

Running head: RELATIONSHIPS AND GOAL STRUCTURES

Teacher support, school goal structures,
and teenage mothers' school engagement

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Abstract

This study investigates how perceptions of teacher support and achievement goal structures in the school environment correlate with school engagement, and whether depressive symptoms mediate or moderate this association, among 64 low-income teenage mothers. Controlling for prior grades, perceptions of teacher support correlate with higher levels of positive affect and lower levels of negative affect about school. Perceptions of an emphasis on mastery goals in the school environment correlate with higher levels of positive affect and lower levels of school alienation. In contrast, perceptions of an emphasis on performance goals in the school environment correlate with higher levels of negative affect and school alienation. Perceptions of performance goals were especially detrimental for teenage mothers with higher levels of depressive symptoms.

KEYWORDS: teenage mothers, school engagement, depressive symptoms.

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Educational attainment is widely recognized as a promising route to economic self-sufficiency, psychological and physical well being, and other long-term benefits for disadvantaged mothers and their children (Currie & Moretti, 2003; Furstenberg, Brooks-Gunn, & Morgan, 1987). "At-risk" youth, including low-income youth and teenage mothers, are especially likely to experience school difficulties, become alienated from school, and drop out (Fine, 1991; McLoyd, 1998; Scott-Jones & Turner, 1990). Given the limited life chances faced by many teenage mothers, one might expect that they would adopt lower, more "realistic," notions of educational success. Yet, most display "mainstream" educational goals (Quint, Bos, & Polit, 1997). Nevertheless, considerably fewer actually attain these goals and many young mothers feel that their academic and occupational aspirations are unattainable (Farber, 1989).

Understanding the pathways to educational success for low-income teenage mothers is especially important in the present economic climate and policy environment. First, educational attainment has a profound impact on future employment and earnings. The low earnings associated with limited education are worrisome given widespread evidence of the deleterious effects of low income on adult mental health and child development (Duncan & Brooks-Gunn, 1997; McLoyd, 1998). Second, participation in educational activities is now mandated as a condition of eligibility for cash welfare assistance in the Temporary Assistance for Needy Families (TANF) program (formerly Aid to Families with Dependent Children, AFDC) for unmarried minor teenage mothers who have not graduated from high school (Duffy & Levin-Epstein, 2002; Kalil & Danziger, 2000). A failure to comply with the school attendance requirement can lead to a sanction or a case closure, thus potentially increasing the economic

hardship of a teenage mother and her family (Duffy & Levin-Epstein, 2002). It is therefore particularly important to identify the factors that can help young low-income teenage mothers remain engaged in and progress in school.

The current study is situated in a larger body of research that aims to understand the association between adolescents' school experiences and their academic engagement. Among non-parenting adolescents, research suggests that students' perceptions of achievement goal structures (i.e., those that reflect the purpose of an individual's achievement pursuits) in the school environment, as well as perceptions of the student-teacher relationship, are associated with engagement in school and, in turn, academic achievement and attainment (for a review, see Eccles, Wigfield, & Schiefele, 1998; see also Eccles, Roeser, Wigfield, & Freedman-Doan, 1999; Goodenow, 1992; Harter, 1996; Maehr & Midgley, 1991; Resnick et al., 1997; Roeser, Midgley, & Urdan, 1996; Voelkl, 1995; Wentzel, 1996). Little research, however, has explored how these aspects of the school environment relate to school engagement (which is an important antecedent of eventual attainment) among teenage mothers (but see Kalil, 2002, for a recent example), despite considerable variation in their educational and economic attainment over the long term (Furstenberg, Brooks-Gunn, & Chase-Lansdale, 1989).

The second goal of this study is to investigate the role of teenage mothers' depressive symptoms in linking perceptions of the school environment to school engagement. Recent reviews have identified alarmingly high levels of depressive symptoms among low-income women in general and teenage mothers in particular. Teenage mothers' depressive symptoms may help to explain linkages between perceptions of the school environment and school engagement; these linkages may also differ for young mothers with different levels of depressive symptoms. The present study investigates these issues.

