The Relationship between Students' Sense of Their School as a Community and Their Involvement in Problem Behaviors

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ABSTRACT

Objectives. There has been relatively little research on the contributions of school context to developmental outcomes. This study examined relationships between students' sense of the school as a community and their involvement in problem behaviors.

Methods. Participants were an ethnically and socioeconomically diverse sample of 1434 fifth and sixth grade students from 24 elementary schools around the United States. Data were analyzed by hierarchical linear regression.

Results. The major finding was that, with several relevant student- and school-level characteristics controlled, schools with higher average sense-of-community scores had significantly lower average student drug use and delinquency. Caution is warranted in inferring causality, however, owing to the cross-sectional design.

Conclusions. The findings suggest that school context may moderate relationships between individual risk and protective factors and developmental outcomes, and that schools that are experienced as communities may enhance students' resiliency. (*Am J Public Health.* 1997;87:1997–2001)

Introduction

Although schools are a primary social context for youth, there has been relatively little research on the role of school organization, practices, and climate in the etiology of problem behaviors.[1,2] Some theories of delinquency implicate social context in rates of problem behaviors[3,4] and a few studies have investigated relationships between neighborhood or community context and delinquency,[5,6] but the possible linkages between the social context of the school and students' involvement in problem behaviors remain largely unexplored.

One aspect of school context that is potentially important for rates of problem behaviors is the extent to which the school is a functional community (i.e., an environment characterized by caring and supportive interpersonal relationships, opportunities to participate in school activities and decision making, and shared norms, goals, and values).[7] Recent studies have shown that students who experience their school as a community enjoy school more, are more academically motivated, are absent less often, engage in less disruptive behavior, and have higher achievement than students who do not.[8,9] Although drug use and delinquency were not examined in these previous studies, the findings clearly suggest that in schools where there is a strong sense of community, students are more strongly bonded to the school. Theoretically, weak bonds with conventional institutions are considered an important cause of delinquent behavior among youth.[10,11] Therefore, we expect that there would be less problem behavior among students at schools where the social context promotes bonding.

The present study examined cross-sectional relationships between students' sense of the school as a community and the prevalence of problem behaviors among fifth and sixth grade students in a diverse sample of elementary schools.

Methods

Subjects and Design

The subjects were 1434 fifth (62%) and sixth (38%) grade students from elementary schools in six school districts across the United States—three on the West Coast, one in the South, one in the Southeast, and one in the Northeast. The participating schools were selected, in part, to represent a wide range of settings and student populations. Of the 24 schools (4 from each district), 11 are in large cities, 4 are in smaller cities, and 9 are in suburban or rural communities. Information on student composition and other aggregate characteristics of these schools is presented in Table 1.

Data were collected as part of baseline assessments for a longitudinal investigation of the antecedents and effects of schools as communities. After baseline data collection, 12 of the schools (2 per district) began implementing an intervention program designed to enhance a sense of school community. The other 12 schools are serving as a comparison group for evaluating the effectiveness of the intervention program.

Parental consent was obtained for all students who participated in the research.

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TABLE 1—Aggregate Scores of Participating Schools for School Sense of Community, Student Demographic Characteristics, and Student Drug Use, Delinquency, and Victimization

