Bullying is defined in each section of the survey with the following definition: "Bullying is anything from teasing, saying mean things, or leaving someone out of a group to physical attacks (hitting, pushing, kicking) where one person or a group of people picks on another person over a long time. Bullying refers to things that happen in school but can also include things that happen on the school grounds or going to and from school." Two scales within the BYSS were used in this investigation. First, *The Verbal and Physical Bullying Scale-Perpetration* (VPBS; Swearer, Turner, Givens, & Pollack, 2008; Radliff, Wang, & Swearer, 2015) is a 10-item scale assessing physical, verbal, and relational bullying on a 5-point Likert-type scale ("never happened" to "always happens"). Consistent with two previous studies (Swearer et al., 2008; Radliff et al., 2015), factor analysis in this study also showed a two-factor solution, with expected items loading onto the physical bullying (3 items: broke their things, pushed them, attacked them; explaining 8.06% of the variance) and verbal/relational bullying (7 items: called them names, made fun of them, said bad things to them, played jokes on them, didn't let them be a part of my group, didn't talk to them, wrote bad things about them; explaining 57.74% of the variance). The means of each subscale were used as indicators for physical and verbal/relational bullying. In the current study, the internal consistency was

α = .74 for physical bullying and α = .92 for verbal/relational bullying. Self-reported physical and verbal/relational bullying significantly correlated with office referrals, rs = .26, .23, ps < .001, respectively, suggesting that VPBS is a valid measure of problem behaviors at school. Secondly, *The Bullying Attitudes Scale* (Swearer & Cary, 2003) is a 13-item scale assessing attitudes toward bullying on a 5-point Likert-type scale ("totally false" to "totally true") with higher scores indicating more probullying attitudes. Sample items included: "Most people who get bullied ask for it." "I don't like bullies." "Bullying is good for wimpy kids." Six items were reverse coded, and the mean of the subscale was used as an indicator for pro-bullying attitudes. Previous studies have found good reliability, ranging from 0.71 (Swearer et al., 2008) to 0.78 (Song, Swearer, Haye, & Bandalos, 2001). The internal consistency for the scale was .71 in the current study.

The School Climate Survey Revised Edition—Elementary and Middle School Version (SCS-ESV; Emmons, Haynes, & Comer, 2002) is a measure designed to assess school climate through student report. The measure consists of 37 descriptive statements about school climate on a 3-point Likert-type scale ranging from 1 = *agree;* 2 = *Not sure*; to 3 = *disagree*. Six dimensions are measured, including a) fairness, b) order and discipline, c) parent involvement, d) sharing, e) student interpersonal relations, and f) student-teacher relationships. In the current study, only the student-teacher relationships subscale with 10 items was used. Sample items included: "My teachers work hard to get me to do well on tests" and "My teachers care about me." Items were reverse coded so that higher scores indicate more positive student-teacher relationships. The mean of the subscale was used as an indicator for positive student-teacher relationships. The internal consistency of the student-teacher relationship subscale was .87.

Data Analysis

Trained graduate research assistants checked each survey to make sure students did not miss any questions before submitting their completed surveys. As a result, we only had missing data on a few items for six participants. Because the percentage of missing data was negligible, we replaced the missing data with subscale means for those six participants and used the mean scores of all subscales in the analyses. To control for the possible effect of school and grade on the outcome variables, school and grade were entered into all analyses as control variables. Specifically, in ANOVA, we entered the school and grade variables as control variables. In regression analysis, we entered two dummy coded variables for school and the grade variable as control variables. To examine the group differences (grade, gender, and bully/victim status) in student-teacher relationships, positive attitudes toward bullying, and involvement in bullying, several analysis of variance tests (ANOVAs) were utilized. Prior to inspecting the ANOVA results, Levene's Test of Equality of Error