Background

Non-parenting adolescents typically are experimenting with adult roles, and their future adult goals may as yet be somewhat vague and undefined (Erikson, 1968). In contrast, teenage mothers are negotiating the demands of adolescence even as they take on the adult responsibilities of parenthood. In their “adult” role they are parents, but in their “adolescent” role, many are still high school students making important decisions about their commitment to current and future educational, occupational, and life goals (Erikson, 1968; Musick, 1993). With adult responsibilities immediately salient, teenage mothers -- in comparison to their non-parenting peers -- may be especially likely to seriously contemplate their educational options and commitment to schooling (Blinn, 1990). They may also begin to formulate expectations for the future and assess their chances for educational success in light of new parental responsibilities. Educational engagement during this time may be related to continuation in post-secondary education, and thus play an important role in successful transitions to adulthood for this at-risk group.

Developmental psychologists have long focused on interpersonal processes as major influences on children’s experience and behavior. Within educational psychology, research on achievement motivation has suggested that similar processes occur within schools and classrooms, and often refer to these processes as comprising the “school psychological environment” (Maehr & Midgley, 1991; Roeser, et al., 1996) or the “classroom social climate” (Ryan, Gheen, & Midgley, 1998). Students are hypothesized to attend to the ways in which teachers and students relate with each other and to the ways that school environments support the fulfillment of basic psychological needs such as good-quality social relationships. These interpersonal relationship aspects of the school environment can fulfill students’ needs for

belonging and competence and are in turn hypothesized to shape students' academic motivation and achievement (Battistich et al., 1995; Connell & Wellborn, 1991; Goodenow, 1992; Goodenow & Grady, 1993; Murdock, 1999; Roeser, Eccles, & Sameroff, 1998; Roeser, Eccles, & Strobel, 1998; Roeser et al., 1996; Voelkl, 1995).

Chief among these processes is the quality of relationships experienced with teachers. During adolescence, youth increasingly look toward non-parental adults for support and guidance. Much like parents, teachers can be warm, caring, and accepting; they can also express high expectations for all students, be available to help and guide, and press for understanding. The quality of relationships with teachers has been found to be an important determinant of a broad array of students' achievement motivation and adjustment (Goodenow, 1992; Roeser, Eccles, & Strobel, 1998; Wentzel, 1996, 1997, 2002), among elementary and middle school students (Birch & Ladd, 1996; Roeser, et al, 1996; Murdock, 1999; Wentzel, 1996, 1997, 2002), as well as among adolescents in the early years of high school (Resnick et al., 1997; Roeser, Eccles, & Sameroff, 1998).

High-quality relationships between teenage mothers and their teachers could in theory serve a protective function as mothers attempt to balance the demands and challenges of school and parenthood. These supportive relationships could help to establish the school environment as an "arena of comfort" (Call & Mortimer, 2001) among students whose home lives are often affected by chronic stressful conditions such as economic strain, violence, and physical or psychological problems among family members (Leadbeater & Way, 2001).

A second important line of work in educational psychology suggests that the achievement goals that teachers convey and that students perceive in the learning environment are primary antecedents of academic motivation and engagement. Achievement goals reflect the purpose of,

or reasons for, an individual's achievement pursuits. Two general types -- "performance" and "mastery" -- have been proposed (Ames, 1992; Covington, 2000; Maehr & Midgley, 1991; Pintrich, 2000). Numerous studies have examined the role of achievement goals in the learning environment and their association with students' motivational patterns (see Ames, 1992; Maehr & Midgley, 1991 for overviews).

Briefly, performance goals emphasize competition, social comparison, and relative ability among students (i.e., "my goal in this classroom is to do better than others" (Barron & Harackiewicz, 2001)). In classrooms or schools emphasizing performance goals, teachers emphasize the attainment of high grades and communicate to students that they can be differentiated in terms of "ability" by their performance on academic tasks. Mastery goal orientations, in contrast, emphasize that the purpose is to develop intellectual competence through learning itself (i.e., "my goal in this classroom is to understand the material" (Barron & Harackiewicz, 2001)). In learning environments emphasizing mastery goals, teachers emphasize that mistakes are a part of learning and that the purpose of doing schoolwork is to improve and develop competence.

