



PII S0022-4405(01)00059-0

School Social Climate and Individual Differences in Vulnerability to Psychopathology among Middle School Students

Gabriel P. Kuperminc
Georgia State University

Bonnie J. Leadbeater
University of Victoria

Sidney J. Blatt
Yale University

The present study used a person–environment–fit framework to examine the interaction of psychological vulnerabilities and perceptions of school climate to explain the emergence of behavioral and emotional problems during the middle school years. Cross-sectional and 1-year longitudinal analyses were conducted using data from 230 female and 230 male sixth- and seventh-grade students (50% non-Hispanic white, 27% Hispanic, 22% African American, and 3% other) attending a large ethnically and socioeconomically diverse middle school. Positive perceptions of school climate moderated the negative effects of self-criticism on both internalizing and externalizing problems and of a lack of efficacy on internalizing problems. Youth with high levels of self-criticism did not show expected increases in internalizing and externalizing problems when they perceived a positive school climate. Results were consistent with the idea that careful attention needs to be given to the social–emotional environment of middle schools, particularly for young adolescents preoccupied with issues of self-definition. © 2001 Society for the Study of School Psychology. Published by Elsevier Science Ltd

Keywords: School climate, Internalizing symptoms, Externalizing problems, Psychological vulnerability.

How do middle school environments affect young adolescent social development? The transition to middle school typically coincides with rapid changes in physical, emotional, and interpersonal development. This transition may lead to declines in academic performance, self-image, perceived

Received March 23, 2000; accepted December 20, 2000.

Address correspondence and reprint requests to Gabriel P. Kuperminc, Department of Psychology, Georgia State University, 140 Decatur Street, 11th Floor, Atlanta, GA 30303. E-mail: gkuperminc@gsu.edu

social support, and social relationships (e.g., Blyth, Simmons, & Carlton-Ford, 1983; Seidman, Allen, Aber, Mitchell, & Feinman, 1994). Recent research suggests that the negative psychological changes experienced by many young adolescents are associated with a developmental mismatch between the needs of these adolescents and the opportunities afforded them by their school environments (Eccles et al., 1993; Seidman et al., 1994). In contrast to elementary schools, greater emphasis on teacher control and discipline and fewer opportunities for student decision-making typically characterize public middle schools. The transition to middle school occurs precisely at a developmental stage in which young people begin to renegotiate autonomy with their parents, and to seek opportunities for developing intimate relationships with peers and other adults (Blatt, Hart, Quinlan, Leadbeater, & Auerbach, 1993; Eccles et al., 1993; Kuperminc, Leadbeater, Emmons, & Blatt, 1997; Leadbeater, Blatt, & Quinlan, 1995). Difficulties in establishing autonomy or forging relationships in middle school may exaggerate some youths' concerns about self-definition (e.g., How good am I at schoolwork or sports?) and about interpersonal relatedness (e.g., Am I liked? Will I be able to get help?).

The ability of young people to adjust to the various changes they encounter following the normative transition to middle school depends both on individual differences among children and on qualities of the school settings they attend (Alvidrez & Weinstein, 1993). For example, low-income and ethnic minority students are more likely than others to attend schools with few resources (Alvidrez & Weinstein, 1993) and become increasingly likely to experience academic difficulties as they progress from primary through secondary school (Alvidrez & Weinstein, 1993; Steinberg, Dornbusch, & Brown, 1992). Most studies (see Leadbeater et al., 1995) have found that girls experience more internalizing problems (e.g., anxiety or depression) than boys by early adolescence, whereas boys experience more externalizing problems (e.g., aggression or delinquent behavior). Depressive symptoms increase while self-esteem and body image decline for girls over the transition to middle school (Blyth et al., 1983; Crockett, Petersen, Graber, Schulenberg, & Ebata, 1989; Hirsch & Rapkin, 1987; Seidman et al., 1994). In contrast, boys often experience gains in self-esteem (Fenzel & Blyth, 1986). Using a person-environment-fit framework (Eccles et al., 1993; Seidman et al., 1994), the present study examined the unique and combined contributions of psychological vulnerabilities and perceptions of the social-emotional climate of their school to explaining the emergence of behavioral and emotional problems during the middle school years. We expected that students' internalizing and externalizing problems would be influenced by their personal beliefs regarding issues of self-definition and interpersonal relatedness and the intersection of those beliefs with their subjective experiences of the school's social climate (Emmons, Comer, & Haynes, 1996; Kuperminc, Leadbeater et al., 1997; Roeser & Eccles, 1998).