Table 1. Means, SDs, and Correlations of Key Variables

Variable	1	2	3	4
1. Student-teacher relationships				
2. Pro-bullying attitudes	–.29***			
3. Physical bullying	–.15**	.27***		
4. Verbal/relational bullying	–.26***	.39***	.68***	
Minimum	1	1	1	1
Maximum	3	3.46	5	5
Mean	2.49	1.96	1.25	1.66
SD	0.46	0.48	.63	1.01

** $p < .01$; *** $p < .001$

Variances and Fmax were used to examine the distributions of the residuals, and we found the homogeneity of variance assumption was tenable. When ANOVA indicated a statistically significant difference among groups, Fisher's least significant difference (LSD) post-hoc test was conducted to further examine the group differences. We chose LSD post-hoc test because we were concerned about Type II error. We did not choose Bonferroni post-hoc tests because Bonferroni tends to have larger critical values, reduce statistical power, and lead to Type II errors. Regression analysis was used to examine the relationship between studentteacher relationships, positive attitudes toward bullying, and involvement in bullying, as well as the moderation effect of gender. Baron and Kenny's (1986) four-step mediation testing approach and Sobel's test were used to determine the mediation effect.

RESULTS

Bully/Victim Classification

Based on students' response to *The Bully Survey-Student Version,* participants were grouped into five statuses: bully, bully-victim, victim, bystanders, or uninvolved in bullying. To measure bullying and victimization, we used the "more than once per month" as a cutoff point in this study as suggested by Solberg and Olweus (2003) because they found using this cutoff point, students involved in bullying scored significantly different from students not involved in bullying. In our study, students who reported frequent engagement in bullying more than once per month, but no victimization were classified as bullies. Students who reported frequent engagement in victimization (more than once per month), but no bullying were classified as victims. Students who reported frequent engagement in both bullying and victimization were classified as bully-victims. Students who reported neither bullying nor victimization, but witness of bullying were classified as bystanders. Students who reported "never" to bullying, victimization, or witness of bullying were classified as

Table 2. Means and SDs by Bully-Victim Groups for Key Variables After Controlling for School Effect

Variable	Bully (n = 47)	Victim (n = 114)	Bully-victim (n = 121)	Bystander (n = 100)	Not involved (n = 36)	F (4, 411) (partial η^2)
Student-teacher relationships	2.38 (0.48) [a]	2.55 (0.42)	2.35 (0.49) [b]	2.58 (0.42)	2.66 (0.39)	6.50*** (.06)
Pro-bullying attitudes	2.32 (0.50) [c]	1.73 (0.37)	2.09 (0.49) [d]	1.93 (0.49) [e]	1.83 (0.41)	17.93*** (.15)

*** $p < .001$

a. Significantly different from victims and bystanders at $p < .05$, and from not involved students at $p < .01$

b. Significantly different from victims, bystanders, and not involved students at $p < .001$

c. Significantly different from bully-victims at $p < .01$, and from victims, bystanders, and not involved students at $p < .001$

d. Significantly different from victims at $p < .001$, and from not involved students at $p < .05$

e. Significantly different from victims at $p < .001$

not involved. Among the 435 students, 47 (10.8%) students self-identified as bullies, 114 (26.2%) as victims, 121 (27.8%) as bully-victims, 100 (23.75%) as bystanders, 36 (8.3%) as not involved in bullying, and 17 students were not classified in any group because they engaged in bullying/ victimization, less than "once per month" and, therefore, did not meet our repetition criteria for bullying/victimization involvement. See Table 1 for the means, SDs, and correlations of key variables.