	Predictor and Control Variables Included in Model					Other Characteristics			Outcome Variables		
School	School Sense of Community,[a] Mean (SD)	% Students Receiving Subsidized Lunch	% Male	% Ethnic Minority	Highest Grade[b]	No. Students Enrolled	% with Limited or No English	Mean Achievement[c]	Drug Use,[a] Mean (SD)	Delinquency,[a] Mean (SD)	Victimization,[a] Mean (SD)
1	2.56 (.52)	94	46	100	5	612	3	28.54	1.52 (.78)	1.35 (.59)	1.61 (.57)
2	2.70 (.61)	88	53	35	5	607	0	44.23	1.69 (.81)	1.63 (.76)	1.86 (.77)
3	2.77 (.50)	38	52	77	5	263	17	44.28	1.38 (.57)	1.31 (.46)	1.96 (.69)
4	2.78 (.61)	46	51	28	5	594	0	57.58	1.77 (.83)	1.61 (.70)	1.96 (.87)
5	2.80 (.59)	24	48	56	5	452	8	56.20	1.43 (.52)	1.26 (.34)	1.75 (.79)
6	2.83 (.61)	9	52	26	6	434	2	60.60	1.87 (.65)	1.72 (.87)	2.02 (.95)
7	2.85 (.62)	28	51	34	5	517	0	50.59	1.65 (.66)	1.45 (.57)	1.82 (.76)
8	2.85 (.43)	95	46	100	5	677	2	24.15	1.55 (.84)	1.39 (.62)	1.79 (.82)
9	2.89 (.60)	77	52	34	5	534	0	38.52	1.42 (.63)	1.54 (.67)	2.01 (.96)
10	2.89 (.55)	60	43	79	6	892	32	45.82	1.68 (.74)	1.45 (.46)	1.73 (.79)
11	2.92 (.60)	5	44	60	6	600	10	56.44	1.65 (.63)	1.48 (.52)	2.02 (.85)
12	2.94 (.62)	46	51	58	6	771	19	50.28	1.90 (.84)	1.66 (.64)	1.99 (.79)
13	2.95 (.54)	26	43	64	5	487	11	55.57	1.51 (.64)	1.46 (.60)	1.94 (.88)
14	2.97 (.53)	74	52	84	5	449	22	35.17	1.56 (.61)	1.51 (.62)	1.72 (.72)
15	2.98 (.52)	35	50	53	6	386	0	54.09	1.41 (.46)	1.40 (.78)	1.91 (.85)
16	3.05 (.59)	13	47	65	5	651	14	53.33	1.42 (.57)	1.35 (.49)	1.91 (.78)
17	3.06 (.57)	4	49	31	6	652	0	55.65	1.45 (.44)	1.26 (.36)	1.88 (.68)
18	3.07 (.57)	27	47	46	5	433	10	62.66	1.42 (.46)	1.22 (.24)	1.91 (.73)
19	3.09 (.59)	53	56	86	5	378	23	35.41	1.37 (.66)	1.43 (.62)	1.74 (.75)
20	3.10 (.59)	20	52	50	5	412	12	57.31	1.29 (.43)	1.22 (.29)	1.82 (.70)
21	3.14 (.58)	14	47	69	5	537	8	60.76	1.39 (.54)	1.34 (.46)	1.76 (.66)
22	3.15 (.62)	9	56	35	6	534	0	55.67	1.56 (.56)	1.36 (.51)	1.90 (.74)
23	3.22 (.61)	2	46	29	6	622	0	67.39	1.38 (.46)	1.28 (.52)	1.72 (.67)
24	3.29 (.56)	20	48	65	5	932	15	50.08	1.46 (.47)	1.24 (.36)	1.91 (.69)

Note. Schools are presented in ascending order of average sense-of-community score.
[a]Scale range 1 to 5.
[b]Grade level at which drug use, delinquency, and victimization were assessed.
[c]Mean percentile score on standardized norm-referenced achievement test.

Although data on problem behaviors were obtained only from students in the highest grade at each school (i.e., fifth or sixth), data on school sense of community (and a number of other variables not considered here) were obtained from students in each of the three highest grades (i.e., third through fifth or fourth through sixth). Consent rates across schools varied from 58% to 99% of upper-grade students, with an average rate of 77%. Analyses indicated that the research sample was representative of the full upper-grade student population at each of the schools in gender and ethnic composition, achievement level, and English proficiency. The sample included slightly more girls (52.8%) than boys (47.2%). The fifth and sixth grade students who provided information about problem behaviors were 11 or 12 years of age (mean = 11.69 years, SD = .64); 49% were Caucasian, 21% were Hispanic, 20% were African-American, 8% were Asian, and 2% were of other ethnic backgrounds.