PSYCHOLOGICAL VULNERABILITY TO DEPRESSION AND PROBLEM BEHAVIORS

Researchers working from multiple theoretical perspectives (e.g., Allen, Moore, & Kuperminc, 1997; Blatt & Blass, 1996; Wiggins, 1991) have argued that psychological development progresses over the life-course along two primary dimensions: (a) *self-definition* (the development of a well-differentiated, integrated, realistic and, essentially, positive identity); and (b) *interpersonal relatedness* (the development of intimate, mutually satisfying, reciprocal interpersonal relationships). In response to the changes in school social organization from elementary to middle school, young adolescents who are preoccupied with self-definition or interpersonal relatedness may be particularly vulnerable to experiencing a developmental mismatch in middle school. Blatt and colleagues described how excessive concerns with self-definition and interpersonal relatedness contribute to vulnerability for depression and maladjustment. Individuals who are preoccupied with interpersonal relatedness (labeled *interpersonal concerns*) typically express “concerns about being rejected, hurting or offending people, and having difficulty managing anger and aggression for fear of losing someone” (Blatt, D’Afflitti, & Quinlan, 1976, pp. 384–385). Concerns with self-definition may be expressed through self-criticism or through the lack of a sense of efficacy (Kuperminc, Blatt, & Leadbeater, 1997). Self-criticism involves “feeling guilty, empty, hopeless, unsatisfied and insecure; having failed to meet expectations and standards; and being unable to assume responsibility” (Blatt et al., 1976, p. 385). Feelings of efficacy include “goal oriented strivings and feelings of personal accomplishment” (Blatt et al., 1976, p. 385). For example, frequent classroom changes and few opportunities for extended contact with a teacher can make children feel anonymous in the middle school setting; however, a child may interpret difficulties in forging a personal relationship with his or her homeroom teacher as rejection (interpersonal concern) or as a failure to live up to the teacher’s expectations (self-criticism or lack of efficacy).

Studies have consistently found that self-criticism is associated with both internalizing and externalizing problems, and interpersonal concerns are associated primarily with internalizing problems (Blatt et al., 1993; Kuperminc, Blatt, et al., 1997; Leadbeater et al., 1999). Studies generally have found few gender differences in levels of self-criticism, but have found that adolescent girls report greater interpersonal concerns than boys do. These vulnerability factors also appear to have long-term consequences. For example, Zuroff, Koestner, and Powers (1993) found that adolescents high in self-criticism at age 12 were socially disengaged during high school and were less satisfied with their marital and parenting relationships as adults compared to adolescents who were lower in self-criticism.

STUDENT PERCEPTIONS OF SCHOOL SOCIAL CLIMATE

Cross-sectional and longitudinal studies of middle and high school students have found that positive perceptions of school social climate (as distinguished from the academic-learning climate of classrooms or of the school as a whole) are associated with fewer emotional and behavioral problems (Kasen, Johnson, & Cohen, 1990; Kuperminc, Leadbeater, et al., 1997; Roeser & Eccles, 1998; Roeser, Eccles, & Sameroff, 1998), higher self-esteem, and better academic adjustment (Brand, Felner, & Dubois, 1996; Hoge, Smit, & Hanson, 1990; Roeser et al., 1998). School social climate is broadly defined in this study as the quality and frequency of interactions among and between adults and students (Emmons, Comer, & Haynes, 1996). Other facets of the school climate (e.g., the extent to which the learning environment rewards effort vs. performance, and emphasizes cooperation vs. competition; see Roeser & Eccles, 1998; Roeser et al., 1998) that have also been found to affect students' psychological adjustment were not examined in this study.

A positive social climate may have particularly strong constructive effects for the students at greatest risk of academic, emotional, and behavioral difficulties (Felner et al., 1995; Haynes, Emmons, & Ben-Avie, 1997). For example, consistent with past research, Kuperminc, Blatt, et al. (1997) found that middle school boys had greater self- and teacher-reported externalizing problems and were referred for school discipline problems more than girls. School climate perceptions, however, were associated more strongly with externalizing problems for boys than for girls, suggesting that positive perceptions of school are a stronger protective factor for boys. Those authors also found that African American boys and boys from low-income families gained particular benefit from perceptions of a positive social climate at school. A positive social climate may provide a "safe haven" for high-risk students, supporting healthy development and optimal learning, as well as discouraging maladaptive behavior (Haynes, 1998; Kuperminc, Leadbeater, et al., 1997).

The present study, using both cross-sectional and longitudinal data from a diverse middle school sample, examined the unique and interactive effects of school social climate perceptions and concerns with self-definition and interpersonal relatedness as predictors of internalizing and externalizing problems. Specifically, we hypothesized that those boys and girls who were most preoccupied with self-definition and interpersonal relatedness would be most likely to experience serious difficulties in social adjustment when they also experienced their school climate negatively. Although we did not directly measure students' perceptions of the "fit" between the school social environment and their developmental needs, we interpreted the combination of negative school climate perceptions with preoccupations about interpersonal relatedness and self-definition as reflecting a developmental mismatch.

METHOD

Participants

Participants were 230 female and 230 male sixth- and seventh-grade students (ages 11–14 years at the first assessment) attending a large public middle school in an ethnically and socioeconomically diverse metropolitan community in New York state. Prior to the first assessment, parental consent was obtained for 528 students (64% of the sixth and seventh grades). Of those, 499 students completed the questionnaire, 25 declined to participate and 4 dropped out before completing all the baseline questionnaires. At the second assessment 1 year later, 92% ($n = 460$) of the original students participated.

Similar to the school population, 50% ($n = 230$) of the participants in the final sample were non-Hispanic white, 26% ($n = 122$) were Hispanic, 21% ($n = 96$) were African American, and 3% ($n = 12$) were Asian. Half of the participants were girls ($n = 230$). The majority (78%) lived with two parents (i.e., biological, adoptive, or stepparents); 20% lived with one parent (usually the mother); and 2% lived with other parents or guardians. Thirty-three percent received federally subsidized school lunches.

Procedure

Data were collected in two assessments (1 year apart) in January of 1995 and 1996. In each year, \$10 was donated to the school's student activity fund on behalf of each participating student; participants were also treated to snacks at the end of the assessment day. Questionnaires were group administered in classrooms of 20–25 students, and make-up sessions were conducted for absent students. A member of the research team introduced each questionnaire and read each item aloud to control for reading comprehension. A Spanish version was administered in separate bilingual sessions for students who requested it; special education students were also tested in separate sessions and allowed extra time.