Group Differences

ANOVA results showed significant grade differences on student's relationships with their teachers, F (2, 427) = 8.11, p <.001, partial η^2 = .04, but no gender differences. LSD post-hoc test showed that sixth graders reported significantly more positive student-teacher relationships than seventh graders (main difference = .22, p <.001) and eighth graders (main difference = 0.11, p <.05). Boys (M = 1.32, SD = 0.71) engaged in slightly more physical bullying than girls (M = 1.20, SD = 0.56), F (1, 427) = 3.68, p = .056, partial η^2 = .01, but the gender difference was not significant. Furthermore, there were neither grade nor gender differences regarding verbal/ relational bullying. After controlling the effect of school and grade, there were significant group differences on student-teacher relationships as well as attitudes toward bullying across bully-victim status, F (4, 411) = 6.50, 17.93, ps <.001, partial η^2 = .06, .15, respectively. Bullies scored significantly higher than bully-victims, who scored significantly higher than bystanders, who scored significantly higher than victims on positive attitudes toward bullying. Furthermore, both bully and bully-victim groups had significantly poorer student-teacher relationships than all the other groups (Table 2).
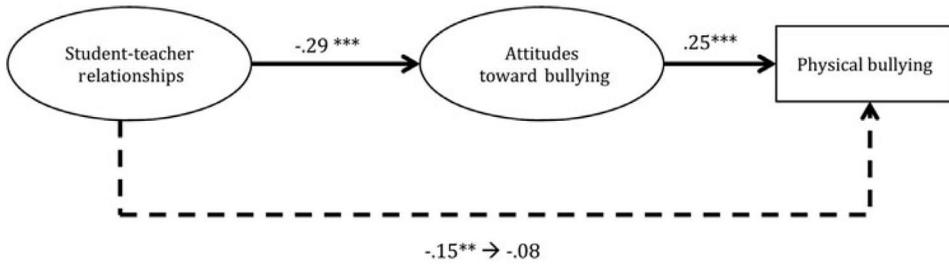
Figure 1. Mediation model for physical bullying. Standardized regression coefficients were reported. ** $p < .01$; *** $p < .001$

Mediation Effect and Moderation Effect

After controlling for the effect of school and grade by entering grade and two dummy variable of school as independent variables in regression, results showed that pro-bullying attitudes partially mediated the relationship between student-teacher relationships and physical bullying as well as verbal/ relational bullying (Table 3, Figures 1, 2). Specifically, student-teacher relationships was a significant predictor for physical bullying, $F(4, 430) = 3.27$, $p = .01$, $\beta = -.15$, $p < .01$. Student-teacher relationships was also a significant predictor for pro-bullying attitudes (the mediator), $F(4, 430) = 11.18$, $\beta = -.29$, $p < .001$. When pro-bullying attitudes and student-teacher relationships were both entered as predictors for physical bullying in the regression, the model was significant, $F(5, 429) = 8.19$, $p < .001$. However, student-teacher relationships became non-significant, $\beta = -.08$, $p > .10$, while pro-bullying attitudes was a significant predictor for physical bullying, $\beta = .25$, $p < .001$. Similarly, student-teacher relationships was a significant predictor for verbal/relational bullying, $F(4, 430) = 9.60$, $p < .001$, $\beta = -.27$, $< .001$. When
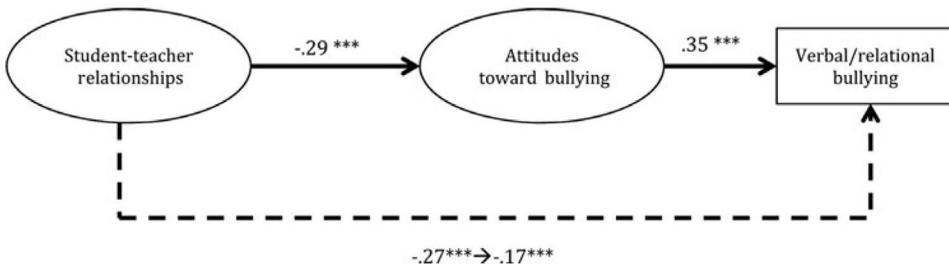

Figure 2. Mediation model for verbal/relational bullying. Standardized regression coefficients were reported. *** $p < .001$

