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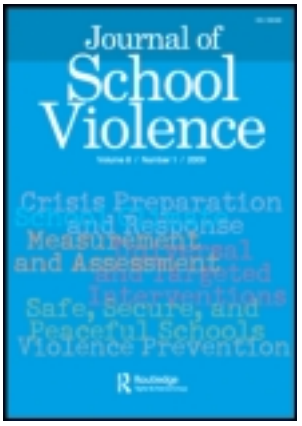

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An Analysis of Bullying Among Students Within Schools: Estimating the Effects of Individual Normative Beliefs, Self-Esteem, and School Climate

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An Analysis of Bullying Among Students Within Schools: Estimating the Effects of Individual Normative Beliefs, Self-Esteem, and School Climate

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The current study examined the relations among self-esteem, approving normative beliefs about bullying, school climate, and bullying perpetration using a large, longitudinal sample of children from elementary, middle, and high school. Self-report surveys were collected at two points in time over the course of 1 year from 7,299 ethnically diverse students (47.8% males, 52.2% females) in 5th, 8th, and 11th grades in 78 schools or community centers across Colorado. Results of ordinary least squares regression analyses indicated that self-esteem, school climate, and normative approval measured at Time 1 significantly predicted self-reported bullying perpetration 1 year later at Time 2, controlling for Time 1 bullying. Further, the effect of self-esteem on bullying perpetration was moderated by perceptions of school climate. When perceptions of school climate were negative (indicating poor school climate), high self-esteem predicted higher levels of bullying perpetration. In contrast, when perceptions of school climate were positive, high

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self-esteem predicted lower levels of bullying perpetration. The findings are discussed in terms of the need to consider individual and contextual factors and how they interact in understanding and preventing bullying in schools.

KEYWORDS bullying, normative beliefs, self-esteem, school climate

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Efforts to prevent school violence in recent years have emphasized the problem of bullying, defined as repeated aggression in the context of a power imbalance (Olweus, 1994). This attention is related, in part, to research findings demonstrating that bullying is prevalent across the elementary and secondary school years (Gini, Pozzoli, Borghi, & Franzoni, 2008; Haynie et al., 2001; Nansel et al., 2001), and has serious consequences for both bullies (Pepler et al., 2006) and victims (Hawker & Boulton, 2000; Juvonen, Graham, & Schuster, 2003). Such findings have underscored the need to address bullying in schools and have led to a marked increase in empirical research focused on etiology and prevention (Cook, Williams, Guerra, Kim, & Sadek, 2010; Cornell, 2006).

Given that bullying, by definition, is embedded in a social context where individuals are engaged in ongoing relationships, the primary focus of extant research on individual-level predictors of bullying behavior is somewhat surprising and surely incomplete. Yet without a social context, repeated aggressive acts towards others are not possible (Swearer & Doll, 2001). Indeed, bullying is set apart from other forms of aggression by the following characteristics—ongoing relationships within a social context that involve repeated forms of aggressive behavior involving a power imbalance. Accordingly, schools provide an optimal context for bullying because the same children are involved in social relationships on a daily basis over an extended time. The implication is that characteristics of schools should be important in promoting or minimizing bullying behavior, an issue addressed in the present study. Moreover, incorporating school characteristics is consistent with an ecological systems approach in which the individual is nested within multiple, interrelated contextual settings (Bronfenbrenner, 1979). Some studies have looked at contextual correlates of bullying, with school climate being the most frequently studied school characteristic linked to bullying. Still, integrative reviews and meta-analyses have found multiple individual and contextual-level predictors of bullying that must be considered simultaneously. As Cook et al. (2010) concluded from a recent meta-analytic study of predictors of bullying:

> The typical *bully* is one who exhibits significant externalizing behavior, has internalizing symptoms, has both social competence and academic

> challenges, possesses negative attitudes and beliefs about others, has negative self-related cognitions, has trouble resolving problems with others, comes from a family environment characterized by conflict and poor parental monitoring, is more likely to attend a school with a negative atmosphere, is influenced by negative community factors, and tends to be negatively influenced by his or her peers. (pp. 75–76)

In addition to addressing the ecology of the school in a single study, examining interactions between school and individual characteristics is also important. That is, do individual characteristics linked to bullying behavior have different effects on actual behavior contingent on the nature of the school context? For example, students who believe bullying is acceptable should be more likely to engage in this behavior in schools where teachers look the other way and sanctions are infrequent as compared to schools that have a low tolerance for bullying. A comprehensive understanding of bullying requires the identification of how student and school characteristics interact. The present study addressed this issue as well.