Measures

Identical self-report measures were used in Years 1 and 2 to tap externalizing and internalizing problems, psychological vulnerabilities, and perceptions of school climate. All of these measures have been validated in previous research with young adolescents; all of the measures had high levels of internal consistency ($\alpha \geq .80$) in the present study.¹

¹The subscales of the school climate survey, which were examined in exploratory analyses, also showed adequate levels of internal consistency ($\alpha \geq .60$).

Externalizing and internalizing problems were measured using the Youth Self Report (YSR; Achenbach, 1991). The YSR has been used widely with normal and clinically referred youth, and has shown adequate levels of reliability and validity in assessing a broad range of behavioral and emotional problems experienced by youth ages 11 through 18 years. Adolescents rated how well each of 112 items described them over the past 6 months on a 3-point scale (0 = *not true*; 1 = *somewhat true*; 2 = *very true or often true*).

Psychological vulnerabilities were measured using the 66-item Depressive Experiences Questionnaire for Adolescents (DEQA; Blatt, Schaffer, Bers, & Quinlan, 1992), which assesses adolescents' interpersonal concerns, self-criticism, and efficacy. Recent research (Fichman et al., 1994; Kuperminc, Blatt, et al., 1997) has validated the three factors of the DEQA in middle school-aged youth. Consistent with past research, factor scores were computed using the results of principal components analysis with varimax rotation (Blatt et al., 1992). Items with high loadings on interpersonal concerns include "Without the support of others who are close to me, I would be helpless." Items with high loadings on self-criticism include "If I fail to live up to expectations, I feel unworthy." Items with high loadings on efficacy include "I have many inner strengths and abilities." Responses are given on a 7-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*).

School social climate perceptions were measured using the School Climate Scale (SCS; Haynes, Emmons, & Comer, 1993). This 47-item scale assesses student perceptions of seven dimensions of the social climate including (a) achievement motivation, (b) fairness, (c) order and discipline, (d) parent involvement, (e) sharing of resources, (f) student interpersonal relationships, and (g) student-teacher relationships. (A 5-item subscale describing appearance of the school building was omitted.) Example items include "My school is a safe place" and "Everyone is treated equally well at my school." Items are rated on a 3-point scale (1 = *disagree*; 3 = *agree*).

School records provided data on student gender, race or ethnicity, and socioeconomic status (SES). The school's categorization of student ethnicity was based on parent reports upon enrolling their children in the school district. Two dummy variables marking status as African American or Hispanic, respectively, were created in order to examine effects of minority group status. School records indicating whether a student qualified for a free or reduced-price lunch provided an indicator of low SES.

Analysis

Preliminary analysis, using multivariate analysis of variance (MANOVA) with repeated measures, examined gender differences and changes over the 1-year study period in the criterion and independent variables. Correlations among these variables were then examined separately for girls and

boys, given past findings of gender differences (Kuperminc, Leadbeater et al., 1997; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). Hierarchical multiple regression was then used to examine the relative contributions to explained variance in internalizing and externalizing problems of school climate perceptions, psychological vulnerabilities, and the interactions of school climate perceptions with psychological vulnerabilities. Demographic variables were entered in the first step of the hierarchical regression equations, followed by psychological vulnerabilities in the second step, and school climate perceptions in the third step (see Cohen & Cohen, 1983). To explore gender differences in these processes, two- and three-way interactions involving gender were also computed. Exploratory analyses examined subscales from the SCS in order to assess how specific aspects of school social climate influence the results.

RESULTS

Means, standard deviations, and F -tests from two-way (Gender \times Time) MANOVAs with repeated measures are displayed in Table 1. Consistent with past research (Simons-Morton, Crump, Haynie, & Saylor, 1999), school climate perceptions declined over the 1-year interval, but did not differ by gender. The MANOVA revealed significant effects for gender and time on psychological vulnerabilities. Consistent with past research (e.g., Leadbeater et al., 1995), girls reported greater interpersonal concerns than boys, $F(1, 458) = 58.18, p < .001$. In contrast to past research that has found no gender differences in self-criticism, boys reported higher self-criticism than girls, $F(1, 458) = 5.29, p < .05$ (elsewhere we have noted that this gender difference was not present in Year 1 but emerged in Year 2; see Leadbeater et al., 1999). Girls and boys did not differ in levels of efficacy. Interpersonal concerns declined over the 1-year interval, $F(1, 458) = 27.56, p < .001$, as did self-criticism, $F(1, 458) = 7.21, p < .001$. Notably, efficacy also declined, $F(1, 458) = 40.08, p < .001$. Girls reported higher levels of internalizing problems, $F(1, 458) = 13.53, p < .001$, and boys reported more externalizing problems, $F(1, 458) = 7.23, p < .01$. Whereas internalizing problems declined for both boys and girls, $F(1, 458) = 20.90, p < .001$, levels of externalizing problems stayed relatively constant.

Correlations among criterion and independent variables were examined next for boys and girls separately (see Table 2). Correlations with absolute values above .20 were significant after Bonferroni correction. The correlations between psychological vulnerabilities and school climate perceptions ranged from $-.31$ through $.32$, indicating that these variables are relatively independent. Most correlations of school climate perceptions and psychological vulnerabilities with internalizing and externalizing problems were

significant, and all were in expected directions. That is, lower levels of internalizing and externalizing problems were associated with more positive school climate perceptions and lower levels of psychological vulnerability.