Measures

Students' sense of the school as a community was assessed with a 38-item scale (internal consistency [α] = .91) composed of two subscales measuring (1) caring and supportive interpersonal relationships (28 items, e.g., "people care about each other in this school," "students in my class work together to solve problems") and (2) student autonomy and influence (10 items, e.g., "the teacher lets me choose what I will work on," "in my class the teacher and students decide together what the rules will be"). Students responded to each item on a 5-point scale (1 = "disagree a lot" or "never"; 5 = "agree a lot" or "always"). Responses were averaged across the items in each subscale, and the two subscale scores were averaged for the measure of individual students' sense of community. Psychometric analyses indicated that the total sense-of-community scale was unidimensional (i.e., all items had high positive loadings on the first unrotated principal component) and was equally reliable for boys and girls and for students of different ethnic backgrounds.[12]

Students' use of cigarettes, alcohol, and marijuana was assessed through individual questions: "Do you smoke cigarettes?" "Do you drink alcohol (beer, wine, liquor)?" "Do you smoke marijuana (pot, grass)?" Students indicated their use of each substance on a 5-point scale (1 = "never"; 5 = "often").

Frequency of involvement in each of 10 delinquent behaviors (running away from home, skipping school, damaging someone else's property on purpose, throwing objects at people or cars, stealing money or property, carrying a weapon, threatening to harm someone, hurting someone on purpose, taking a car without the owner's permission, and being involved in a gang fight) during the past year was also assessed on a 5-point scale (1 = "never"; 5 = "10 or more times").

Finally, students indicated the extent to which they had been the subject of each of six acts of victimization at school (being insulted, called names, or made fun of; having one's property damaged; having one's property stolen; having money or other property taken by force; being threatened with physical harm; and being physically attacked) during the past year, using the same 5-point frequency scale described above.

Item responses within each domain were averaged to form composite measures

of drug use (α = .52, mean = 1.56, SD = .66), delinquency (α = .85, mean = 1.43, SD = .58), and victimization (α = .78, mean = 1.87, SD = .78). Although the three scales were positively intercorrelated (*r*s ranged from .21 to .53, *P*s < .001), the correlations were moderate and the conceptual distinctions between drug use, delinquency, and victimization warranted treating them as separate dependent measures.

Demographic characteristics included as controls in the analyses were student gender and ethnicity, grade level, and poverty level (i.e., the percentage of students at the school receiving subsidized school lunches). Data on individual students' socioeconomic status were not available.

Procedures

Sense of school community and student involvement in problem behaviors were assessed through group-administered questionnaires. Trained administrators supervised and provided assistance to students. To encourage candor, only precoded identification numbers appeared on the questionnaire booklets about problem behaviors, and students were told that their answers would be kept confidential. Administrators flagged the answer sheets of students they thought were not responding honestly or were having difficulty understanding the questions, and these answer sheets were scrutinized. All of the data were also screened for patterning of responses, response bias, and logical inconsistencies. The responses of about 0.5% of students in the sample were identified as suspect and dropped from data analysis.

Analysis

Dependent measures were log transformed prior to analysis to minimize skewness. Although we were primarily interested in relationships between school sense of community and students' problem behaviors, it was necessary to control for student-level differences in sense of community when estimating school-level effects. Data were therefore analyzed by hierarchical linear regression.[13] Predictors in the student-level, within-school model were student sense of school community, gender (0 = female, 1 = male), and ethnicity (0 = White, 1 = non-White). Student-level predictors were centered around their within-school means. Predictors in the school-level, between-school model were grade level (0 = fifth, 1 = sixth), average sense of community within the school, poverty level of the student population, and the interaction of school sense of community and poverty. The interaction term was computed after centering both school-level predictors (sense of community and poverty level) around the grand mean for the sample. Poverty level was included as a second context variable because it was strongly negatively correlated with school sense of community ($r[23] = -.69$, $P < .001$) and thus was a confounding influence that needed to be controlled when estimating the effects of school sense of community. Preliminary analyses indicated that school size, English proficiency, and mean achievement were not significantly related to problem behaviors once school sense of community, poverty, grade level, and the student-level controls were taken into account.

