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Authoritative School Discipline: High School Practices Associated With Lower Bullying and Victimization

Anne Gregory, Dewey Cornell, Xitao Fan, Peter Sheras, Tse-Hua Shih, and Francis Huang
University of Virginia

In this study we examined authoritative discipline theory, which posits that 2 complementary aspects of school climate—structure and support—are important for adolescents' safety in school. Using a statewide sample of over 7,300 ninth-grade students and 2,900 teachers randomly selected from 290 high schools, we showed, using hierarchical linear modeling, that consistent enforcement of school discipline (structure) and availability of caring adults (support) were associated with school safety. Structure and support were associated with less bullying and victimization after we controlled for size of school enrollment and the proportion of ethnic minority and low-income students. These findings suggest that discipline practices should not be polarized into a "get tough" versus "give support" debate because both structure and support contribute to school safety for adolescents.

Keywords: adolescence, high schools, at-risk students, learning environments, classroom management

There is currently a wide disparity in high school discipline practices, ranging from schools that demand behavioral conformity and compliance to those that emphasize student autonomy and independent decision making (Stronach & Piper, 2008). Reforms in discipline policies range from the systematic reinforcement of positive behavior (Bohanon et al., 2006) to automatic expulsion for an ever-widening list of offenses (American Psychological Association Zero Tolerance Task Force, 2006). Despite the variety of approaches and reforms, there is little research identifying the characteristics of a safe high school environment.

Safety Problems in Schools

School safety is not a problem confined to a few troubled schools. Data from multiple sources using different methods indicate the pervasiveness of the problem. According to principal reports on the national School Survey on Crime and Safety (National Center for Educational Statistics [NCES], 2007), 95% of American high schools experienced at least one violent crime in 2005–2006. According to victim reports from the National Crime Victimization Survey (NCES, 2007), approximately 1.5 million crimes were committed against students (ages 12–18) at school in 2005, including 136,500 serious violent crimes. Although school crime rates have fallen over the past 10 years, the overall rate at school (57 per 1,000 students) remains higher than the rate away from school (47 per 1,000; NCES, 2007). Bullying and fighting, which typically are not counted in crime statistics, are even more pervasive. Approximately 28% of ninth-grade students reported being victims of bullying at school in the past 6 months, including 21% who reported a physical injury (NCES, 2007). In 2005, 14% of Grades 9–12 students reported being in a physical fight on school property (NCES, 2007). The consequences of student victimization include depression (Hawker & Boulton, 2000), low academic performance (Holt, Finkelhor, & Kantor, 2007), and a diminished sense of academic belonging (Holt & Espelage, 2003).

Teacher surveys also document the extent of the problem. Thirty-five percent of teachers reported that student misbehavior interfered with their teaching (NCES, 2007). Approximately 7.5% of secondary teachers reported being threatened with physical injury, and 2.3% reported being physically attacked by a student in 2003–2004 (NCES, 2007).

School discipline sanctions are another, albeit imprecise, indication of school safety (Heaviside, Rowand, Williams, & Farris, 1998; Morrison, Redding, Fisher, & Peterson, 2006). According to the Indicators of School Crime and Safety (NCES, 2007), 48% of public schools took serious disciplinary action (ranging from suspensions of at least 5 days to expulsion from school) for incidents such as fights and possession of a weapon. Approximately three million students receive school suspensions, and 97,000 students are expelled each year (U.S. Department of Education, 2000).

High schools differ in the degree to which they are safe environments for students (D. C. Gottfredson, 2001). Several demographic risk factors have been identified in previous research. Larger schools tend to have more fights and suspensions (Stewart,

Anne Gregory, Dewey Cornell, Xitao Fan, Peter Sheras, Tse-Hua Shih, and Francis Huang, Curry School of Education, University of Virginia.

Francis L. Huang is now at the Phonological Awareness Literacy Screening Office, University of Virginia.

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Correspondence concerning this article should be addressed to Anne Gregory, who is now at the Graduate School of Applied and Professional Psychology, Rutgers University, 152 Frelinghuysen Road, Piscataway, NJ 08854. E-mail: annegreg@rci.rutgers.edu

2003) as well as greater school crime and victimization (D. C. Gottfredson, 2001). Compared to schools with a greater proportion of high-income students, schools with more low-income students tend to have more victimization (Bauer, Guerino, Nolle, & Tang, 2008; Khoury-Kassabri, Benbenishty, Astor, & Zeira, 2004) and more frequent fighting and suspensions (Stewart, 2003). In general, family poverty is consistently linked to youth violence (e.g., LeBlanc, Swisher, Vitaro, & Tremblay, 2008; Devoe, Peter, Noonan, Snyder, & Baum, 2005; U.S. Department of Health and Human Services, 2001). The proportion of non-White students in a school is also regarded as a risk factor for school violence (G. D. Gottfredson, Gottfredson, Payne, & Gottfredson, 2005), but typical measures of socioeconomic status do not adequately distinguish race from social class (Hosp & Reschly, 2004). These demographic risk factors are important, but they are not determinative of school safety, and research is needed to identify school practices that maintain safety even under challenging conditions.

Developmental Theory and School Climate

Adolescent Developmental Needs

For decades, adolescence has been characterized as a time when youth shift their focus from family to peers (Selman & Hickey Schultz, 1990; Sullivan, 1953) and from dependence on adults to autonomy and relative self-reliance (O'Connor, Allen, Bell, & Hauser, 1996; Smetana & Gaines, 1999). However, to assert that adolescents need little from adults would be mistaken. Instead, a substantial body of research has shown that positive adolescent development depends on adult relationships (e.g., Maccoby & Martin, 1983; Steinberg, Lamborn, Dornbusch, & Darling, 1992), although the nature of the relationship differs from the earlier parent–child dyad. Since Baumrind (1968) presented her landmark typology of parenting that contrasted authoritative and authoritarian styles, researchers have identified two central dimensions of effective parenting of adolescents: (a) structure—strictness and close supervision as reflected in parental monitoring and limit setting and (b) support—parental warmth, acceptance, and involvement (Herman, Dornbusch, Hen-on, & Herting, 1997; Steinberg, Lamborn, Darling, & Mounts, 1994; Steinberg et al., 1992). This conception of parenting provides the core theoretical basis for the present study.