Regression Analysis

Tables 3 and 4 summarize the results of the hierarchical multiple regression analyses examining the contributions of psychological vulnerability and school climate perceptions on explaining variance in internalizing and externalizing problems. The results of cross-sectional (Year 1) and longitudinal (Year 2) analyses were similar; therefore, description and interpretation of results will focus mainly on the longitudinal analyses.

Internalizing problems. Regressions of internalizing problems revealed few effects of demographic variables (see Table 3). Overall, the Year 2 regression equation explained 53% of the variance in internalizing problems. As expected, girls reported more internalizing problems than boys. After accounting for background variables and prior internalizing problems, psychological vulnerabilities accounted for 17% of the variance in internalizing problems. School climate perceptions accounted for an additional 2% of the variance. Lower levels of self-criticism and interpersonal concerns, and higher levels of efficacy and school climate perceptions were associated with fewer internalizing problems.

A significant interaction of school climate perceptions with self-criticism was found (see Figure 1). The positive association between self-criticism and internalizing problems was stronger for adolescents who held negative school climate perceptions than for those with positive school climate perceptions. Thus, self-critical adolescents were protected from increases in internalizing problems when they held positive school climate perceptions. A significant interaction was also found only in Year 1 data between school climate perceptions and efficacy. As seen in Figure 1, the negative association between efficacy and internalizing problems was stronger for adolescents who held negative school climate perceptions than for those who held positive school climate perceptions. Thus, adolescents who were low in efficacy were protected from increases in internalizing problems when they held positive school climate perceptions. Follow-up analyses (i.e., examination of two-way interactions of Gender \times Psychological Vulnerability and Gender \times School Climate Perceptions, and three-way interactions of Gender \times School Climate \times Psychological Vulnerability) revealed no significant gender differences in these processes.²

²Several interactions involving gender approached significance ($p < .10$). These suggested that the associations of self-criticism, interpersonal concerns, and efficacy with Year 1 internalizing problems were somewhat stronger for girls than boys, and that the moderating effect of school climate on the association of self-criticism with Year 1 internalizing problems was somewhat stronger for girls.

Table 2
Correlations among School Climate Perceptions, Psychological Vulnerability, and Problem Behaviors for Girls and Boys

	1	2	3	4	5	6	7	8	9	10	11	12
School Climate												
1. (Y1)		.57	-.06	-.18	.17	.14	.29	.17	-.18	-.19	-.33	-.31
2. (Y2)	.53		-.11	-.31	.01	.01	.32	.34	-.22	-.35	-.22	-.35
Vulnerability												
3. Self-criticism (Y1)	-.01	.01		.59	.02	.01	-.03	-.31	.52	.37	.29	.19
4. Self-criticism (Y2)	.00	-.02	.56		.02	.07	-.29	-.37	.45	.60	.34	.44
5. Int. concerns (Y1)	.13	.17	.02	.12		.58	-.12	-.09	.39	.23	.09	.04
6. Int. concerns (Y2)	.17	.10	.02	.19	.49		-.06	.00	.22	.23	.02	.04
7. Efficacy (Y1)	.22	.09	.05	-.10	.02	-.10		.51	-.27	-.29	-.25	-.25
8. Efficacy (Y2)	.18	.15	.00	-.05	.07	.03	.45		-.34	-.44	-.27	-.34
Problem Behavior												
9. Internalizing (Y1)	-.24	-.11	.40	.28	.27	.29	-.19	-.14		.60	.53	.31
10. Internalizing (Y2)	-.18	-.18	.20	.45	.23	.37	-.23	-.21	.50		.40	.59
11. Externalizing (Y1)	-.48	-.27	.30	.18	-.09	-.14	-.18	-.12	.57	.25		.64
12. Externalizing (Y2)	-.39	-.40	.09	.30	-.02	.03	-.22	-.25	.29	.62	.53	

Note: Correlations for girls are above the diagonal and for boys below the diagonal. Correlations above .20 are significant ($p < .05$) after Bonferroni correction. Y1 = Year 1; Y2 = Year 2; Int. concerns = Interpersonal concerns.

Table 3
Hierarchical Regression of Internalizing Problems on School Climate and Psychological Vulnerability

Step	Year 1 Internalizing			Year 2 Internalizing		
	β	R^2	ΔR^2	β	R^2	ΔR^2
1.		.05***	.05***		.33***	.33***
Internalizing (Year 1)	—			.32***		
Gender (female)	.09*			.08*		
African American	.06			.02		
Hispanic	.04			-.02		
Low income	-.06			-.03		
2.		.39***	.34***		.50***	.17***
Self-criticism (SC)	.47***			.33***		
Interpersonal concerns (IC)	.35***			.21***		
Efficacy (EF)	-.14***			-.13***		
3.		.43***	.03***		.52***	.02***
School climate	-.20***			-.13***		
4.		.46***	.03***		.53***	.01**
SC \times School climate	-.15***			-.12***		
IC \times School climate	-.00			.03		
EF \times School climate	.10**			.01		

Note: Independent variables for Year 1 equation are from Year 1; independent variables for Year 2 equation are from Year 2 (controlling for Year 1 internalizing problems). β s are standardized regression weights from the final model.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Externalizing problems. Table 4 summarizes the regression results for externalizing problems. Overall, the Year 2 regression equation explained 49% of the variance in externalizing problems. Demographic variables did not make a significant contribution after controlling for previous levels of externalizing problems. After accounting for background variables, psychological vulnerabilities accounted for 8% of the variance in externalizing problems. Consistent with prior research, self-criticism and efficacy contributed significantly to explained variance in externalizing problems, but interpersonal concerns did not. School climate perceptions accounted independently for 5% of the variance in externalizing problems. Lower levels of self-criticism and higher levels of efficacy and school climate perceptions were associated with fewer externalizing problems.