Exploratory analyses revealed that slope heterogeneity was not significant for any of the student-level predictors, and likelihood-ratio tests indicated that specifying these parameters as fixed did not provide a worse fit to the data than specifying slopes as randomly varying between schools (χ^2s[9] < 3.04, *P*s < .50).[13] Consequently, only between-school variability in the intercepts (i.e., school mean scores) was modeled in the present analyses.

To facilitate comparison across variables with different metrics, all effect estimates in the regressions were transformed into standard deviation units.

Results

Fitting an unconditional model (i.e., a model with no predictors) to each of the dependent measures indicated that approximately 7% of the variability in both drug use and delinquency was between schools. Although between-school variability was statistically significant for both measures (χ^2s[23] > 101.22, *P*s < .001) and the estimated reliabilities for school mean drug use and delinquency scores were adequate for discriminating among schools (.73 for each measure), it is clear that variability of these measures was much greater between students within schools than between schools. This is important because school-level effects are evaluated only on the proportion of variance that is between schools.

For victimization, only about 2% of the variability was between schools ($\chi^2[23] = 29.15$, $P < .18$), and the reliability of the school mean victimization score was only .19. Given nonsignificant between-school variability, only the within-school model was fit for the victimization measure.

Finally, approximately 8% of the variability in school sense of community was between schools ($\chi^2[23] = 369.10$, $P < .0001$), and the school-level mean sense-of-community score had an estimated reliability of .92 for discriminating among schools.

Findings from the hierarchical regression analyses are summarized in Table 2. Within schools, student gender and sense of community were associated with all three problem behaviors. Males were more likely than females to use drugs, engage in delinquent acts, and be victimized at school. These effects were small for drug use and victimization but of moderate size for delinquency. As expected, students' sense of school as a community was negatively associated with drug use, delinquency, and victimization. Each of these effects was of small magnitude. Student ethnicity was associated only with delinquency: non-White students were more likely than White students to report engaging in delinquent acts. This also was a small effect. Overall, the within-school model accounted for 3% to 4% of student variability in drug use and victimization and for about 10% of the variability in delinquency.

Between schools, as hypothesized, increases in school-level sense of community were associated with lower average levels of drug use and delinquent behavior. Schools where the oldest students were in sixth grade also had higher average levels of drug use and delinquency than schools where the oldest students were in fifth grade. These effects of school sense of community and grade level were all of small magnitude. Overall, the between-school model accounted for almost 50% of the variability between schools in average student drug use, and for almost 60% of the variability in average student delinquency.

Interestingly, poverty level was not associated with either drug use or delinquency. However, there was a significant school sense of community × poverty level interaction effect for delinquent behaviors. In schools with moderate and low poverty levels (i.e., schools at the sample mean and 1 SD below the sample mean), increases in sense of community were associated with reductions in delinquent behavior (figure available from authors). For high-poverty schools (i.e., schools 1 SD above the sample mean), on the other hand, increases in sense of community were not associated with reduced delinquency.