In combination, high structure (firm enforcement of rules) and support (responsiveness to children's developmental needs) comprise what Baumrind (1968) has called authoritative parenting. Early studies supported the benefits of this parenting style for achievement outcomes in a predominantly Caucasian adolescent sample (Baumrind, 1968, 1991). Since then, numerous researchers have examined whether an authoritative parenting style benefits adolescents from different racial and ethnic groups. Evidence has been somewhat mixed. Several studies have shown that authoritative parenting is more consistently beneficial to Caucasian adolescents' achievement compared to the achievement of adolescents from other racial and ethnic groups (Park & Bauer, 2002; Steinberg et al., 1994). Some argue that an authoritarian parenting style, which emphasizes close monitoring and strict discipline, may be more culturally congruent for Asian American adolescents or more protective of African American adolescents living in dangerous neighborhoods (Baumrind, 1995; Furstenberg, Eccles, Elder, Cook, & Sameroff, 1997; Gonzales, Cauce, Friedman, & Mason, 1996; Kelley, Power, & Winbush, 1992). That said, a collection of other studies has found support for the benefits of an authoritative parenting style for adolescents of color. For instance, authoritative parenting predicted higher educational aspirations in low-income Hispanic and African American youth (Gorman-Smith, Tolan, & Henry, 2000), lower problem behavior with adolescents from low-income urban families (Shumow, Vandell, & Posner, 1999), and higher academic grades (Taylor, Hinton, & Wilson, 1995) and self-esteem (Mandara & Murray, 2002) for African American teens. Taken together, these studies suggest that, for adolescents from different racial and ethnic groups, authoritative parents may meet their children's developmental needs with structure that includes establishing clear rules, monitoring behavior, and enforcing rules consistently, yet also support their children with warmth and encouragement.

The model of authoritative parenting provides an illuminating theoretical perspective on discipline practices in schools. Baumrind (1996) wrote

> Within the authoritative model, behavioral compliance and psychological autonomy are viewed not as mutually exclusive but rather as interdependent objectives: Children are encouraged to respond habitually in prosocial ways *and* to reason autonomously about moral problems, *and* to respect adult authorities *and* learn how to think independently. (p. 405)

Respect for and cooperation with authority, according to Baumrind (1996), should be nurtured along with autonomous reasoning and independent thinking. This is particularly important for adolescents as they seek greater control in decision making (Smetana & Gaines, 1999) and expect fair and legitimate adult authority (Turiel, 2005). Adolescents are especially sensitive to issues of fairness and autonomy, so that efforts to manage and control their behavior must be tempered with efforts to demonstrate that they are regarded with respect.

Darling and Steinberg (1993) theorized that authoritative parenting develops an emotional climate between adolescents and their parents that fosters adolescents' openness to parental socialization. In other words, the positive climate of authoritative parenting may help students to be more responsive to parenting behaviors. In a school setting, an authoritative approach to discipline combines both firm enforcement of school rules and a concerted effort to communicate warmth and concern for the well-being of each student as an individual. In theory, authoritative discipline in school could offer the right conditions for student cooperation with school rules and safe interactions among students. Like with authoritative parents, students may be more open and responsive to school administrator and teacher efforts to uphold school rules and redirect misbehavior.

Authoritative Teaching

At the classroom level, research has shown that adolescents benefit from teachers who use an approach similar to authoritative parental guidance (Gregory & Weinstein, 2004; Walker, 2008; Wentzel, 2002). Recent studies found that the combination of teacher structure and support predicted growth in achievement, especially for students experiencing the negative effects of low family income (Gregory & Weinstein, 2004). Moreover, Gregory

and Weinstein (2008) showed that African American students with negative discipline trajectories had greater acceptance of the authority of teachers whom they perceived as caring and as maintaining high academic expectations. Wentzel (2002) provided evidence that teacher characteristics are related to behavioral outcomes at the middle school level. She found that student perceptions that their teachers maintained high expectations, yet gave infrequent negative feedback, were associated with less irresponsible student behavior as reported by the teacher. Moreover, qualitative research has found that teachers who are warm demanders (Irvine, 2002) or compassionate disciplinarians (Vasquez, 1988) build trusting relationships with students of color and low-income students. These studies show the benefits of an authoritative approach by individual teachers, but these researchers have not examined the joint influence of structure and support at the school level.

The present study extends the concepts of authoritative parenting and teaching to the level of schoolwide discipline. In this study, we test a new theory of school discipline policies and practices called *authoritative school discipline* (Gregory & Cornell, 2009). According to this theory, neither structure nor support alone is sufficient to maintain a safe and orderly school climate; in contrast, an authoritative approach with both structure and support has an optimal impact on school safety. Pellerin (2005) applied a similar model to high schools using 1990 and 1992 archival data from the High School Effectiveness Study. She found that schools using authoritative practices had less truancy and fewer dropouts than did schools using an authoritarian approach.

Structure

We conceptualize school structure as the degree to which schools consistently and fairly enforce rules. Undoubtedly, schools must maintain sufficient order to ensure an environment conducive to learning, but there is great variation in how schools approach this task. Permissive schools that tolerate a wide range of student behavior run the risk of suffering too much disorder, while schools that seem too strict or unfair may elicit antagonistic responses from adolescents who are developmentally inclined to challenge authority and seek autonomy (Mayer & Leone, 1999; Smetana, 2005).

The student perspective is valuable for assessing the degree of structure in schools. Decades of research on school climate has highlighted the role of student perceptions of the school environment in positive youth development (Anderson, 1982; Moos & Moos, 1978; Sprott, 2004; West, 1985). Adolescents' perceptions of the clarity and fairness of rules at their school are consistently linked to better behavior (D. C. Gottfredson, Gottfredson, & Hybl, 1993; Hollingsworth, Lufler, & Clune, 1984; Welsh, 2000). Similar results were found in a national sample of adolescents. Research from the 1995 School Crime Supplement to the National Crime Victimization Survey showed that adolescents who reported greater understanding of school rules and consequences experienced lower school crime and violence (Mayer & Leone, 1999). The positive experience of school structure as clear and fair has held for diverse groups of adolescents. G. D. Gottfredson and colleagues (2005) found that student-perceived clarity and fairness of rules predicted school-level differences in victimization and delinquency. These school-level influences held beyond the effects of student risk factors such as school rates of poverty.

Support

Adolescents' perceptions of their teachers as caring and supportive have been linked to higher grade point averages (Goodenow, 1993), achievement growth (Gregory & Weinstein, 2004; Hanson & Austin, 2003), and engagement in school (Maehr, 1991; Midgley, Maehr, Hruda, Anderman, & Freeman, 2000). Availability of adult assistance is a central aspect of school support. When students feel that their teachers are caring and concerned, they are more likely to seek help (Unnever & Cornell, 2004; Wilson & Deanne, 2001). Help seeking fosters safer schools; victims of bullying who seek help are less likely to experience revictimization (Ladd & Ladd, 2001; Smith, Talamelli, & Cowie, 2004). In addition, adult supports may be especially important for at-risk adolescents. Croninger and Lee (2001) found that positive and supportive relationships with teachers substantially reduced the risk of dropping out for academically challenged students. Furthermore, positive teacher–student relationships are associated with lower use of weapons (Henrich, Brookmeyer, & Shahar, 2005) and reduced problem behavior (Jessor et al., 2003). Feeling cared for and respected by adults in the school may elicit a greater student willingness to cooperate with school rules and adult direction (Darling & Steinberg, 1993).