A significant interaction of school climate perceptions with self-criticism was found. As shown in Figure 2, the positive association between self-criticism and externalizing problems was stronger for adolescents with negative climate perceptions than for those with positive climate perceptions. Thus, self-critical adolescents were protected from increases in externalizing problems when they held positive school climate perceptions. Examination of gender differences in these processes (i.e., two-way interactions of Gender \times Psychological Vulnerability, Gender \times School Climate Perceptions, and three-way interactions of Gender \times School Climate \times Psychological

Table 4
Hierarchical Regression of Externalizing Problems on School Climate and Psychological Vulnerability

Step	Year 1 Externalizing			Year 2 Externalizing		
	β	R^2	ΔR^2	β	R^2	ΔR^2
1.		.08***	.08***		.35***	.35***
Externalizing (Year 1)	—			.47***		
Gender (female)	-.13**			.00		
African American	.16***			-.02		
Hispanic	-.01			.00		
Low income	-.01			-.08 ⁺		
2.		.19***	.11***		.43***	.08***
Self-criticism (SC)	.27***			.19***		
Interpersonal concerns (IC)	.05			.06 ⁺		
Efficacy (EF)	-.12**			-.08*		
3.		.29***	.10***		.48***	.05***
School Climate	-.33***			-.25***		
4.		.31***	.01*		.49***	.01**
SC \times School climate	-.12**			-.11***		
IC \times School climate	.05			.01		
EF \times School climate	.00			.02		

Note. Independent variables for Year 1 equation are from Year 1; independent variables for Year 2 equation are from Year 2 (controlling for Year 1 externalizing problems). β s are standardized regression weights from the final model.

⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Vulnerability) revealed that the association between school climate perceptions and externalizing problems was stronger for boys than girls.³

Follow-up analyses. Additional regression analyses were conducted to examine the independent contributions of the seven dimensions of school climate measured by the SCS: (a) achievement motivation, (b) fairness, (c) order and discipline, (d) parent involvement, (e) sharing of resources, (f) student interpersonal relationships, and (g) student–teacher relationships. These equations were identical to those described previously, except that the seven dimensions of school climate perceptions were entered into each equation instead of overall school climate. The seven dimensions of school climate perceptions accounted for the same increment of variance (2%, $p < .01$) in internalizing problems as did overall school climate (See Table 3); however, none of the dimensions had a significant regression weight.⁴

³Two other interactions involving gender approached significance ($p < .10$), suggesting that the negative association of interpersonal concerns and the positive association of efficacy with externalizing problems are somewhat stronger for girls than boys.

⁴In contrast, the partial correlations between internalizing problems and six of the seven dimensions (controlling for prior levels of internalizing problems, gender, ethnicity, low-income, and psychological vulnerabilities) were significant with values ranging from $-.09$ through $-.15$, $p < .05$. The only exception was achievement motivation.

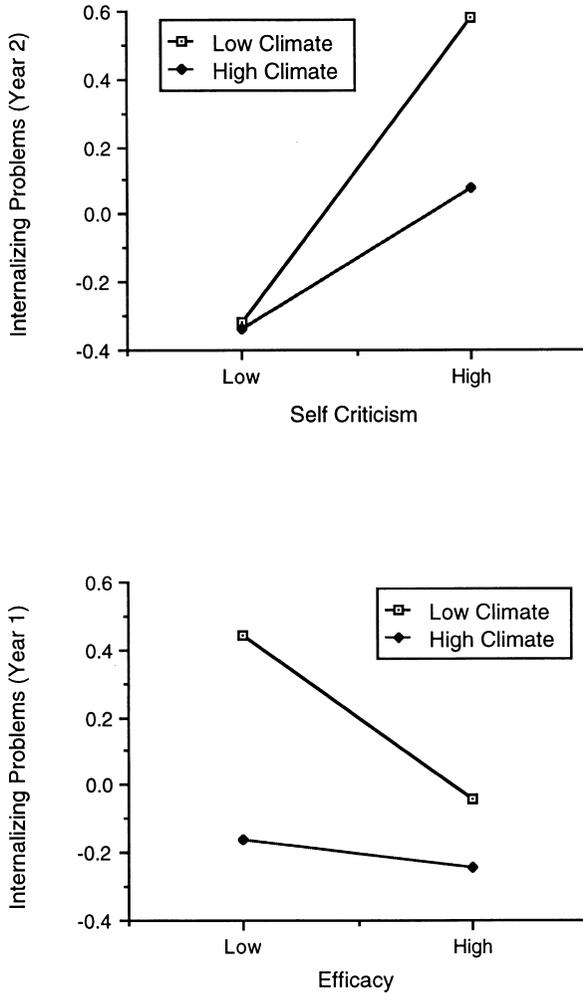


Figure 1. Interactions of school climate perceptions with self-criticism and efficacy predicting internalizing problems.