Students can and do perceive such goal structures in the learning environment and these perceptions shape students' motivational patterns and engagement (Maehr & Midgley, 1991). Normative models of goal orientation generally suggest that performance goals undermine academic motivation and engagement, whereas mastery goals promote these outcomes (Ames, 1992, Covington, 2000; Dweck & Leggett, 1988; Elliott & Dweck, 1988; Kaplan & Maehr, 1999; Kumar, Gheen, & Kaplan, 2002; Roeser, et al. 1996; Ryan et al., 1998; Ryan & Patrick, 2001; but see Barron & Harackiewicz, 2001; Pintrich, 2000 for arguments supporting a multiple goal perspective). The associations between goal structures in the school or classroom

environment and academic motivation and engagement may be mediated by such characteristics as sense of academic self-efficacy, belief in the utility of effort, use of adaptive cognitive strategies, help-seeking activities, feelings of belonging in school, and level of behavior problems at school (Dweck & Leggett, 1988; Elliott & Dweck, 1988; Roeser et al., 1996; Ryan, et al., 1998). Academic motivation and engagement, in turn, influence achievement choices as well as effort, persistence, and performance on academic tasks (Wigfield & Eccles, 2000).

The present study thus examines the role of three specific aspects of teenage mothers' perceptions of their high school experiences – teacher support, emphasis on performance goals, and emphasis on mastery goals. Importantly, we examine these perceived school experiences in the context of another important realm of teenage mothers' life experiences – their psychological well-being, as indicated in their levels of depressive symptoms. Teenage mothers have been noted for their strikingly high levels of depressive symptomatology, which are partially, but not entirely, due to the young mothers' low income and single-parent status (Deal & Holt, 1998). Depression predicts lower levels of socio-economic success (e.g., unemployment) in low-income single mothers (Danziger, 2000) and it is associated with rapid repeat pregnancy (Gillmore, Lewis, Lohr, Spencer, & White, 1997) and poor school performance in teenage mothers (Dryfoos, 1990).

In the present study, we examine the role of depressive symptoms as both a mediator and a moderator of the linkages between perceptions of the school environment and teenage mothers' school engagement. For example, perceived support from teachers may help to alleviate teenage mothers' feelings of psychological distress and thereby help to sustain engagement in school. Moderating effects are also possible. As Muller (2001) reported, a caring student-teacher relationship is especially important for those students who are most at risk academically. Among

low-income teenage mothers, levels of depressive symptomatology may be a key risk factor for school disengagement. Perceived positive aspects of the school environment may therefore help to buffer against the deleterious effects of depressive symptoms. Conversely, perceived negative aspects of the school environment, to the extent that they act as additional stressors, may exacerbate the negative role of depressive symptoms on school engagement.

Method

Sample

Data for this investigation are drawn from a three-wave longitudinal study, the purpose of which is to examine the educational and occupational experiences of low-income teenage mothers in one predominantly urban area in a Midwestern state. To generate a sampling frame for the present study, names of potential participants were solicited from state welfare and social service agencies that served this population in this area. The sample was selected to represent unmarried minor adolescent mothers who were receiving Medicaid and/or Temporary Assistance for Needy Families in August 1997. From a list of 112 names and addresses provided, 91 teenage mothers were successfully interviewed at baseline (Wave 1; fall to winter 1997-98) yielding a response rate of 81%. Four percent of the potential sample refused to participate and 14% could not be located during the Wave 1 interview period.

Approximately one year later, respondents were re-contacted for participation in a follow-up interview. Eighty-one mothers completed a Wave 2 interview (fall to winter 1998-99), representing 89% of the Wave 1 sample. Approximately one year following the Wave 2 interview (winter 1999), respondents were re-contacted to participate in the third and final interview. Sixty-six teens participated in the Wave 3 interview, representing 73% of the original sample. The measures of perceived school environment were available only in the Wave 3

interview. The present analysis uses data from the 64 teenage mothers who participated in the Wave 3 interviews and who were not missing values for any study variables.