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LITERATURE REVIEW

To our knowledge, no longitudinal studies of bullying in a large sample across multiple grades have estimated the independent effects of student and school predictors of bullying as well as their interaction effects. Therefore, a brief literature review of each construct of interest (school climate, approving normative beliefs about bullying, and self-esteem) is provided and a rationale for proposed interactions is posited. In addition, although studies of aggression and violence in school increasingly have identified bullying as a primary outcome of interest, slippage persists in the precise definition and measurement of bullying as distinct from aggression (Cook et al., 2010). For this reason, and given the similarity between bullying and proactive forms of aggression, literature related to children's aggressive behavior in understanding the development of bullying is included in the review to justify the incorporation of the student and school predictors of this behavior.

School Characteristics

One of the most salient factors involved in bullying behavior is the social support individuals receive from both adults and peers at school (DeMaray & Malecki, 2003). Students who are disconnected from significant others (such as teachers, faculty, administration, and other students) should be less likely to act in a cooperative and prosocial manner. This should extend to student perceptions of school climate, that is, students who perceive their schools to be unfriendly, unfair, and nonsupportive may be less likely to play by the

rules. Picking on and bullying other students should be more prevalent in a context that is not supportive and nurturing. Indeed, studies have found that students attending schools high in rates of conflict, with less of a perceived supportive environment, are more likely to participate in bullying (Nansel et al., 2001). Hence, the first hypothesis tested was as follows: The more the school climate is perceived as supportive, the lower will be the frequency of bullying.

Beliefs About Behavior and Beliefs About Self

Individual children's beliefs about the normative status of behavior have been linked to both bullying and aggression. Stated simply, as children learn that such behaviors are acceptable and appropriate, they are more likely to engage in bullying or other forms of aggression. Children develop normative beliefs about behavior that guide their actions. Children who are more aggressive or engage in bullying during the early elementary years come to view this behavior as more appropriate. In turn, as normative beliefs stabilize during the late elementary years, they predict more aggressive behavior (Huesmann & Guerra, 1997). These individual beliefs also are contingent on the normative approval of fellow classmates. For example, Henry et al. (2000) found that students were more likely to act aggressively in classrooms where students and teachers increased the salience of aggressive norms. In addition, studies have examined gender differences in normative support for aggression, with findings demonstrating greater normative support for physical aggression among boys (e.g., Crick, Bigbee, & Howes, 1996). Not surprisingly, approving beliefs about more indirect forms of bullying have been found to be specifically associated with increases in insults, social exclusion, and the spreading of false rumors more characteristic of girls (Werner & Nixon, 2005). Hence, the second hypothesis tested is as follows: The more bullying is normatively approved, the greater will be the frequency of this behavior.

Besides individual normative beliefs about bullying, the present study examined whether this form of aggressive behavior was predicted by beliefs about the self, particularly an individual's sense of self-esteem. The selection of this individual characteristic is strategic given the mixed results that have been reported in previous studies. Much of the research on the role of self-esteem has examined its influence more generally on aggressive behavior from childhood through adulthood. Although intuitively appealing to expect high self-esteem to predict lower involvement in bullying and low self-esteem to predict higher involvement in this behavior, empirical findings have been mixed. Consistent with this expectation, some studies have found that higher levels of bullying are associated with low self-esteem (Andreou, 2001; Jankauskiene, Kardelis, Sukys, & Kardeliene, 2008; O'Moore & Kirkham, 2001). However, contrary to this expectation, other

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studies have found low self-esteem to be associated with lower involvement in bullying (e.g., Schneider & Leitenberg, 1989), and yet other studies have found no relationship at all (Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999; Seals & Young, 2003). A somewhat separate strand of research on college-age students found that aggression in general was related to both low and high self-esteem, depending on the security or insecurity of the self-view, with high but insecure self-esteem increasing the likelihood of aggression and bullying in response to ego threats (Baumeister, Smart, & Boden, 1996). Given the mixed findings, the present study explored the relationship between self-esteem and bullying without positing a specific hypothesis, but more importantly, the possibility that the nature of the school climate may moderate this relationship was also explored. Evidence of moderation would provide at least one explanation for the mixed findings reported in previous studies. Expectations about moderation are stated next.