Similarly, the block of seven dimensions of school climate perceptions accounted for about the same increment of variance (7%, $p < .01$) in externalizing problems as did overall school climate (see Table 4); however, only two dimensions—fairness ($\beta = -.12$, $p < .01$) and student–teacher relationships ($\beta = -.15$, $p < .01$)—had significant regression weights.⁵ It may

⁵In contrast, the partial correlations between externalizing problems and six of the seven dimensions (controlling for prior levels of externalizing problems, gender, ethnicity, low-income, and psychological vulnerabilities) were significant with values ranging from $-.12$ through $-.30$, $p < .05$. The only exception was parental involvement.

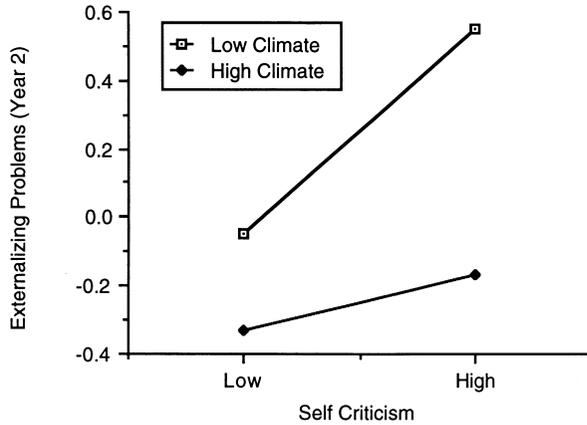


Figure 2. Interaction of school climate perceptions with self-criticism predicting Year 2 externalizing problems.

be that student perceptions about these various dimensions contribute to a global perception of their school as a positive or negative setting.

An additional regression analysis was conducted to examine an alternative explanation for the regression findings that high levels of emotional and behavioral problems may lead to negative school climate perceptions. To address this possibility, a hierarchical regression equation examined whether adolescents who *previously* had high levels of maladjustment were experiencing the school climate less positively than others by Year 2. The regression equation was identical to the regressions of internalizing and externalizing problems, except that Year 2 school climate perceptions comprised the dependent variable and Year 1 internalizing and externalizing problems were entered as independent variables.⁶ There were no effects of Year 1 internalizing or externalizing problems predicting Year 2 school climate perceptions, after controlling for Year 1 school climate perceptions. Thus, changes in school climate perceptions from one year to the next cannot be attributed to prior levels of maladjustment.

DISCUSSION

Increasingly, researchers are in agreement that schooling affects not only academic and achievement outcomes, but also children and adolescents' psychosocial development (Adelman & Taylor, 1998; Alvidrez & Weinstein,

⁶Order of entry in this regression equation was as follows: Year 1 school climate, gender, ethnicity, and low-income (Step 1); psychological vulnerabilities (Step 2); Year 1 externalizing and internalizing problems (Step 3).

1993; Comer et al., 1996; Haynes, 1998; Linney & Seidman, 1989). School-based efforts to attend to children's mental health needs are often marginalized as secondary, even expendable, support services (Adelman & Taylor, 1998). The ratio of school psychologists and social workers to students averages about 1 to 2,500 in school districts, and the ratio of school counselors to students averages about 1 to 1,000. These professionals tend to focus on students seen as problematic or has having problems, and their interventions typically focus on direct intervention, including crisis intervention, assessment, brief consultation, and referral (Adelman & Taylor, 1998). Prevention and early intervention programs, which can address problems before they occur or before they reach serious levels, are less common. When implemented in schools, such programs tend to be person-centered (e.g., focused on increasing individuals' interpersonal problem-solving skills or drug refusal skills, etc.; see Durlak, 1995) rather than focused on modifying the environment to reduce stress, create opportunities for positive interpersonal relationships, or promote participation and involvement (Alvidrez & Weinstein, 1993; Linney & Seidman, 1989).

The present findings confirm the importance of work focused on building individuals' skills, particularly in the areas of personal competence and interpersonal relationships. The findings also indicate that interventions to improve the fit between the school social setting and the developmental needs of young adolescents are also critical. By middle school, adolescents are experiencing the influence of multiple environments. Their perceptions of climate factors in family, peer, school, and recreational activities may differ widely. Thus, one possibility is that youth who feel they cannot meet the expectations of a particularly critical parent may make gains in self-concept through positive experiences in other domains. Future research is needed to examine this possibility. In the present study, self-critical youth who perceived their school as an orderly place where all are treated fairly and have equal opportunities for learning, and where student-student and teacher-student relationships are positive did not show the same increases in internalizing and externalizing problems as self-critical youth with negative perceptions of school climate. The different dimensions of students' school climate perceptions appeared to contribute to a global sense of the school as positive or negative; consequently, interventions to improve the social climate of schools may need to have a broad focus on interpersonal and procedural dimensions. Exploratory analyses point to teacher-student relationships and fairness in enforcing school policies as important foci of school change that may result in improving students' behavioral adjustment and, perhaps, reducing disruptive behavior. Felner and Adan (1988) have described a program in which homeroom teachers are trained to provide counseling and guidance to their students, thereby increasing personal contact and increasing the likelihood of strengthening student-teacher bonding. Although not examined in the

present study, it is likely that aspects of the learning climate in classrooms and in the school as a whole (e.g., a focus on cooperation vs. competition for grades) may contribute to students' psychological well-being.