Most of the teenage mothers who participated in this study resided in two neighboring urban townships in the county from which the sample was drawn. At the time the data were collected, the poverty rates for the two townships were 27% and 35%, respectively and 62% of all children living in poverty in the county resided in these two townships. Teenage childbearing is especially high in this county, ranking 80th out of 86 counties in the state at the time the data were collected. In 1994, approximately 14% of white births and 33% of births to African Americans were to girls 18 and under.

Participants' ages ranged between 14 and 18 years old at Wave 1 ($M = 16.9$ years, $SD = .92$). On average, the adolescents had their first child at age 15.78 ($SD = 1.1$ year, range 13 to 17 years). About 88% reported that the pregnancy for their first child was unplanned. At the time of the Wave 1 interview, the ages of their first-born children ranged from newborn to 36 months, with a mean of 12.3 ($SD=10$). Almost all (89.1%) had only one child at the baseline interview. Forty-four percent of the teens in this sample are White, 47% are African American, and 9% were another race or ethnicity (1 was Indian/Alaskan Native, 3 were of "mixed" race, and 2 identified themselves as some other unidentified race). By Wave 3, teen mothers' ages ranged from 16 to 20, with the average age for the group around 19. These teens had on average 1.64 biological children (range 1-3), with half of the sample having more than one child.

Procedures

Trained survey administrators administered an extensive survey, in the mothers' own homes, about issues relevant to teenage mothers' educational and occupational experiences. Interviewers read all questions aloud and answered any questions about the survey. These

sessions lasted approximately one hour and were conducted privately. Teenage mothers received \$20 for their participation in each interview and were assured confidentiality.

Criterion Variables

Three measures of school engagement focused on teenage mothers' emotional experiences at school and their sense of belonging in the high school environment at Wave 3. The three measures of school engagement were taken from the Patterns of Adaptive Learning Survey (PALS; Midgley et al., 1998; see also Kaplan & Maehr, 1999; Kumar, Gheen, & Kaplan, 2002; Pintrich, 2000; Roeser, Midgley, & Urdan, 1996). These measures assess positive affect toward school, negative affect toward school, and school alienation. They were chosen as key indicators of engagement in and motivation for (or, conversely, disaffection from) school and may reflect important steps in a process leading to behavioral disengagement, such as dropping out or not continuing with schooling, risky behaviors, and curtailed educational attainment (Goodenow & Grady, 1994; Kumar et al., 2002; Murdock, 1999). In addition, affect toward school is the construct most frequently included in studies using a goal theory framework (Kumar et al., 2002).

Teens were asked to respond to the questions thinking about their current school or their most recent school experiences if they were not currently enrolled in school. All responses ranged from not at all true (coded "1") to very true (coded "5"). Positive affect is a five-item scale ($\alpha = .90$) and assesses how much the student enjoys various aspects of school. Statements include "I like being in my high school," "Most of the time, being in my high school puts me in a good mood," "I often feel excited and enthusiastic at my high school," "I enjoy my high school," and "I am happier when I am at my high school than when I am not at school." Higher numbers on this scale correspond to higher levels of positive affect.

Negative affect is also a five-item scale ($\alpha = .74$) measuring the level of frustration students feel at school. Items include “I often feel frustrated when I do school work,” “I feel tense and anxious much of the time I’m in my high school,” “My high school often makes me feel bad,” “I often don’t feel good about myself when I’m in school,” and “I am often angry when I am in my high school.” Higher responses on this scale indicate higher levels of negative affect. Principal components factor analysis with varimax rotation was used to confirm the two hypothesized affect measures. The analysis suggested two factors with Eigenvalues greater than one that, together, explained 64% of the variance. All factor loadings were above .57 on their primary factor. There were no dual loadings (no secondary loadings greater than .49).

School alienation is a four-item measure ($\alpha = .79$) assessing students’ sense of lack of belongingness in their high school environment. Items include “I often feel lonely at my high school,” “I feel like I don’t have many friends at my high school,” “I feel left out from other kids in my high school,” and “I feel like people at my high school don’t really know me.” Principal components factor analysis with varimax rotation confirmed these four items loaded onto one factor, explaining 63% of the variance. All factor loadings are presented in Table 1.