Present Study

Research on high school safety needs a guiding theory that is developmentally grounded. Authoritative discipline theory offers a promising framework to examine the conditions that are associated with school safety. Like Pellerin (2005), we conceptualize schools comprising multiple socializing agents (i.e., teachers, administrators). The nature of their interactions with students is partially shaped by the informal rules, formal policies, and cultural norms in the school. Mutually reinforcing influences across the school ecology compose the school discipline climate. A climate of structure and support is developmentally appropriate for adolescents because adolescents need adult monitoring and clarity of rules and expectations, yet they also need supportive adults who understand their perspective. Clear and fair rules with adult support serves adolescent autonomy needs. With support, adolescents will feel their voices are heard and opinions seriously considered. With structure that involves consistent and fair enforcement of school rules, adolescents will experience legitimate and nonarbitrary use of authority. With both structure and support in school, adolescents may be more likely to cooperate with rules and to seek help when needed. In these schools, both adults and adolescents may set a tone of respect and establish norms against bullying and victimization. This theoretical framework is promising, yet additional empirical research is needed to test whether schools with authoritative discipline are safer for adolescents.

Addressing this gap in the literature, we tested in the current study the hypothesis that schools high on both structure and support would be safer than other schools, as indicated by lower student victimization and bullying. We selected two scales of structure, which we conceptualized as students' experiences of fair and consistently enforced school rules. From the students' perspectives, school staff did not overlook rule infractions in classrooms and hallways, and consequences were issued in an even-handed and fair manner. We selected two scales of support, which we conceptualized as stu-

dents' experience of the school staff as caring and helpful. Staff were seen as open to hearing student difficulties and as effective in providing help. We further hypothesized that structure and support would be predictive of school safety after taking into account demographic factors of school size, the racial/ethnic composition of the enrolled students, and their eligibility for free- and reduced-price meals.

School safety was assessed using three indicators: student reports of being the victim of aggressive acts, student perceptions of the extent of bullying and teasing at school, and teacher perceptions of the extent of bullying and teasing at school. We assessed student victimization using an adaptation of the scale developed by G. D. Gottfredson (1999) as part of the Effective School Battery. This scale covers a range of victim experiences from being the recipient of abusive remarks to being physically attacked and injured. The victimization scale has been widely used in studies of school climate and safety (e.g., G. D. Gottfredson et al., 2005). Since the victimization scale measures personal experiences of being a victim, and victim rates may be relatively low in many schools, an additional scale was selected to measure student perceptions of the extent of bullying and hostility at school that affects all students (Bandyopadhyay, Cornell, & Konold, 2009; Cornell & Sheras, 2003). For example, the scale asks whether students from different neighborhoods get along with one another, and whether they observe a lot of teasing about clothing or appearance at school. Student observations of how much bullying and teasing occurs at school are an important aspect of school climate. Research has shown that a climate of bullying and hostility can affect all students, even those who are bystanders but not direct victims (Olweus & Limber, 2000). Unnever and Cornell (2003) described a "culture of bullying" that develops in a school when students come to perceive that bullying is a pervasive and generally accepted event. In addition to student perceptions, we assessed teacher perceptions by administering a parallel version of the Bullying Climate Scale (Cornell, 2006) asking teachers for their perspective on the extent of bullying and hostility among students.

Method

Procedures and participants. In spring 2007, we collected school climate surveys from both ninth-grade students and teachers in 290 of the 314 public high schools in the state of Virginia. We selected ninth grade because these students are completing the first year of high school and have a high rate of discipline problems (45% of all discipline violations for Grades 9–12 in Virginia). The school participation rate was over 92%, which was achieved with the cooperation of the Virginia Department of Education and the Virginia Department of Criminal Justice Services, who endorsed the study and encouraged participation. Surveys were completed online by samples of ninth-grade students and teachers from each school. With a few exceptions (e.g., small rural schools), each school selected around 25 ninth-grade students from their enrollment list using a set of random numbers generated for each school based on class size. From each school, about 10 ninth-grade teachers were selected using a similar set of random numbers based on the estimated number of ninth-grade teachers in each school.

Online surveys were obtained from 7,318 students and 2,922 teachers. Of these students, 49% were girls and 51% were boys. Based on student self-report, the study sample was 63% Caucasian, 22% African American, 5% Hispanic, 3% Asian American, 5% other, and less than 1% American Indian. The ninth-grade population reported by the Virginia Department of Education (2007) was 56% Caucasian; 30% African American; 8% Hispanic; 4% Asian American; and 2% American Indian, Hawaiian, and unspecified. The state had no "other" category. Using the comparable racial categories, we found that the study sample had slightly more Caucasian students and fewer African American, Hispanic, and Asian students than the state's ninth-grade population, $\chi^2(4, N = 6{,}962) = 276.39$, $p < .001$.

Of the 2,922 teachers who completed the survey, 64% were female and 37% were male. Eighty-three percent of the teachers were Caucasian, 12% were African American, 2% were Hispanic, 1% were Asian American, 1% were other, and less than 1% were American Indian. State demographics for high school teachers were not available. Teachers reported that they had 1–5 years (36%), 6–10 years (21%), 11–15 years (13%), or more than 15 years (30%) of teaching experience.

Measures

School-level risk factors. Previous research has shown that the overall composition and size of the student body can increase the likelihood of victimization (D. C. Gottfredson, 2001; U.S. Department of Health and Human Services, 2001). Therefore, all analyses took into account the enrollment size of the school (Grades 9–12), the proportion of students of color, and the proportion of students participating in the free- and reduced-price meal program.

Individual-level risk factors. Boys are more likely than girls to report being the victim of violence in schools (NCES, 2007), and low-income Hispanic and African American students are more likely to be exposed to violence than more affluent, Caucasian students (Ozer & Weinstein, 2004). Given these trends, we controlled for student gender, which was coded as 1 for boys and 0 for girls. To analyze the effects of student race, we dummy coded the race and ethnicity variables, using the largest student group as the reference group (Hardy, 1993). The largest group in our sample comprised Caucasian adolescents. Dummy variables were constructed in the following way: Caucasian (0) versus African American (1), Caucasian (0) versus Hispanic (1), Caucasian (0) versus Asian (1), and Caucasian (0) versus Other (1). We developed similar comparisons for teacher race and gender, and also took into account years of teaching experience.

School safety. As part of the online survey, students and teachers completed a Bullying scale taken from the School Climate Bullying Survey (Cornell & Sheras, 2003; McConville & Cornell, 2003). This scale asks students and teachers to rate (*strongly disagree*, *disagree*, *agree*, *strongly agree*) the extent of teasing and bullying at school (e.g., "Students here often get teased about their clothing or physical appearance)." The Bullying scale includes the 4-item Prevalence of Teasing and Bullying scale reported by Bandyopadhyay et al. (2009), but also includes three items inquiring whether students are made to feel welcome and accepted by other students, and whether students from different neighborhoods get along. The 7-item scales had Cronbach's alphas of .77 (student scale) and .87 (teacher scale). The study by Bandyopadhyay et al. using the shorter version of the Bullying scale found that the

aggregated amount of bullying reported by students in a school was correlated with several indicators of schoolwide disorder, including the number of short-term suspensions at school and teacher reports of gang-related violence at school.