THE PRESENT STUDY

This research tested the two previously stated hypotheses bearing on school climate and the normative approval of bullying. Additionally, the interrelationships between school climate, self-esteem, and bullying behavior were empirically examined. Requisite data were collected over the course of two academic years in a large sample of students in Grades 5, 8, and 11 attending 78 schools or community centers across Colorado. Besides estimating independent effects of each predictor, interaction effects were also estimated to determine whether the nature of the school climate (a contextual predictor) moderated the relations between normative beliefs, self-esteem (individual predictors), and bullying behavior.

The rationale for expecting moderating influences can be summarized succinctly. Because bullying is an interpersonal and dynamic process embedded within a social context, higher self-esteem should lead to an increased frequency of bullying only when that context, as measured by perceived school climate is viewed as negative. Conversely, higher self-esteem should result in lower levels of bullying when the school context is perceived as positive. The reason for these expectations is that in a less supportive school setting, bullying may be an effective currency for feeling good about oneself and gaining status and respect. In contrast, within a school setting perceived as supportive, students should be more likely to derive self-esteem from active participation in cooperative, fair, and prosocial activities. A similar pattern of interrelatedness between normative approval of bullying, school climate, and bullying behavior was expected. Youth having high normative approval of this behavior and negative perceptions of school climate should be most likely to bully, with the influence of normative approval being dampened by positive perceptions of school climate. In

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short, the likelihood that students will act on their beliefs is greater when the school setting is nonsupportive and vice versa.

METHOD

Overview

The data for the present study were part of a 3-year bullying prevention initiative in Colorado, fully supported by The Colorado Trust, a private grant-making foundation in Denver. School districts, individual schools, and community centers from 40 of the 64 counties in the state participated in this initiative. Survey data were collected in 78 schools or community centers, with data collection occurring in all classrooms for each of the target grades. As in many schools across the United States, those involved in the present study were actively attempting to address bullying in a variety of ways. However, no uniform intervention was in place between assessments at Time 1 and Time 2 (henceforth, T1 and T2). All data collection was conducted in compliance with the protocol approved by the Human Subjects Review Board of the Colorado Foundation for Families and Children, including acquiring informed parental consent and youth assent.

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Participants

The present analysis was based on data from the fall (T1) and spring (T2) of the 2006–2007 and 2007–2008 academic years, collected from new samples of students in the 5th, 8th, and 11th grades each year, which allows analysis of single-year, T1 to T2 changes among student participants. An analysis was conducted to determine whether estimated effects varied by year of data collection (i.e., 2006–2007 academic year and 2007–2008 academic year). No statistically significant differences by year were found; therefore, both years were combined and analyzed as a single sample (i.e., T1 predictors associated with T2 measurements of the frequency of bullying). Across both cohorts, 7,299 students participated in the study. Of this sample, 3,798 youth were eligible for the fall data collection in 2006, and 3,501 were eligible in the fall of 2007. Participants were 49% male and from diverse ethnic backgrounds (59% non-Latino White, 24% Latino, 4% Black, 3% Asian or Pacific Islander, 2% Native American, 8.0% other). The age breakdown was as follows: 33% were 10–12 years of age, 49% were 13–15 years of age, and 18% were 16–19 years of age.

Measures

Bullying perpetration was measured with an eight-item scale adapted from Espelage, Holt, and Henkel (2003). It included five items tapping physical

bullying and negative bystander behavior, and three items tapping verbal bullying. A principal components factor analysis showed that all items loaded on a single factor (with factor loadings ranging from .61 to .76 with T1 data and .64 to .79 with T2 data), and a reliability analysis indicated they were internally consistent (T1 alpha = .85 and T2 alpha = .86). In all items, reference was made to bullying specifically by noting that the behavior was repeated and that the target was either "identified" or weaker. An example of a physical bullying item was "I pushed, shoved, tripped, or picked fights with students I know are weaker than me." For T1 items, students were asked to "mark how often these things have happened in the previous year." For T2 items, they were asked to "mark how often these things have happened since the beginning of the school year." Response options included never, one or two times, several times, and a lot. All items were summed and divided by eight to arrive at a mean score.

Self-esteem was measured with a four-item scale adapted from the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Following the procedures of Salmivalli, Kaukiainen, and Voeten (2005), participants were instructed to answer items based on how they felt when around their peers so that self-esteem would be measured within a specific social context. An example of a self-perception item was "I feel I am just as good as other students." These items loaded on a single factor (with factor loadings ranging from .72 to .80 with T1 data and .76 to .84 with T2 data), and the indices had acceptable reliability (T1 alpha = .75 and T2 alpha = .81).