Further research is necessary to understand individual differences in perceptions of school climate. For example, it was not the case in this study that initially, more internalizing or externalizing youth merely saw the school more negatively. Thus, even students with a history of emotional and behavioral problems can benefit from a school environment they perceive to be positive. On the other hand, it is possible that school social climate may have differing meanings for students based on gender, social class, ethnicity, or academic standing. Such factors as classroom differences in ethnic and friendship groupings, ability tracking, classroom levels of aggression, and teacher motivation could also create differences in school climate perceptions (Meinrath & Kuperminc, 1997).

Whereas emotional and behavioral problems were predicted by students' perceptions of a positive school social climate, relatively little intervention research has focused on *objective* organizational changes to schools that might result in improvements in *subjective* perceptions of school climate. Research focused on classroom and school settings has begun to document some strategies that result in improvements in students' academic and social functioning. These strategies range from training teachers in proactive classroom management techniques (Durlak, 1995) to organizational changes in school social organization and administration (Comer et al., 1996; Durlak, 1995; Felner & Adan, 1988; Weinstein et al., 1991). Research is only beginning to examine the mechanisms by which creating a positive and supportive school environment that optimizes children's intellectual development can also result in positive social development. Perhaps the most comprehensive and well-documented example is the *School Development Program* (SDP; Comer et al., 1996). The SDP involves parents, teachers, and students in the management and coordination of all school activities, and emphasizes collaboration, consensus, and shared responsibility to develop a comprehensive school plan, provide necessary training to staff, and evaluate and modify the school's performance. Recent research shows that significant increases in student performance on standardized tests accompany effective implementation of the various elements of the SDP (Haynes et al., 1998). Another example is the *Child Development Project* (Solomon, Watson, Battistich, Schaps, & Delucchi, 1996), which has begun to document how a comprehensive child-centered approach to teaching and classroom management results in students' reporting increased sense of community in school (a construct closely related to school climate). The findings of the present study add to a growing body of knowledge pointing to the promise of intervening in school settings to prevent maladjustment in young adolescents, but more work is needed to develop appropriate interventions that meet the diverse developmental needs of middle school-aged children.

ACKNOWLEDGMENTS

This research was supported by a grant from the William T. Grant Foundation. The authors thank the students and staff who participated for their cooperation and insight. Special thanks to Saul Yanofsky, Robert Greenberg, and Bernard Cropsey. Thanks also to Roger Bakeman for his advice on statistical analysis.

REFERENCES

- Achenbach, T. M. (1991). *Manual for the Youth Self Report and 1991 profile*. Burlington, VT: University of Vermont Department of Psychiatry.
- Adelman, H. S., & Taylor, L. (1998). Reframing mental health in schools and expanding school reform. *Educational Psychologist, 33*, 135–152.
- Allen, J. P., Moore, C. W., & Kuperminc, G. P. (1997). Developmental approaches to understanding adolescent deviance. In S. S. Luthar, J. A. Burack, D. Cicchetti, & J. Weisz (Eds.), *Developmental psychopathology: Perspectives on risk and disorder* (pp. 548–567). Cambridge, UK: Cambridge University Press.
- Alvidrez, J., & Weinstein, R. S. (1993). The nature of “schooling” in school transitions: A critical re-examination. *Prevention in Human Services, 10*, 7–26.
- Blatt, S. J., & Blass, R. B. (1996). Relatedness and self-definition: A dialectical model of personality development. In G. G. Noam & K. Fischer (Eds.), *Development and vulnerability in relationships*. Hillsdale, NJ: Erlbaum.
- Blatt, S. J., D’Afflitti, J. P., & Quinlan, D. M. (1976). Experiences of depression in normal young adults. *Journal of Abnormal Psychology, 85*, 383–389.
- Blatt, S. J., Hart, B., Quinlan, D. M., Leadbeater, B., & Auerbach, J. (1993). Interpersonal and self-critical dysphoria and behavioral problems in adolescents. *Journal of Youth and Adolescence, 22*, 253–269.
- Blatt, S. J., Schaffer, C. E., Bers, S. A., & Quinlan, D. M. (1992). Psychometric properties of the Depressive Experiences Questionnaire for Adolescents. *Journal of Personality Assessment, 59*, 82–98.
- Blyth, D. A., Simmons, R. G., & Carlton-Ford, S. (1983). The adjustment of early adolescents to school transitions. *Journal of Early Adolescence, 3*, 105–120.
- Brand, S., Felner, R. D., & Dubois, D. L. (1996). *Prospective study of school climate, social disadvantage, and academic adjustment in early adolescence*. Paper presented at the biennial meeting of the Society for Research on Adolescence, Boston, MA, March.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Comer, J. P., Haynes, N. M., Joyner, E. T., & Ben-Avie, M. (1996). *Rallying the whole village: The Comer process for reforming education*. New York: Teachers College Press.
- Crockett, L. J., Petersen, A. C., Graber, J. A., Schulenberg, J. E., & Ebata, A. (1989). School transitions and adjustment during early adolescence. *Journal of Early Adolescence, 9*, 181–210.
- Durlak, J. A. (1995). *School-based prevention programs for children and adolescents*. Thousand Oaks, CA: Sage.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & MacIver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents’ experiences in schools and in families. *American Psychologist, 48*, 90–101.