Students also completed a Victimization index based on G. D. Gottfredson's (1999) nine items. We excluded two relatively trivial forms of victimization (i.e., theft and damage of property worth less than $10) and relied on the remaining seven forms of student victimization, which ranged from theft of personal property worth more than $10 to being physically attacked (G. D. Gottfredson, 1999). Students answered "yes" or "no" for each form of victimization they had experienced in the past school year. Notably, this scale can be distinguished from the Bullying scale because it asks students to report their own victimization experiences rather than how frequently they observed the victimization of others. The scale had a Cronbach's alpha of .72. Totals were calculated for each participant based on how many forms of victimization he or she reported.

Structure and support. Ninth-grade student surveys were used to measure structure and support in the high schools. School structure was measured by two scales completed by students. Experience of School Rules is a 7-item scale used in the School Crime Supplement to the National Crime Victimization Survey (NCES, 2005). Students responded (*strongly disagree*, *disagree*, *agree*, *strongly agree*) to seven items designed to measure perceptions of school rules as fair and uniformly enforced, such as "The school rules are fair" and "The school rules are strictly enforced." The scale had a Cronbach's alpha of .74.

The second measure of school structure was the Daily Structure scale (Cornell, 2006), which was devised for this study to measure student perceptions of how strictly rules were enforced during the school day. Students were asked how likely students would be caught or punished (*not at all likely*, *not likely*, *likely*, *very likely*) for six common problems such as cutting class, coming late to class, smoking, fighting, and speaking sarcastically to a teacher. The scale had a Cronbach's alpha of .54.

School support was measured by two scales. The Learning Environment scale was used by Austin and Duerr (2005) to measure how much students perceive that adults in their school are supportive and respectful of students. The scale consisted of eight items asking students how much they agree (*strongly disagree*, *disagree*, *agree*, *strongly agree*) that the adults in their school "really care about all students," "treat all students fairly" and show respect and support for students in other ways. The scale had a Cronbach's alpha of .96.

The Help Seeking scale, like the Bullying scale, was taken from the School Climate Bullying Survey (Cornell & Sheras, 2003). This instrument and the Help Seeking scale in particular have been used in a series of studies of school bullying (e.g., Bandyopadhyay et al., 2009; Cole, Cornell, & Sheras, 2006; Williams & Cornell, 2006). The Help Seeking scale was designed to measure student willingness to seek help from school staff members for bullying and threats of violence. Student were asked to agree (*strongly disagree*, *somewhat disagree*, *somewhat agree*, *strongly agree*) with eight items, including statements such as "If another student was bullying me, I would tell one of the teachers or staff at school" and "If another student brought a gun to school, I would tell one of the teachers or staff at school." The scale had a Cronbach's alpha of .89 in the present study. A previous study found that the scale structure was supported by a series of factor analyses across middle school and high school samples, as well as a multigroup confirmatory analysis showing full metric invariance across gender and race groups (Bandyopadhyay et al., 2009). In addition, schools whose students reported higher help seeking had fewer short- and long-term suspensions, according to school records, as well as lower levels of bullying and gang-related violence, as reported by teachers (Bandyopadhyay et al., 2009).

Missing data. A small percentage of teachers (2%, $n = 55$) did not complete the Bullying scale. Chi-square tests showed that total teacher participants did not significantly differ in terms of gender, race/ethnicity, or years of teaching experience from the subsample that excluded teachers with missing data. Due to the missing teacher data, 10 schools were not included in analyses that used teacher reports of bullying.

A small percentage of students (3%, $n = 198$) did not complete the Bullying and Victimization scales. Again, chi-square tests confirmed that the total student respondents did not significantly differ in terms of gender and race/ethnicity compared to the subsample excluding students with missing data. Due to the missing student data, two of the schools in the original sample were excluded from analyses using student-reported bullying and victimization.

Data analytic plan. We conducted a confirmatory factor analysis on the scales theorized to comprise structure and support. Multiple students and teachers were nested within each school, which resulted in the nonindependence of their data. Given this nesting and the focus on school-level differences on the outcomes, it was important to use a data analytic technique that disaggregated within- and between-school variance. Hierarchical linear modeling (HLM) allows for comparison of school differences, after considering within-school student or teacher variability in the outcomes (Raudenbush & Bryk, 2002). Shinn and Rapkin (2000) suggested that scholars need to carefully consider at what levels in an ecology the constructs of interest should be examined, then select the most appropriate analytic strategy. Given that a majority of the high school students in the current study changed classrooms between four and 10 times a day, students' experience of bullying and victimization would not likely be confined to single classrooms. Their experience would be more related to the school as a whole, suggesting that between-schools variability, not between-classrooms variability, would be most relevant. Therefore, for the analyses, a two-level model was most appropriate conceptually (e.g., students within schools), but not a three-level model (e.g., students within classrooms within schools).

For each school safety outcome, the predictors—school structure and support—were examined after taking into account school size and the proportion of low-income and ethnic minority students. In the analyses, all dependent and independent continuous variables were standardized ($M = 0$, $SD = 1$), which has the beneficial effect of centering the variables and facilitating the interpretability of the HLM estimates. The dependent variable, student victimization, was found to be positively skewed. With HLM using a log transformation of the variable and multilevel logistic regression using a dichotomized variable, we found similar results to the HLM using the variable as continuous. To increase the interpretability of the results, we present HLM analyses with the continuous victimization variable.

Results

Preliminary Analyses

Descriptives. Descriptive statistics for all study variables are presented in Table 1. Students expressed a wide range of perspectives as to whether bullying was a problem at their schools (M = 16.71, SD = 3.34). Teachers held a similar range in perspective about the problem (M = 16.77, SD = 3.11). Students typically reported one or two forms of victimization (M = 1.34, SD = 1.49). However, some students reported as many as seven forms of victimization. Overall, most students and teachers reported favorable perceptions of structure and support in their school.

The enrollment of Virginia's public high schools ranged from 33 to 2,881 students with a mean of 1,207. The percentage of students qualifying for free- and reduced-price meals varied from 1% to 83% across schools (M = 30%, SD = 16%). Similarly, the percentage of ethnic minority students varied widely—from 0% to 99%—across schools (M = 34%, SD = 26%). The correlation between proportion of low-income students and proportion of ethnic minority students was .31. School enrollment correlated −.43 with the proportion of low-income students and .20 with the proportion of ethnic minority students (see Table 2).

Confirmatory factor analysis. We conceptualized that School Structure should be represented by two scales (Experience of School Rules and Daily Structure), while School Support should be represented by another two scales (Learning Environment and Help Seeking). To empirically evaluate whether the data could support our hypothesized structure of these two constructs, we conducted a confirmatory factor analysis (CFA) on the full student sample, using LISREL 8.8 (Jöreskog & Sörbom, 2007). The CFA results supported the formation of these two constructs as we hypothesized, with the loadings of two scales (Experience of School Rules and Daily Structure) on one factor (School Structure) being 0.74 and 0.53, respectively, and the loadings of the other two scales (Learning Environment and Help Seeking) on the second factor (School Support) being 0.82 and 0.77, respectively. The CFA model fit indices suggested good fit (e.g., root-mean-square error of approximation = .06, adjusted goodness-of-fit index = .98, comparative fit index = 1.00, nonnormed fit index = 0.98) for this model. The two scales under each construct were standardized and summed to form composite scores of each factor (i.e., School Structure, School Support), and the composite scores were used in later substantive analyses. The scale items composing the School Structure and School Support had good internal consistency (Cronbach's αs = .72, .91, respectively).