Table 3. Mediation Analyses

Criterion	Predictor	F	df	R^2	B	SE	β
Regressing criterion onto predictor							
Physical bullying		3.27**	4,430	.03			
	Intercept				1.73	0.34	
	School1				–0.08	0.08	–.06
	School2				–0.07	0.07	–.05
	Grade				0.02	0.04	.03
	Relationships				–0.21	0.07	–.15**
Regressing criterion onto mediator							
Attitudes		11.18***	4,430	.09			
	Intercept				2.68	0.25	
	School1				0.08	0.06	.08
	School2				–0.10	0.05	–.10
	Grade				0.004	0.03	.01
	Relationships				–0.31	0.05	–.29***
Regressing criterion onto predictor, after controlling for mediator							
Physical bullying		8.19***	5,429	.07			
	Intercept				0.85	0.37	
	School1				–0.10	0.08	–.07
	School2				–0.03	0.07	–.03
	Grade				0.02	0.04	.03
	Relationships				–0.11	0.07	–.08
	Attitudes				0.33	0.06	.25***
Regressing criterion onto predictor							
Verbal/Relational bullying		9.60***	4,430	.08			
	Intercept				3.26	0.52	
	School1				0.07	0.12	.03
	School2				–0.26	0.11	–.13
	Grade				–0.01	0.06	–.01
	Relationships				–0.60	0.10	–.27***
Regressing criterion onto predictor, after controlling for mediator							
Verbal/Relational bullying		19.56***	5,429	.19			
	Intercept				1.38	0.55	
	School1				0.02	0.11	.01
	School2				–0.19	0.11	–.09
	Grade				–0.01	0.06	–.01
	Relationships				–0.37	0.10	–.17***
	Attitudes				0.72	0.10	.35***

** $p < .01$; *** $p < .001$

pro-bullying attitudes and student-teacher relationships were both entered as predictors for verbal/relational bullying, student-teacher relationships and pro-bullying attitudes were both significant, $F(5, 429) = 19.56$, $p < .001$, $\beta = -.17, .35$, $ps < .001$, respectively. The Sobel test also confirmed both mediation effects, Sobel's test statistic = –4.15, –4.86, $ps < .001$, respectively. After controlling for the effect of school and grade, gender did not moderate the relationship between student-teacher relationships and physical or verbal/relational bullying.

Subgroup Analysis for the Mediation Effect

In order to examine whether the mediation effect differs by subgroups, we conducted the mediation analysis by different bully-victim groups. Because all victims and bystanders had the same scores ("never happened") on bullying perpetration, we only ran subgroup analysis separately with bully and bully-victim groups. Results did not show any significant mediation effects for either the bully group or the bully-victim group. Specifically, studentteacher relationships did not predict physical or verbal/relational bullying in either group.

DISCUSSION

The primary aim of this study was to explore the role of student-teacher relationships and attitudes toward bullying across students' experiences with bullying. Additionally, group differences (gender, grade, and bully/victim status) on the quality of student-teacher relationships, bullying behaviors, and attitudes toward bullying were examined. Although prior studies have emphasized the relationship between school bonding in general and bullying (Cunningham, 2007; Haynie et al., 2001), or student-teacher relationships and bullying (Murray-Harvey & Slee, 2010), this study focused on whether attitudes toward bullying mediated the correlation between students' relationships with teachers and students' bullying behaviors. Overall, the results provide support for the mediation effect of pro-bullying attitudes on the relationship between student-teacher relationships and bullying. Thus, the results suggest that cognitions, such as attitudes, may be influenced by student-teacher relationships, an important focal point for bullying prevention and intervention efforts.