Discussion

The major finding was that, with student differences in sense of community and other student-and school-level characteris-

TABLE 2—Summary of Hierarchical Regression Analyses of the Effects of a School's Sense of Community, Poverty Level, and Other School- and Student-Level Characteristics on Student Drug Use, Delinquency, and Victimization

	Within-School Model					Between-School Model					
Dependent Measure	Intercept	Gender[a]	Ethnicity[b]	Sense of Community	% of Variance	Intercept	Grade[c]	Sense of Community	Poverty	Community × Poverty	% of Variance
Drug use	.281*	.203**	−.006	−.137*	2.86	.952***	.268***	−.122***	.036	.064	48.33
Delinquency	.226	.477*	.139***	−.183*	10.18	.681***	.218***	−.105***	.107	.104***	58.27
Victimization	.445*	.236*	−.101	−.160*	3.99						

Note. n = 1434 students and 24 schools. Estimated effects of all predictor variables are presented in standard deviation units (i.e., they are effect sizes). The between-school model was not estimated for victimization owing to insufficient variability between schools in average victimization scores. The percentage of variance is the proportion of variability in dependent measures explained by within-school and between-school models.

[a]0 = female, 1 = male.

[b]0 = White, 1 = non-White.

[c]0 = fifth grade, 1 = sixth grade.

*$P < .001$; **$P < .01$; ***$P < .05$.

tics controlled, higher levels of school sense of community were associated with significantly less student drug use and delinquent behavior. Taken with the findings from earlier studies,[8,9,14,15] this finding indicates that the social context of the school is related to a wide range of student attitudes, motives, and behaviors and thus merits increased attention in future research as an important determinant of children's developmental outcomes.

Although positive student-level effects of the sense of school as a community were found for all three measures of problem behavior examined here, there was insufficient variability between schools to estimate school-level effects for victimization. This was puzzling, because one would expect that positive interpersonal relationships—one of the two defining characteristics of community—would be inconsistent with students' being victimized at school. The relatively modest amount of variance in sense of community that was between schools may be relevant here. When most of the variance is between students within a school, even at schools with a high school mean score there may be many students who do not experience the school as a community. If these low-sense-of-community students are present in all schools and also are disproportionately those who are victimized, this might account for the significant within-school relationships between sense of community and victimization, and the absence of significant between-school variation in average victimization.

While empirical evidence for contextual influences on development and behavior is accumulating, few theoretical models of contextual effects have been proposed. Coleman has suggested that children's socialization is facilitated in a functional community through the salient normative consensus among community members, presumably owing to both increased clarity about appropriate and inappropriate behaviors and increased monitoring and enforcement of community norms.[16,17] Others have emphasized the affective bonds that develop between the child and the community as the mechanism that promotes acceptance and internalization of community norms.[8,10] Longitudinal research is needed to explore these (and other) possible mechanisms through which social context might moderate relationships between risk and protective factors and developmental outcomes.

The lack of significant effects of poverty level on problem behaviors is also interesting. Poverty has been found by some investigators to be associated with increased delinquency,[18] but reported relationships with drug use are inconsistent.[19] In the present study, poverty level was not found to be associated with either drug use or delinquency. However, it is important to remember that the effects of poverty were assessed only at the school level in these analyses. The absence of a contextual effect for poverty does not imply that *within*-school variation between students in socio-economic status is not associated with problem behaviors.

The absence of a student-level measure of socioeconomic status also points to a limitation of the present analyses. To the extent that socioeconomic differences between students are associated with problem behaviors, there is misspecification in the multilevel model examined here, resulting in a likelihood of some degree of upward bias in the estimated school-level effects. This should be kept in mind when considering the findings.

The possible interactive contextual influences of poverty and school sense of community on development also merit increased attention in future research. Coleman and Hoffer[17] provided two scenarios of how school sense of community might differentially affect children whose backgrounds differ in "social capital."[16] On the one hand, attending a school that functions as a community might amplify the advantages conferred by a privileged social and economic background. Alternatively, the benefits of a supportive school environment might counteract the effects of a deprived background. Some previous research suggests that attending a school with a functional sense of community may confer the greatest benefits on students from the most deprived backgrounds.[8] However, the present findings suggest that the reductions in delinquency generally associated with an increased sense of school as a community did not hold among schools where most students were poor. Clearly, more research is needed to elucidate the joint and interactive effects of different contextual influences on development.