Predictor Variables

Following Maehr and Midgley (1991) and Roeser et al. (1996), this study was concerned with the perceived environment of the school as a whole. Therefore, we purposely used generalized school-level measures rather than domain- or classroom-specific (e.g., math or science, see Wigfield & Eccles, 2000) measures of the school environment. Teens reported their perceptions on the extent to which teachers in their high school advanced positive teacher-student relationships (teacher support), promoted competition and comparison among students (performance goals), or encouraged a constructive and creative learning environment (mastery

goals). Respondents were instructed to respond to the items with respect to their teachers and classes in general, rather than with specific teachers or classes in mind. These measures were also taken from the Patterns of Adaptive Learning Survey and have demonstrated reliability and variability in a number of studies (PALS; Midgley et al., 1998; see also Kaplan & Maehr, 1999; Roeser et al., 1996; Ryan & Patrick, 2001).

The measure of student-teacher relationships was used given its primacy as a critical factor influencing school engagement, especially the decision to leave high school, for low-income and minority youth (Goodenow, 1992; Resnick et al., 1997; Roeser et al., 1998; Voelkl, 1995; Wentzel, 1997, 2002; Murdock, 1999). The two measures of perceived goals in the school environment (performance and mastery) reflect core concepts in achievement goal theory and the broad set of questions concerning student motivation in the field of educational psychology (Eccles & Wigfield, 2002). These concepts have also been highlighted as key dimensions of the learning environment that play an important role in exacerbating vulnerability or promoting resilience in students who are at-risk for disengaging from school (Elliott & Dweck, 1988; Kumar et al., 2002).

These measures were assessed by 5-point Likert scales. Principal components factor analysis with varimax rotation was used to confirm the three hypothesized measures. The analysis suggested three factors with Eigenvalues greater than one that, together, explained 63% of the variance. All factor loadings were above .41 on their primary factor. There were no dual loadings (no secondary loadings greater than .49). The internal reliability of the teacher support, performance goals, and mastery goals scales are .86, .74, and .71, respectively. All constituent items had a five-point response scale where the scale for teacher support ranged from none of my teachers (coded "1") to all of my teachers (coded "5"), and both performance goal and mastery

goals scale ranged from 1 (*not at all true*) to 5 (*very true*). A description of the individual items and the factor loadings are presented in Table 2.

Control variables

In the multivariate analyses described below, several demographic and individual characteristics were statistically controlled to partial out their effects from those of the perceived school environment measures. The teen mother's age was calculated in years from the adolescents' birth date and the date of the Wave 3 interview. Teens reported on their number of biological children at Wave 3, distinguishing those who had more than one biological child (coded "1") from those with only one child (coded "0"). To assess general performance in school to date, teens reported, at Wave 3, their overall high school grades. The student's grades were coded from "Failing" = 1 through "All A's" = 9.

Mediator/Moderator Variable

Depressive symptoms at Wave 3 were measured with a 4-item scale using a subset of items from the Center for Epidemiological Studies depression scale (CES-D; Radloff, 1977). The CES-D is a widely used, standardized, self-report scale designed to measure depressive symptoms in the general population. The original CES-D Scale consists of 20 items that ask respondents about the frequency of their depressed mood, feelings of worthlessness, hopelessness, loneliness, loss of appetite, restless sleep, psychomotor retardation, and concentration problems. In the present study, time constraints precluded the administration of the full CES-D scale; however, Shrout and Yager (1989) demonstrated that items from the CES-D can be dropped without much loss in sensitivity or specificity. Teens were asked how often in the last week they felt a particular way, with responses ranging from "rarely or none of the time" (0) to "most or all of the time" (3). The four items asked the teenage mother how often she felt

“depressed,” “(she) could not shake the blues even with help from your family,” “lonely,” and “sad.” Responses to these questions were summed ($\alpha=.87$).