- Emmons, C. L., Comer, J. P., & Haynes, N. M. (1996). Translating theory into practice: Comer's theory of school reform. In J. P. Comer, N. M. Haynes, E. Joyner, & M. Ben-Avie (Eds.), *Rallying the whole village* (pp. 27-41). New York: Teachers College Press.
- Felner, R. D., & Adan, A. M. (1988). The school transitional environment project: An ecological intervention and evaluation. In R. H. Price, E. L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), *Fourteen ounces of prevention* (pp. 29-40). Washington, DC: American Psychological Association.
- Felner, R. D., Brand, S., DuBois, D. L., Adan, A. M., Mulhall, P. F., & Evans, E. G. (1995). Socioeconomic disadvantage, proximal environmental experiences, and socioemotional and academic adjustment in early adolescence: Investigation of a mediated effects model. *Child Development, 66*, 774-792.
- Fenzel, L. M., & Blyth, D. A. (1986). Individual adjustment to school transactions: An exploration of the role of positive peer relations. *Journal of Early Adolescence, 6*, 315-329.
- Fichman, L., Koestner, R., & Zuroff, D. C. (1994). Depressive styles in adolescence: Assessment, relation to social functioning, and developmental trends. *Journal of Youth and Adolescence, 23*, 315-330.
- Haynes, N. M. (1998). Creating safe and caring school communities: Comer School Development Program schools. *Journal of Negro Education, 65*, 308-314.
- Haynes, N. M., Emmons, C. L., & Ben-Avie, M. (1997). School climate as a factor in student adjustment and achievement. *Journal of Educational and Psychological Consultation, 8*, 321-329.
- Haynes, N. M., Emmons, C. L., & Comer, J. P. (1993). *Elementary and middle school climate survey*. New Haven, CT: Yale University Child Study Center.
- Haynes, N. M., Emmons, C. L., & Woodruff, D. W. (1998). School Development Program effects: Linking implementation to outcomes. *Journal of Education for Students Placed at Risk, 3*, 71-85.
- Hirsch, B. J., & Rapkin, B. D. (1987). The transition to junior high school: A longitudinal study of self-esteem, psychological symptomatology, school life and social support. *Child Development, 58*, 1235-1243.
- Hoge, D. R., Smit, E. K., & Hanson, S. L. (1990). School experiences predicting changes in self-esteem of sixth and seventh grade students. *Journal of Educational Psychology, 82*, 117-127.
- Kasen, S., Johnson, J., & Cohen, P. (1990). The impact of school emotional climate on student psychopathology. *Journal of Abnormal Child Psychology, 18*, 165-177.
- Kuperminc, G. P., Blatt, S. J., & Leadbeater, B. J. (1997). Relatedness, self-definition, and early adolescent adjustment. *Cognitive Therapy and Research, 21*, 59-78.
- Kuperminc, G. P., Leadbeater, B. J., Emmons, C., & Blatt, S. J. (1997). Perceived school climate and difficulties in the social adjustment of middle school students. *Applied Developmental Science, 1*, 76-88.
- Leadbeater, B. J., Blatt, S. J., & Quinlan, D. M. (1995). Gender-linked vulnerabilities to depressive symptoms, stress, and problem behaviors in adolescents. *Journal of Research on Adolescence, 5*, 1-29.
- Leadbeater, B. J., Kuperminc, G. P., Blatt, S. J., & Hertzog, C. (1999). A multivariate model of gender differences in adolescents' internalizing and externalizing problems. *Developmental Psychology, 35*, 1268-1282.
- Linney, J. A., & Seidman, E. (1989). The future of schooling. *American Psychologist, 44*, 336-340.
- Meinrath, S., & Kuperminc, G. P. (1997). Academic groupings in an ethnically and socioeconomically diverse middle school: A descriptive study of multiple social climates. Presented at the 1997 meeting of the Society for Community Research and Action, Columbia, SC, June.

- Roeser, R. W., & Eccles, J. S. (1998). Adolescents' perceptions of middle school: Relation to longitudinal changes in academic and psychological adjustment. *Journal of Research on Adolescence, 8*, 123–158.
- Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (1998). Academic and emotional functioning in early adolescence: Longitudinal relations, patterns, and prediction by experience in middle school. *Development and Psychopathology, 10*, 321–352.
- Seidman, E., Allen, L., Aber, J. L., Mitchell, C., & Feinman, J. (1994). The impact of school transitions in early adolescence on the self-system and perceived social context of poor urban youth. *Child Development, 65*, 507–522.
- Simons-Morton, B. G., Crump, A. D., Haynie, D. L., & Saylor, K. E. (1999). Student-school bonding and adolescent problem behavior. *Health Education Research, 14*, 99–107.
- Solomon, D., Watson, M., Battistich, V., Schaps, E., & Delucchi, K. (1996). Creating classrooms that students experience as communities. *American Journal of Community Psychology, 24*, 719–748.
- Steinberg, L., Dornbusch, S. M., & Brown, B. B. (1992). Ethnic differences in adolescent achievement. *American Psychologist, 47*, 723–729.
- Weinstein, R. S., Soule, C. R., Collins, F., Cone, J., Mehlhorn, M., Simontacchi, K. (1991). Expectations and high school change: Teacher-researcher collaboration to prevent school failure. *American Journal of Community Psychology, 19*, 333–364.
- Wiggins, J. S. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In W.W. Grove and D. Cicchetti (Eds.), *Thinking clearly about psychology, Volume 2: Personality and psychotherapy* (pp. 89–113). Minneapolis, MN: University of Minnesota Press.
- Zuroff, D. C., Koestner, R., & Powers, T. (1993). Self-criticism at age 12: A longitudinal study of adjustment. *Cognitive Therapy and Research, 18*, 367–385.