Normative beliefs about bullying were measured with a six-item index adapted from the Normative Beliefs About Aggression Scale (Huesmann & Guerra, 1997). Students were asked to indicate how "wrong" or "OK" bullying behaviors were on a four-point scale ranging from *really wrong* to *perfectly OK*. The items loaded on a single factor (with factor loadings ranging from .78 to .84 with T1 data and .82 to .86 with T2 data) and were internally consistent (T1 alpha = .89 and T2 alpha = .91). An example item included "It is wrong or OK when students push, shove, or pick fights with weaker students."

Perceived school climate was measured with an eight-item scale adapted from Furlong et al. (2005). Participants were asked to indicate the extent to which they agreed with statements about their school environment with response options including *really disagree, disagree, agree,* and *really agree*. The items loaded on a single factor (with factor loadings ranging from .57 to .78 with T1 data and .60 to .80 with T2 data), and this measure had acceptable levels of internal reliability (T1 alpha = .85 and T2 alpha = .87). An example of a perceived school climate item was "My school is a good place to be." Lower scores indicated perceptions of a non-supportive school climate, and higher scores indicated perceptions of a more supportive school climate.

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Procedure

The survey was administered in English or Spanish as needed. Data were collected by trained assistants in schools using a wireless response pad in classrooms or in computer labs. The data collectors explained the study, assisted youth in logging on to the password-protected questionnaire or using the wireless response pad, read the questions aloud, and were available for help during survey administration. A small percentage of make-up administrations (less than 2%) were conducted using paper-and-pencil measures. No difficulties in administration for any formats were noted.

Analysis Plan

The data had a hierarchical structure (students nested within schools and community centers). However, ordinary least squares (OLS) regression was used to estimate the effects of individual perceptions of self-esteem, normative beliefs about bullying, and school climate on bullying perpetration instead of hierarchical linear modeling (HLM) for two reasons. First, the measures represented students' perceptions and thus were characteristics of individual youth. Second, the overwhelming majority of the variance in the dependent variable of this study, T2 bullying perpetration, was within, not between schools, thus justifying an individual, not a multilevel analysis.

Only nine community centers were included in the project, and student participants in these centers represented only about two percent ($n = 141$) of the total student sample. Given their small representation, empirical results including or excluding these cases were virtually identical. Additionally, no statistically significant differences by rural or urban location were found when this dichotomous variable was included in the analyses; therefore, it was excluded from the results reported below.

RESULTS

The overall case loss from missing data was about 42% for the total sample. About 18% of missing cases was due to non-response at T1 measurement, and about 24% was due to attrition from T1 to T2. To compensate for the missing data, multiple imputation with five iterations was conducted (Allison, 2002; McKnight, McKnight, Sidani, & Figueredo, 2007). Analytical results using list-wise deletion of missing cases were compared with those using multiple imputation, and no substantial differences were detected (i.e., conclusions drawn would be the same); therefore, the results reported next are based on multiply imputed data.

Table 1 presents means, standard deviations and correlations for key measures used in the analysis. Table 2 shows the results of estimating a fully

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TABLE 1 Correlation Matrix of Variables in the Analysis

Variables	T1 bullying	T2 bullying	Normative beliefs	Self-esteem	School climate
T1 bullying					
T2 bullying	.626				
Normative beliefs	.429	.349			
Self-esteem	−.220	−.135	−.163		
School climate	−.477	−.369	−.338	.366	
M	1.383	1.435	1.298	3.200	2.951
SD	.441	.465	.489	.529	.511

Note. T1 = Time 1; T2 = Time 2.

TABLE 2 Variance Components of T1 and T2 Bullying Perpetration (N = 7,299 Students Within 78 Schools and Community Centers)

Variance components	T1 bullying	T2 bulling	Normative beliefs	Self-esteem	School climate
Between schools	.015	.014	.008	.005	.039
Within schools	.180	.200	.229	.275	.220
Intraclass correlations	.077	.065	.034	.018	.151

Note. T1 = Time 1; T2 = Time 2.

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unconditional HLM model to partition the variance in key measures within and between schools. Only 6.5% of the variance of T2 bullying was between schools (7.7% for T1 bullying). Between school variance for the two personal characteristics, self-esteem and normative beliefs, was even smaller (1.8% and 3.4%, respectively). Perceived school climate had the greatest between school variance (15.1%), which should be expected since it is a perception of the school context, not of a personal characteristic.