Table 1
School Safety, Structure, Support, and Student Demographics

Variable	*M*	*SD*	Min.	Max.
Bullying				
Student report	16.71	3.34	7.00	28.00
Teacher report	16.77	3.11	7.00	28.00
Student reports of victimization	1.34	1.49	0.00	7.00
Structure	50.00	8.72	22.59	83.73
Support	50.00	9.37	25.99	74.24
School composition				
% minority	34	26	0	99
% free- and reduced-price meal	30	16	1	83
School size	1,207	687	33	2,881

Correlations. Pearson product–moment correlations were run with variables aggregated at the school level (see Table 2). Teacher perceptions of bullying were significantly associated with student reports of bullying (r = .38, $p < .001$) and student reports of victimization (r = .17, $p < .01$). Teachers perceived more bullying in larger schools and schools with more students of color (r = .16, $p < .01$; r = .28, $p < .001$, respectively), compared to teachers in smaller schools and schools with fewer students of color. Student perceptions of bullying, however, were unrelated to school size, and the proportion of ethnic minority students.

Schools with high structure were more likely to have high support (r = .53, $p < .001$) compared to schools with low structure. Related to the central questions in this study, structure and support were, as expected, inversely related to student victimization and student-reported bullying (r ranges from −.34 to −.47, $p < .001$). Student reports of structure and support were also associated with teacher perceptions of bullying among students (r = −.29 and r = −.31, $p < .001$, respectively).

HLM Analyses

HLM models were examined for each of the three Level 1 outcome variables: (a) student-reported bullying, (b) teacher-reported bullying among students, and (c) student-reported victimization. Specifically, three models were examined for each outcome. The first model was the two-level HLM model with no predictors (null model). Results from this model were used to calculate the intraclass correlation coefficient (ICC), which is the proportion of between-schools variance (i.e., σ^2_{u0}) to the total variance (i.e., $\sigma^2_{u0} + \sigma^2_e$). The second model included only Level 1 and Level 2 control variables, which were treated as fixed effects. For student-reported bullying and victimization, Level 1 control variables included student gender and race. For teacher-reported bullying, Level 1 control variables were teacher gender, race, and years of teaching experience. Level 2 control variables included school size, a school's proportion of minority students, and proportion of students qualifying for free- and reduced-price meals. The third model for each outcome variable included the control variables mentioned above, plus the variables of our research focus: perceived school structure and school support. Comparisons among the three models identified the increase in proportion of variance explained in the outcome when structure and support were added to the model. The proportion of explained variance provides an index of effect size (Kreft & de Leeuw, 1998). For student outcome variables, Model 3 was as follows:

$$\text{Level 1 model: } Y_{ij} = \beta_{0j} + \beta_{1j}(\text{Gender}_{ij}) + \beta_{2ij}(\text{African American}_{ij}) + \beta_{3j}(\text{Hispanic}) + \beta_{4j}(\text{Asian}_{ij}) + \beta_{5j}(\text{Others}_{ij}) + e_{ij}$$

$$\text{Level 2 model: } \beta_{0j} = \gamma_{00} + \gamma_{01}(\%\ \text{minority}_j) + \gamma_{02}(\%\ \text{free and reduced-price meal}_j) + \gamma_{03}(\text{School Size}_j) + \gamma_{04}(\text{Structure}_j) + \gamma_{05}(\text{Support}_j) + u_{0j}$$

Table 2
Intercorrelations Among Student and Teacher Variables

Variable	1	2	3	4	5	6	7
1. % minority	—						
2. % free- and reduced-price meal	.31***	—					
3. School size	.20***	−.43***	—				
4. Structure	−.18**	.08	−.19**	—			
5. Support	−.34***	−.10	−.20**	.53***	—		
6. Bullying (SR)	.07	.15*	.11	−.39***	−.47***	—	
7. Bullying (TR)	.28***	.10	.16**	−.29***	−.31***	.38***	—
8. Victimization (SR)	.06	.03	.04	−.34***	−.36***	.42***	.17**

Note. SR = student reported; TR = teacher reported.
* $p < .05$. ** $p < .01$. *** $p < .001$.

where *i* refers to individual level, *j* refers to school level, *e* refers to error or residual at the individual level, and *u* refers to residual at the school level.

Bullying. Table 3 presents the summary of HLM analysis for the outcome variable of student-reported bullying in school. The between-schools variation in bullying accounted for 5.6% of the total variation (*ICC* = 0.056). Model 2 shows that the Level 2 control variables (school size, proportion of minority students, and students who qualified for free- and reduced-price meals) accounted for about 9% of the between-school variance. Schools with a lower proportion of minority students ($\gamma_{01} = -.05, p < .05$) and a higher proportion of students who qualified for free- and reduced-price meals ($\gamma_{02} = .10$, $p < .001$) had more bullying. Model 2 also shows that Level 1 covariates accounted for none of the within-school variation. Female students were more likely to report bullying than were male students ($\beta_{1j} = -.08, p < .001$). In addition, students who selected "other" in the race categories were more likely than Caucasian students to report bullying ($\beta_{5j} = .24$, $p < .001$).

With structure and support in Model 3, an additional 45% of between-schools variance in bullying was explained after we took into account school size, proportion of minority students, and students who qualified for free- and reduced-price meals. When we took into account the school-level control variables, higher levels of school structure ($\gamma_{04} = -.07$, $p < .001$) and school support ($\gamma_{05} = -.12$, $p < .001$) were statistically associated with less bullying.

Table 4 presents the HLM analysis for teacher-reported bullying. The between-schools variation accounted for 13% of the total variation (*ICC* = 0.13). Model 5 shows that the Level 2 control variables (school size, proportion of minority students, and students who qualified for free- and reduced-price meals) accounted for about 15% of the between-schools variance. A higher proportion of minority students was significantly associated with teacher perceptions of more bullying ($\gamma_{01} = .13$, $p < .001$). All three Level 1 teacher characteristics were significant predictors of bullying. Female teachers reported more bullying among students than did male teachers ($\beta_{1j} = -.21, p < .001$). Caucasian teachers

Table 3
HLM Analysis With Student-Reported Bullying as Level 1 Outcome

	Model 1		Model 2		Model 3	
Measure	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Student-level predictors						
Gender (1: male; 0: female) β_{1j}			−.08***	.02	−.08***	.02
African American β_{2j}			−.01	.03	−.02	.03
Hispanic β_{3j}			−.03	.05	−.02	.05
Asian β_{4j}			.03	.07	.03	.07
Others β_{5j}			.24***	.05	−.23***	.05
School-level predictors						
% minority γ_{01}			−.05*	.02	−.09***	.02
Free- and reduced-price meal γ_{02}			.10***	.02	.10***	.02
School size γ_{03}			.09***	.02	.06***	.02
Structure γ_{04}					−.07***	.02
Support γ_{05}					−.12***	.02
Random effects						
Individual level σ^2	.94***	.02	.94***	.02	.94***	.02
School level σ^2	.06***	.01	.05***	.01	.03***	.01
Reduced variance within schools[a]			.00		.00	
Reduced variance between schools[a]			.09		.54	

[a] Proportion of unexplained variance reduced from Model 1 (null model).
* $p < .05$. *** $p < .001$.