Group Differences

Inconsistent with the previous research, we did not find any gender differences on student-teacher relationships (Lynch & Cicchetti, 1997; Rudasill et al., 2010), attitudes toward bullying (Baldry, 2004; Rigby & Slee, 1991), or involvement in physical or verbal/relational bullying (Crick & Grotpeter, 1995; Robson & Witenberg, 2013). Lack of gender differences in studentteacher relationships is consistent with other research (e.g., Anderson et al., 1999). These findings speak to the complexity that gender differences in verbal/relational bullying may not be as pronounced as previously thought (Swearer, 2008). It is important to not rely on "mean girl" stereotypes and consider relational bullying just a female problem. Since both boys and girls engage in physical bullying and the subtle forms of relational bullying during middle school years, prevention efforts that focus on physical as well as verbal/relational bullying should involve both boys and girls.

In accordance with previous research (Lynch & Cicchetti, 1997), this study also found that sixth graders reported more positive student-teacher relationships compared with seventh and eighth graders. The declining interest in relationships with teachers during adolescence has been well documented in the literature, possibly reflecting adolescents' need to seek autonomy and separate their own goals from the goals of their parents and teachers (Johnson, Crosnoe, & Thaden, 2006). However, the decrease in the quality of student-teacher relationships has a high cost. In the current study, negative student-teacher relationships predicted higher involvement in bullying, which underscores the need to focus on healthy student-teachers relationships in bullying prevention and intervention efforts.

In contrast to previous studies (Pellegrini & Bartini, 2001; Rigby & Slee, 1991; Swearer & Cary, 2003), we did not find grade differences on attitudes toward bullying or bullying behaviors. This may be due to the narrow age range in the current study and the possibility that the age difference may emerge over time. Also, it is possible that students' attitudes toward bullying and bullying behaviors are related to other factors, such as student-teacher relationships and commitment to prosocial norms at school. This may explain why empirical studies are not consistently finding grade effects on bullying (e.g., Boulton et al., 2002). Consistent with other research (Haynie et al., 2001), this study also found that the bully-victim group and the bully group scored significantly lower than other groups on the quality of student-teacher relationships and higher than other groups on positive attitudes toward bullying. The current study identified that bullies and bully-victims appear to be a group of students who experience less positive relationships with their teachers, are less likely to enjoy school, and hold positive attitudes toward bullying, which may contribute to their bullying behaviors.

Student-Teacher Relationships and Bullying

The findings from the current investigation support the three social theories used to guide this study. Specifically, results indicate that adolescents are less likely to engage in bullying perpetration when they have secure bonds and positive relationships with their teachers who are important adults in their lives. Results from this study contribute to the extant literature by demonstrating that attitudes toward bullying mediate the relationship between studentteacher relationships and bullying behaviors. As suggested by social ecological theory, an individual's behavior is the result of the complex interaction between individual factors and environmental factors (Bronfenbrenner, 1979). When students have positive relationships with their teachers, they are more likely to internalize or conform to teachers' values (i.e., negative attitudes toward bullying), which may contribute to less bullying. It is interesting that after controlling for attitudes toward bullying, the student-teacher relationship was no longer a significant predictor for physical aggression. It is possible

that teachers communicate negative attitudes toward physical bullying more explicitly than verbal/ relational bullying, for example, by intervening more during physical bullying, and viewing physical bullying as more harmful or serious than verbal/relational bullying (Holt & Keyes, 2004; Holt, Raczynski, Frey, Hymel, & Limber, 2013). Furthermore, when mediation analyses were conducted by subgroups (bullies and bully-victims separately), no mediation effect was found for either group. Specifically, student-teacher relationships did not predict physical bullying or verbal/relational bullying for either group. It is possible that student-teacher relationships influence whether or not students engage in bullying perpetration (the difference between being a victim or bystander and a bully or bully-victim) as well as the degree of perpetration. So, by removing the victims and bystanders from the analysis, we removed a large portion of the variance, and, as a result, the predictor (student-teacher relationships) became non-significant.