The results of OLS regression analyses predicting T2 levels of bullying are displayed in Table 3. As shown in Model 1, T1 bullying significantly predicted T2 bullying perpetration (b = .603, t = 54.818, p < .05). Males were significantly more likely to report bullying perpetration than females (b = .076, t = 8.444, p < .05), and compared to other age groups, those ages 13–15 were also more likely to report bullying (b = .084, t = 9.333, p < .05). Self-esteem had a significant positive effect on T2 bullying (b = .020, t = 2.222, p < .05), while perceived school climate had a negative estimated effect (b = –.063, t = –6.300, p < .05). Those with high self-esteem and those with negative perceptions of school climate were more likely to report bullying behavior at T2. Model 2 tested the hypothesis that school climate moderated the relationship between self-esteem and bullying, adding an interaction between these two measures to the equation estimated. The independent effect of self-esteem (b = .136, t = 3.778, p < .05) became almost seven times greater in magnitude, and the interaction term was significant and negative (b = –.041, t = –3.47, p < .05). These results suggested that self-esteem is positively associated with bullying when school climate is

TABLE 3 OLS Regression Analyses Predicting T2 Bullying Perpetration

	Model 1		Model 2	
Variables	*b* (*SE*)	β	*b* (*SE*)	β
T1 bullying	.603* (.011)	.573	.607* (.011)	.576
Gender[a]	.076* (.009)	.081	.076* (.008)	.081
Age[b]	.084* (.009)	.091	.082* (.009)	.089
Self-esteem	.020* (.009)	.023	.136* (.036)	.155
Climate	−.063* (.010)	−.070	.067 (.040)	.074
Climate × Self-Esteem	—	—	−.041* (.012)	−.229
Intercept	.646* (.043)		.278* (.118)	
R^2	.412		.413	

Note. T1 = Time 1.
[a]Males = 1, females = 0. [b]Age 13–15 = 1, others = 0.
*$p < .05$.

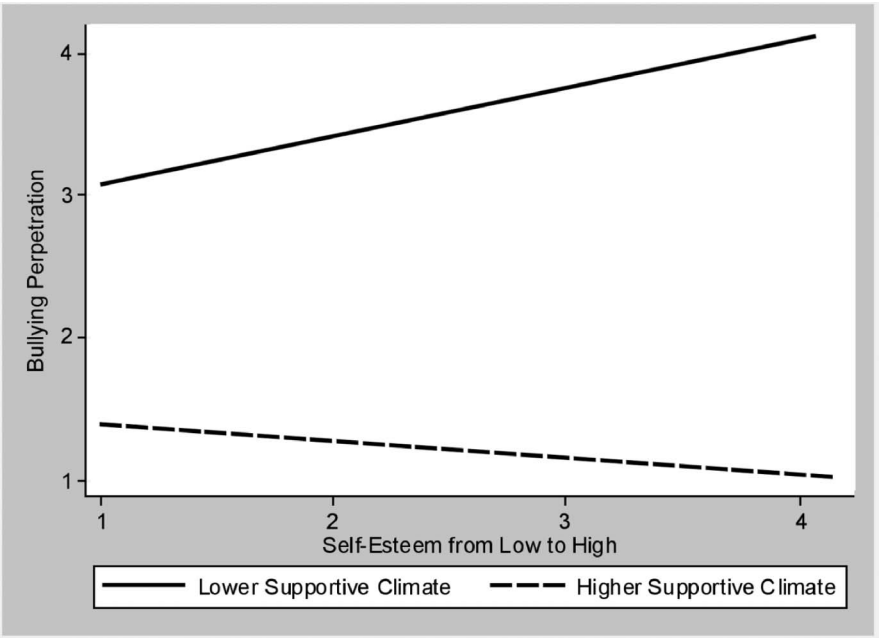

FIGURE 1 The empirical relations between bullying perpetration and self-esteem within schools perceived to have lower or higher supportive climates (values on the y-axis indicate perpetration ranging from 1 = *never* to 4 = *a lot*).

perceived as nonsupportive but negatively associated with bullying when it is perceived as supportive. As shown in Figure 1, self-esteem and bullying were positively related within schools having nonsupportive climates but negatively related within schools perceived to be supportive.