Table 4
HLM Analysis With Teacher-Reported Bullying as Level 1 Outcome

Measure	Model 4		Model 5		Model 6	
	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Teacher-level predictors						
Gender (1: male; 0: female) β_{1j}			$-.21^{***}$	.04	$-.21^{***}$	.04
African American β_{2j}			$-.23^{***}$	.06	$-.24^{***}$	.06
Hispanic β_{3j}			$-.05$	.14	$-.06$	.14
Asian β_{4j}			$-.55^{***}$	.15	$-.55^{***}$	.15
Others β_{5j}			$-.00$	.12	$-.00$	.12
Years of teaching β_{6j}			$-.14^{***}$	.02	$-.14^{***}$	.02
School-level predictors						
% minority γ_{01}			$.13^{***}$	.04	$.09^{*}$	.04
Free- and reduced-price meal γ_{02}			.05	.04	.05	.03
School size γ_{03}			.04	.04	.03	.04
Structure γ_{04}					$-.08^{*}$	.03
Support γ_{05}					$-.07^{*}$	.03
Random effects						
Individual level σ^2	$.87^{***}$	.02	$.84^{***}$	.02	$.84^{***}$	.02
School level σ^2	$.13^{***}$	.02	$.11^{***}$	.02	$.10^{***}$	.02
Reduced variance within schools[a]			.03		.03	
Reduced variance between schools[a]			.15		.23	

[a] Proportion of unexplained variance reduced from Model 4 (null model).
* $p < .05$. *** $p < .001$.

reported more bullying among students than African American and Asian teachers ($\beta_{2j} = -.23$, $p < .001$; $\beta_{2j} = .55$, $p < .001$, respectively). Less experienced teachers were more likely to report bullying ($\beta_{6j} = -.14$, $p < .001$).

Structure and support were included in Model 6. Compared to Model 5, an additional 8% of between-schools variance in bullying was explained. When we took into account school size, proportion minority, and proportion receiving free- and reduced-price meals, higher levels of school structure ($\gamma_{04} = -.08$, $p < .05$) and school support ($\gamma_{05} = -.07$, $p < .05$) were statistically associated with less bullying.

Victimization. Table 5 presents the summary of HLM analyses for the outcome variable of student-reported victimization. The between-schools variance was about 1.5% of the total variance (*ICC* = .015). Model 8 shows that the Level 2 school composition variables did not account for any of the between-schools variance and were not statistically associated with victimization. Of the Level 1 covariates, gender was associated with victimization, with

Table 5
HLM Analysis With Student-Reported Victimization as Level 1 Outcome

Measure	Model 7		Model 8		Model 9	
	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Student-level predictors						
Gender (1: male; 0: female) β_{1j}			$.26^{***}$	.02	$.25^{***}$	.02
African American β_{2j}			.00	.03	$-.00$	.03
Hispanic β_{3j}			$-.05$	.05	$-.04$	.05
Asian β_{4j}			$-.08$	.07	$-.07$	.07
Others β_{5j}			$.35^{***}$	.05	$.35^{***}$	.05
School-level predictors						
% minority γ_{01}			$-.00$	.02	$-.03$	.02
Free- and reduced-price meal γ_{02}			.02	.02	.01	.02
School size γ_{03}			.01	.01	$-.00$	.02
Structure γ_{04}					$-.04^{**}$	.02
Support γ_{05}					$-.07^{***}$	.02
Random effects						
Individual level σ^2	$.99^{***}$	.02	$.96^{***}$	.02	$.96^{***}$	.02
School level σ^2	$.02^{***}$	.00	$.02^{***}$	.00	$.01^{*}$	.00
Reduced variance within schools[a]			.03		.03	
Reduced variance between schools[a]			.00		.50	

[a] Proportion of unexplained variance reduced from Model 7 (null model).
* $p < .05$. ** $p < .01$. *** $p < .001$.

male students more likely to report victimization than female students ($\beta_{1j} = .26$, $p < .001$). In addition, students selecting "other" in the racial categories were more likely than Caucasian students to report higher victimization ($\beta_{5j} = .35$, $p < .001$). Model 9 included structure and support and accounted for 50% of the between-schools variance in victimization. Taking into account school size, proportion minority, and proportion receiving free- and reduced-price meals, we found that higher levels of school structure ($\gamma_{04} = -.04$, $p < .01$) and school support ($\gamma_{05} = -.07$, $p < .001$) were statistically associated with less student victimization.

To understand the differences related to the outcomes (bullying and victimization) in authoritative versus nonauthoritative schools, we classified schools by median and split them into four groups: (a) low structure/low support, (b) low structure/high support, (c) high structure/low support, and (d) high structure/high support. An analysis of variance found significant group effects for student victimization and for both student and teacher perceptions of bullying. Follow-up group comparisons showed that schools low on structure and support significantly differed on bullying and victimization from schools high on both structure and support, and the magnitude of the difference was considerable. Schools with high structure and support were three-quarter to one standard deviation lower on bullying and victimization compared to schools with low structure and support.

Discussion

This study found support for authoritative discipline theory, a new framework for conceptualizing developmentally appropriate school discipline for adolescents. Within a large and diverse sample of public high schools, both structure and support were associated with between-schools differences in safety. More specifically, student perceptions of structure and support, aggregated at the school-level, were associated with less student victimization and less bullying among students, even after we controlled for school size and the proportions of low-income and ethnic minority students in the student body. These findings support a new appreciation for an authoritative approach to discipline at the school level, as such approaches have been almost exclusively studied at the classroom level.

A unique contribution of this study was the ability to examine school variation in a nearly complete state population of public high schools. The 92% school participation rate for this study is noteworthy because schools with high levels of discipline problems or low investment in student support may be less likely to participate in research. Two excellent studies (G. D. Gottfredson et al., 2005; Hanson & Austin, 2003) acknowledged that low participation limited their findings; for example, the G. D. Gottfredson et al. study (2005) was limited to just 254 (30%) of the 847 invited schools. The current study is much less vulnerable to selection biases found in previous studies and because we were able to examine student-perceived structure and support in almost an entire state population of high schools. This increases confidence in the applicability of the findings for diverse schools.