Limitations

Although several interesting findings emerged from the current study that have direct implications for bullying prevention and intervention programming, there are also some limitations. Almost 71% of the sample was Caucasian and all participants were middle school students, thus limiting the generalizability of the results to other races/ethnicities and to elementary and high school populations. In addition, all data were collected via self-report and common method variance may be a concern. However, it is important to note that students' perceptions of bullying and victimization are possibly more accurate that other's report because many covert forms of bullying (i.e., social exclusion and cyber-bullying) may go undetected by teachers and parents (Card & Hodges, 2008; Holt, Kaufman Kantor, & Finkelhor, 2009). It is also important to note the significant correlations between selfreported bullying behaviors and office referrals in the current study, which provides evidence for the validity of our self-report bullying measure. Future studies should integrate information from multiple informants (e.g., parents and teachers) to provide additional information regarding multiple perspectives of bullying. Observational data might address this issue; however, with the necessary constraints of active parental consent and personnel resources needed, observational data are also potentially constricted and confounded, especially in middle school settings.

Directions for Future Research

Although these results lend support for the relationship between studentteacher relationships, attitudes toward bullying, and involvement in bullying, additional research in this area is warranted. Specifically, studies are needed to examine this

relationship with elementary and high school students since students' perceptions of school are likely to be impacted by age. In order to gain a clearer understanding of the influence student-teacher relationships have on bullying, more diverse samples are needed (e.g., rural and/or innercity schools). For instance, poor quality student-teacher relationships and higher acceptability of aggression toward others may be common in schools that are characterized by dilapidated conditions and high levels of violence. Furthermore, longitudinal studies are needed to test the direction of effects among student-teacher relationships, attitudes, and bullying. It is possible that student-teacher conflict predicts peer victimization rather than closeness or positive student-teacher relationships (Reavis et al., 2010). Future studies should measure student-teacher conflict and support separately, and examine their relationship with bullying behaviors.

Implications for Bullying Prevention and Intervention

The results from this study pave the way for innovative approaches by combining both cognitive and behavioral interventions within a relational framework for bullying interventions and point to possible areas of intervention and prevention for bullying for schools and educators. In order to stop bullying among adolescents, prevention and intervention programs need to target the social context in which students spend the majority of their waking hours. Consistent with other research that argues for the importance of improving school level factors (e.g., school learning environment, school policy on bullying, school climate evaluation) in order to reduce bullying (Kyriakides et al., 2014), the results of the current study highlight the importance of student-teacher relationships in bullying prevention and intervention and cognitive factors that may influence involvement in bullying. Given the relationship between students and teachers, attitudes toward bullying, and involvement in bullying, direct efforts in promoting studentteacher relationships among students who perpetrate bullying (i.e., bully and bully-victim groups) will be important in decreasing their bullying behaviors and cognitions supportive of bullying. Effective interventions need to aim at restructuring the school climate so that the interactions between students and teachers are positive and students perceive their teachers as caring, supportive, and fair. Furthermore, interventions may focus on helping teachers to be more responsive to the cognitive and emotional needs of students in order to promote positive student-teacher relationships and bonding (Jimerson, Coffino, & Sroufe, 2007). Interventions are likely to be most effective if they strive to develop prosocial norms and a positive culture in which bullying is not accepted nor rewarded. If kindness and prosocial behaviors are rewarded in place of bullying, students will be more likely to adopt negative attitudes toward bullying. Lastly, it is important for teachers and students to be aware of the seriousness of verbal/relational bullying and for teachers to communicate

negative attitudes toward verbal/relational bullying as well as physical bullying (Waadorp, Pas, O'Brennan, & Bradshaw, 2013). Additionally, it is important to provide teacher training regarding the different types of bullying, the negative impact on students, and to encourage teachers to intervene during verbal/relational bullying, not just physical bullying. When the cognitive, behavioral, and relational complexities of bullying are the foci of bullying prevention and intervention efforts, we should see a generation of youth who value and promote kindness over bullying.

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