Table 4 summarizes the results of OLS regression analyses involving normative beliefs about bullying. Estimating Model 1 showed that approving

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TABLE 4 OLS Regression Analyses Predicting T2 Bullying Perpetration

	Model 1		Model 2	
Variables	*b* (*SE*)	β	*b* (*SE*)	β
T1 bullying	.583* (.012)	.556	.587* (.012)	.557
Gender[a]	.073* (.009)	.076	.072* (.007)	.077
Age[b]	.088* (.008)	.092	.087* (.009)	.094
Approval	.038* (.010)	.041	−.018 (.037)	−.019
Climate	−.051* (.010)	−.064	−.079* (.020)	−.087
Climate × Approval	—	—	.021 (.013)	.058
Intercept	.650* (.040)		.723* (.061)	
R^2	.413		.413	

Note. T1 = Time 1.
[a]Males = 1, females = 0. [b]Age 13–15 = 1, others = 0.
*$p < .05$.

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beliefs was significantly and positively associated with T2 bullying perpetration ($b = .038$, $t = 3.800$, $p < .05$). Further, school climate was once again a significant and negative predictor of T2 bullying ($b = –.051$, $t = –5.100$, $p < .05$). In Model 2, the interaction between normative beliefs and school climate was added to test the hypothesis that climate moderated the relationship between beliefs and bullying behavior. The estimated interaction effect, however, was nonsignificant ($b = .021$, $t = 1.615$, $p = .109$).

DISCUSSION

The results showed that bullying perpetration is highly stable from T1 to T2, suggesting this behavior is common and persistent among youth. Moreover, it tends to be higher among males and youth 13–15 years of age, typically students in middle school, as reported in previous studies (Eron, Huesmann, Brice, Fischer, & Mermelstein, 1983; Karriker-Jaffe, Foshee, Ennett, & Suchindran, 2008; Koops & de Castro, 2004). As expected, individual perceptions of self-esteem, school climate, and approving normative beliefs were relevant predictors of subsequent bullying behavior. In addition to the estimated independent effects, a significant interaction effect was found between school climate and self-esteem. That effect suggested that the way in which self-esteem is expressed varies by social context. Youth with high self-esteem participating in schools considered supportive apparently found that context reaffirming and thus were less likely to resort to bullying behavior. However, within schools perceived as nonsupportive, higher self-esteem was associated with higher bullying.

Approving normative beliefs and school climate significantly predicted T2 bullying as expected. Specifically, youth who reported approving beliefs about bullying behavior and who held more negative perceptions of

school climate were more likely to report bullying perpetration one year later. However, no evidence was found that school climate moderated the relationship between approving normative beliefs and bullying perpetration.

Results from the present study were in line with previous research demonstrating a negative association between school climate and bullying perpetration (i.e., Craig & Pepler, 1997; Nansel et al., 2001; Williams & Guerra, 2007), as well as a positive relation between normative approval of bullying and involvement in bullying behavior (i.e., Huesmann & Guerra, 1997; Werner & Nixon, 2005; Zelli, Dodge, Lochman, Laird, & Conduct Problems Prevention Research Group, 1999). Furthermore, this study provides evidence bearing on the disparate results reported in the literature about the connection between self-esteem and different forms of aggression, including bullying, with the key point being that the social context in which youth participate (i.e., the school setting) can shape the expression of self-esteem.

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Study Limitations

A few limitations should be noted. First, data were acquired exclusively through self-reported methods. Whenever individuals are questioned about their own antisocial behavior, demand characteristics may curb the accuracy of their report. Nevertheless, similar prevalence rates of bullying perpetration were found in the present study as commonly reported in other studies using other data collection procedures (e.g., Craig & Pepler, 1997). Further, archival data from schools were not available; regardless, such data have severe limitations because of nondetection and nonreporting. Second, future research should utilize mixed methods so the rich, in-depth information can be obtained and used to clarify further the findings of quantitative research. Nevertheless, the current study found that individual perceptions of contextual factors such as school climate, in addition to proximal normative beliefs about bullying and perceptions of self-esteem were important in predicting subsequent bullying behavior.

Conclusion

Altogether, the present study indicated the importance of considering school context in studies of bullying behavior, in addition to relevant individual characteristics of youth. By nature, bullying involves social interaction between two or more parties within a context of ongoing social interaction. Hence, person-in-context interactions should be anticipated, and the failure to address these interactions may limit our understanding that bullying involves not just personal but also social dynamics. The results of the present study suggested that preventive interventions must address more than proximal, personal characteristics, such as self-esteem.

They must also address more distal contextual aspects, such as perceived respect from the adults in their school and the feeling that one's school is a good place to be. Moreover, this research adds to a growing body of literature indicating that preventive efforts should be tailored to the different needs of youth at particular sites. Universal programs may be an adequate starting point, but they may not provide the specific formula needed by students in disparate locations (Guerra & Leidy, 2008).

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