Structure

Structure comprised student perceptions of the rules as fair and consistently enforced for common problems such as cutting class, smoking, fighting, and speaking sarcastically to a teacher. Schools high on structure did not overlook such common problems. The HLM analyses showed that schools with more structure had less bullying and student victimization. This study extends early research on structure, mostly concerned with classroom settings, which found that students had positive perceptions of their teachers if they offered clear and consistently enforced rules (e.g., Trickett & Moos, 1974). The present study suggests that there are meaningful differences between schools in how school rules are perceived by students. Strategies for student behavior management often focus on classroom-level interventions, but evidence that disciplinary structure is a construct that can be expanded from the level of classroom practice to a schoolwide level suggests that a broader approach should be considered. This is especially relevant in high school settings, where students regularly change classes, and bullying and victimization are not necessarily confined to specific classrooms. Several studies have found that schools characterized by greater structure provide a safer learning environment. Specifically, studies have found that adolescents' greater understanding of rules was associated with lower school crime (Mayer & Leone, 1999), and their perceptions of the rules as fair have been linked to better student behavior (D. C. Gottfredson et al., 1993). These findings are consistent with theoretical expectations that adolescents have a developmental need for both predictability of their environment and reasonable application of rules. Adolescents are more willing to accept and trust school authority if they perceive rule enforcement to be fair (Tyler, 2006).

Support

Characteristics of school support were found to be distinct from the characteristics of school structure, as demonstrated in the factor analytic results. Previous research shows that adolescents who experience adults in the school as supportive are more likely to have academic success (e.g., Goodenow, 1993; Gregory & Weinstein, 2004). The current study extends these findings to the domain of school safety and corroborates previous research showing that students with positive teacher and student relationships have lower problem behavior (Jessor et al., 2003) and are less likely to use weapons (Henrich et al., 2005). How and why school support is related to higher school safety deserves further exploration. Future research may consider whether students in schools with adult support turn to adults for help before conflict escalates. Extrapolating from Darling and Steinberg's (1993) proposed mechanisms of parenting styles, students in highly supportive schools may simply be more open and responsive to directives from school staff whom they experience as fair and respectful.

Additive Effects of Structure and Support

Discussions about school discipline policy often contrast "get tough" practices with "give support" practices as though the two were mutually exclusive. For example, Nickerson and Martens (2008) found that principal attitudes toward discipline could be categorized into a security/enforcement approach (i.e., use of security cameras, police officers) and an education/therapeutic approach (i.e., use of violence prevention programs, teacher training in classroom management). In contrast, this study found that structure and support were positively correlated ($r = .53$), at least

from a student perspective. Schools where students perceived that rules were strictly enforced also described more supportive relationships with the adults in their school.

It should be noted, however, that our measure of structure was based on student perceptions of whether rules were fair and strictly enforced. We did not assess the use of punitive disciplinary consequences such as suspension and expulsion, which we regard as conceptually distinguishable from our concept of structure. Zero-tolerance discipline policies impose severe sanctions (often long-term suspension or expulsion) for even minor violations of a school rule, with little or no consideration of the circumstances of the behavior or the student's intentions (Heaviside et al., 1998; Skiba & Peterson, 1999; Tebo, 2000). Zero-tolerance policies may reflect the rigid and controlling practices that Baumrind (1968) described as authoritarian (Arum, 2003; Nickerson & Spears, 2007). Although not studying zero-tolerance policies specifically, Pellerin (2005) found that authoritarian schools, which emphasized punishment, had higher rates of drop out compared to schools that responded to student needs and demanded academic performance and cooperation with the rules. Future research should determine whether schools with authoritarian discipline rely on zero-tolerance policies, which are inherently unsupportive, and elicit negative student behavior compared to schools with authoritative discipline.

Although structure and support were highly correlated in our study, both made independent contributions to the prediction of school safety conditions. Notably, structure and support were significantly associated with all three safety indicators. When simultaneously entered into HLM analyses, structure and support predicted less student-reported victimization and less student- and teacher- perceived bullying among students, compared to schools with less structure and support. One strength of these findings is their consistency across informants. Although student and teacher perceptions of bullying were only modestly correlated (.38), both were associated with student perceptions of support. Of particular relevance is that *student* perceptions of structure and support predicted *teacher* perceptions of bullying among students. In contrast, previous studies have often relied on measures obtained from the same informants, which can inflate correlations due to response bias and other sources of shared method variance (Nickerson & Martens, 2008; Roberts, Wilcox, May, & Clayton, 2007).

Overall, structure and support explained between 8% and 50% of the between-schools variance in safety outcomes. Said with caution given the correlational nature of the study, these effects are large enough to suggest that schools could achieve meaningful differences in levels of bullying and student victimization by improving their structure and support (Rosenthal, 1990). Moreover, the findings took into account the composition of the student body related to race, income, and school size. This is important given the need to identify how to increase school safety in larger high schools (G. D. Gottfredson et al., 2005) and how to lower the safety fears of African American and Hispanic students, which tend to be higher than the fears of Caucasian students (NCES, 2007). Comparisons of HLM coefficients offer another perspective on the potential of structure and support for addressing school safety. In the HLM model predicting student-perceived bullying, the statistically significant estimates for the school-level control variables (e.g., school poverty) ranged from .05 to .10. The estimates for structure (−.07) and support (−.12) were of the same magnitude. This suggests for schools facing risk factors, which are largely out of their control, structure and support hold promise as potential buffers to these risks. In addition, the present study's findings have important implications for future intervention research, which may find that disparity in experiences of victimization could be substantially lowered in schools with increases in structure and support.

Perhaps the most important implication of this study is that structure and support should be considered in tandem. We conjecture that students who feel supported and respected at school are more accepting of structure (Arum, 2003); in the absence of support, no degree of structure may be adequate (D. C. Gottfredson et al., 1993; Hollingsworth et al., 1984). Offering support does not preclude upholding behavioral expectations through fair and consistent rule enforcement. Administrators should try to ensure that every student feels connected to at least one teacher and feels comfortable enough to seek help when needed. At the same time, an administrator might consider strategies to clearly communicate rules and demonstrate fair and consistent enforcement of those rules.

Characteristics of Students and Teachers

The large within-school variation in school bullying and victimization suggests that students within the same building have divergent experiences of school safety. The student demographic characteristics examined in this study explained only a small portion of the within-school variance in school safety. Boys were more likely to report being victimized, yet girls were more likely to report bullying among students. Girls may be the victims of fewer physical assaults and thefts than boys and, at the same time, be more sensitive to the climate of bullying than boys. It is also quite plausible that girls were more likely to report bullying than were boys because the measure of bullying included verbal and social forms of bullying that are more common among girls than boys (Crick & Grotpeter, 1995).

In the analyses of student-reported safety, the "other" versus Caucasian contrast was the only race comparison variable that was significant. Compared to Caucasian students, those who chose "other" and presumably did not consider themselves a member of the Asian, African American, or Hispanic groups were more likely to report bullying and victimization. About 60% of the students who chose "other" wrote that they were mixed or biracial. Future research needs to address the experience of biracial adolescents, many of whom may feel forced to identify with one racial group over another in order to fit in with the racial social segregation typical of high schools (Tatum, 1997; Wardle, 1992). If they cross boundaries between racial groups, they may be at risk for teasing and bullying.