An important limitation of the present study is that the findings are based on cross-sectional data. Clear evidence of causation thus cannot be provided. Although we believe that a school-effects explanation is most likely, given theory and prior research, we cannot rule out reciprocal influences of problem behaviors on the school sense of community. A direct test of the school-context hypothesis must await longitudinal analyses of subsequent waves of data from these schools. The intervention designed to increase school sense of community in half of the participating schools, if effective, will provide clearer evidence of causal influence.

In conclusion, the present findings contribute to a small but growing body of research on the importance of the social

context of schools in general, and the sense of school as a community in particular, to developmental outcomes. Many important issues and questions remain to be addressed, and we hope that this study will help to focus greater attention on contextual influences in future research. □

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References

1. Hawkins JD, Lishner DM. Schooling and delinquency. In: Johnson EH, ed. *Handbook on Crime and Delinquency Prevention*. Westport, Conn: Greenwood Press; 1987:179–221.
2. Kellam SG, Brown CH, Fleming JP. The prevention of teenage substance abuse: longitudinal research and strategy. In: Coates TJ, Peterson AL, Perry C, eds. *Promoting Adolescent Health: A Dialogue on Research and Practice*. New York, NY: Academic Press; 1982:171–200.
3. Bursik RJ. Social disorganization and theories of crime and delinquency. *Criminology*. 1988;26:519–551.
4. Stark R. Deviant places: a theory of the ecology of crime. *Criminology*. 1987;25:893–909.
5. Shaw CR. *Delinquency Areas*. Chicago, Ill: University of Chicago Press; 1931.
6. Simcha-Fagan O, Schwartz JE. Neighborhood and delinquency: an assessment of contextual effects. *Criminology*. 1986;24:667–704.
7. McMillan DW, Chavis DM. Sense of community: a definition and theory. *J Community Psychol*. 1986;14:6–23.
8. Battistich V, Solomon D, Kim D, Watson M, Schaps S. Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: a multilevel analysis. *Am Educ Res J*. 1995;32:627–658.
9. Bryk AS, Driscoll ME. *The School as Community: Theoretical Foundations, Contextual Influences, and Consequences for Students and Teachers*. Madison, Wisc: National Center on Effective Secondary Schools; 1988.
10. Hawkins JD, Weis JG. The social development model: an integrated approach to delinquency prevention. *J Prim Prev*. 1985;6:73–97.
11. Hirschi T. *Causes of Delinquency*. Berkeley, Calif: University of California Press; 1969.
12. Roberts W, Hom A, Battistich V. Assessing students' and teachers' sense of the school as a caring community. Presented at the Annual Meeting of the American Educational Research Association; April 18–22, 1995; San Francisco, Calif.
13. Bryk AS, Raudenbush SW. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, Calif: Sage Publications; 1992.
14. Hallinger P, Murphy JF. The social context of effective schools. *Am J Educ*. 1986;94:328–355.
15. Rutter M, Maughan B, Mortimore P, Ouston J. *Fifteen Thousand Hours: Secondary Schools and Their Effects on Children*. Cambridge, Mass: Harvard University Press; 1979.
16. Coleman J. Social capital in the creation of human capital. *Am J Sociol*. 1988;94:95–120.
17. Coleman J, Hoffer T. *Public and Private High Schools: The Impact of Communities*. New York, NY: Basic Books; 1987.
18. Farrington DP, Loeber R, Elliott DS, et al. Advancing knowledge about the onset of delinquency and crime. In: Lahey BB, Kazdin AE, eds. *Advances in Clinical Child Psychology*. Vol. 13. New York, NY: Plenum Press; 1990:283–342.
19. Hawkins JD, Catalano RF, Miller JY. Risk and protective factors for alcohol and other drug problems in adolescence: implications for substance abuse prevention. *Psychol Bull*. 1992;112:64–105.