Future research needs to consider additional student characteristics, such as social status, popularity, and social class (Allen, Porter, McFarland, Marsh, & McElhaney, 2005) that may help explain divergent experiences of safety. For instance, a recent national report showed that low-income students report greater victimization than high-income students (Bauer et al., 2008). Close to 8% of students ages 12–18 with household incomes of $15,000 or less reported being a victim in school compared with about 5% of their peers with household incomes of $50,000 or more. Without the socioeconomic status of individual students, we were not,

in the current study, able to determine whether low-income students experienced higher rates of victimization, regardless of racial group membership. Future researchers might try to tease apart the effects of student race and socioeconomic status, which are overlapping in many communities. Additional knowledge of student characteristics and school safety could inform the substantial literature on peer aggression and victimization, as well as prevention and intervention programs to reduce bullying and other forms of peer aggression and bullying (Jimerson & Furlong, 2006; Ladd & Ladd, 2001).

Less experienced teachers and female teachers were more likely to perceive bullying among students compared to more experienced teachers and male teachers, respectively. In addition, Caucasian teachers, compared to Asian and African American teachers, were more likely to perceive bullying. Multiple explanations for these findings are possible. Less experienced teachers, Caucasian teachers, and female teachers may be more sensitive to bullying and teasing as a problem or may be more likely to overidentify a student interaction as a manifestation of bullying than other teachers. Another explanation is that students are less likely to display such behavior in the presence of a more experienced teacher, a male teacher, an Asian teacher, or an African American teacher.

Given that teacher characteristics explained only 3% of the within-school variation in teacher-perceived bullying, additional teacher variables need to be examined in future research. For instance, teachers' perceptions of bullying may relate to the student composition in their classrooms. Compared to teachers with greater academic homogeneity in their classrooms, teachers in mixed-ability classrooms have a more difficult time eliciting cooperation and engagement from their students (Evertson, Sanford, & Emmer, 1981). Future research might determine whether teachers' perceptions of bullying among students differ depending on the academic track level or heterogeneity of ability in their classrooms. In addition, the likelihood of bullying may be higher in some course subjects than others.

Limitations

This study examined relationships between measures of school climate and safety; correlational studies do not establish causal relationships and are open to multiple interpretations. It is certainly plausible that there are bidirectional causal effects and that school safety conditions could and likely do affect school structure and support. Future studies may consider alternative explanations for these findings by testing other models or may demonstrate causal effects through experimental interventions. Nevertheless, the findings in this study are consistent with our presumed causal model by demonstrating a statistical effect of school structure and support on school safety after we controlled for known demographic risk factors for school disorder and used a model that considers the nesting of student and teacher measures within schools. The analyses show that, although structure and support are moderately correlated (.53), they make independent contributions to each of three measures of school safety.

Another limitation is that school structure and support were based on perceptions of ninth-grade students. There are two potential limitations here. First, students might not be able to accurately assess the degree of structure and support in their school and, second, the perceptions of ninth graders might not be representative of the experiences of all students. However, the perceptions of students have intrinsic importance because their experiences of school climate may be more influential on their school adjustment and behavior than more objective indicators (Loukas, Suzuki, & Horton, 2006). In a sense, student perceptions are an objective indicator in their own right. Students react to school rules as they perceive them, and if they regard the rules as easily flouted, they are more likely to disobey them. Furthermore, their subjective perceptions of teachers as warm and supportive are essential to creating a positive school climate. Any effort by school authorities to create a supportive environment cannot be regarded as successful if the students do not perceive the adults in the school as supportive.

There is the additional concern that ninth grader perceptions might differ from those of other students. Only a study that includes students at other grades can resolve this question. However, ninth grade is the first year of high school, and adjustment problems at this level may lead to more serious difficulties and failure to complete high school. The creation of a positive school climate that is discernible to ninth graders would seem to be an essential step in facilitating students' high school adjustment and a kind of acid test in determining whether school practices have their intended impact.

Nevertheless, it would be useful for future studies to examine additional perspectives on school structure and support. For example, it may be useful to examine how school administrators differ in their approaches to discipline and how these differences are communicated to students (Fenning & Bohanon, 2006). Some principals focus on how underlying student needs contribute to their unsafe behavior. Other principals are less likely to emphasize support and more likely to adopt exclusively punitive approaches to unsafe behavior (Morrison & Skiba, 2001). Additional research would need to identify whether differences in how school leaders approach school safety are reflected in student experience of structure and support.

The measures of school safety were also limited to student victimization and the extent of bullying and teasing at school. Both student and teacher perceptions of bullying/teasing were examined, but additional measures of school safety deserve consideration, including teacher victimization. Administrative records of school disciplinary infractions could be compared to student and teacher reports of victimization. This comparison will help identify the degree to which serious disciplinary action indicates school safety (Heaviside et al., 1998), given that some office referrals, suspensions, and expulsions are issued for minor misbehavior (Morrison et al., 2006) or are applied for more subjective reasons to one racial group compared to another (Skiba, Michael, Nardo, & Peterson, 2002).

The between-schools variance of student victimization was only 1.5% of the total variance. It is unclear whether the low ICC for this variable is due to the low base rate of serious victimization in schools or some other difficulty in the measurement of victimization. We examined several variations in this scale (such as examining only the most serious forms of victimization and log transforming the variable to obtain a more normal distribution) but found no more illuminating results. However, the low ICC for victimization was similar to the findings by G. D. Gottfredson and colleagues (2005), who found the between-schools variance for

victimization was only 4% of the total variance. Similarly, LeBlanc and colleagues (2008) found that between-schools variance for student-reported violent antisocial behavior was only 3.6% of the total variance, and Koth, Bradshaw, and Leaf (2008) found that a majority of variance in student-perceived order and discipline was between students with less variance between classrooms and schools.

It appears that there are large variations in antisocial behavior and victimization within schools, even in those schools with the highest and lowest rates of overall safety problems. Student gender and race explained only 3% of the within-school variation in student-reported victimization. The study would have benefitted from additional student characteristics in the HLM models, such as student socioeconomic status and academic performance. Previous research has found links between these student characteristics and school safety. For instance, a greater percentage of low-income, compared to high-income, students report being victimized by crime and violence (Bauer et al., 2008). Students with low academic performance are more likely to victimize others compared to their higher achieving peers (e.g., Choi, 2007). Future studies including additional student characteristics may shed more light on the variability of student victimization within schools.

Summary

In a statewide sample of ninth-grade students and teachers, student perceptions that school rules were fair and strictly enforced, and that adults were supportive and willing to help students, were associated with less student victimization and bullying. As posited by authoritative discipline theory, both structure and support were more common in safer schools. Just as many adolescents benefit from authoritative parenting in their home, students may benefit from a similarly authoritative environment in their school.

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