Results

Descriptive Statistics

Means, standard deviations, and inter-item correlations for all study variables are presented in Table 3. Average reported grades in high school corresponded to a number between “mostly C’s” and “B’s and C’s”. The average number of depressive symptoms is below the statistical midpoint on the scale. With respect to the perceived school environment, students reported slightly higher levels of mastery goals than performance goals in their school environments, and levels of perceived teacher support were relatively high. Reported levels of positive affect were relatively high, with lower reported levels of negative affect and school alienation.

Regression Analyses

We conducted a series of hierarchical Ordinary Least Squares (OLS) regression analyses, with five models for each of the three outcome measures. Model 1, the basic model, includes the demographic characteristics, high school grades, and the measures of perceived school environment. The measure of depressive symptoms is entered in Model 2, testing the mediating role of depressive symptoms in the linkages between perceived school environment and school engagement. In these models, we examine whether any significant coefficients on the measures of perceived school environment are substantially reduced with the inclusion of the depressive symptoms measure. If so, this would suggest an explanatory role for depressive symptoms. Models 3, 4, and 5 test the moderating role of depressive symptoms on teacher support, performance goals, and mastery goals, respectively. Due to the small sample size, these

interaction terms are entered separately into three regression equations. The model F-test and adjusted R square measures are also presented for each model. The results for positive affect are presented in Table 4, those for negative affect in Table 5, and those for school alienation in Table 6.

Prior to conducting the OLS models, we ran collinearity diagnostics. Although the presence of multicollinearity does not bias the OLS estimates, the variances of the OLS estimates of the parameters of the collinear variables can be large and thus can affect the precision of the estimates. Following Kennedy (1998), we test whether the R^2 from the regression exceeds the R^2 of any independent variable regressed on the other independent variables, and find that none of the secondary regressions had R^2 statistics that exceeded the original regression. We also calculate the variance inflation factor (VIF), assessing their meaning based on informal rules suggested by Chatterjee, Hadi, and Price (2000). These rules state that there is evidence of multicollinearity if the largest VIF is greater than 10 and the mean of all VIFs is considerably larger than 1. In no case are individual variable VIF values greater than 10 (none is greater than 1.7), and the mean VIF does not surpass 1.5. Therefore, there is no substantial evidence that collinearity poses a problem in the analyses presented below.

Positive Affect. Model 1 is highly significant and explains 41% of the adjusted variance in teenage mothers' reported positive affect toward school. Perceived teacher support and emphasis on mastery goals are each positively related to positive affect. When these coefficients are transformed into standardized measures, a one-unit increase in teacher support corresponds to about 40% of one standard deviation increase in positive affect. The effect size for mastery goals is approximately the same magnitude. Model 2 adds the measure of depressive symptoms, which is not significantly correlated with positive affect and plays no mediating role in

explaining the effects of teacher support and mastery goals. Among the interaction terms tested, only the one in model 4 is significant. The nature of the interaction suggests that higher perceived levels of performance goals in conjunction with greater depressive symptoms is negatively associated with positive affect about school.

Negative Affect. Table 5 presents the results predicting negative affect toward school. Model 1 is highly significant and explains 51% of the adjusted variance in negative affect. Having more than one child is predictive of lower negative affect (equivalent to almost 1/2 of one standard deviation), and better high school grades are also associated with lower levels of negative affect. Among the school environment measures, teenage mothers who report higher levels of teacher support report lower levels of negative affect about school, equal to .40 standard deviations. In contrast, higher performance goals are associated with greater levels of negative affect, an effect size of about .25 standard deviations. Model 2 introduces the depressive symptoms scale, which is not itself significant in the model and does not alter the effects of the school environment measures. None of the three interaction terms tested is significant.

School Alienation. Table 6 presents the results of the models predicting school alienation. Model 1 is significant and explains 31% of the adjusted variance in school alienation. Two of the three perceived school environment measures are predictive of school alienation. Higher perceived performance goals are associated with higher reports of school alienation, with an effect size of about .25 standard deviations. In contrast, higher perceived mastery goals are associated with lower reports of school alienation, with an effect size of about .40 standard deviations. Model 2 introduces the measure of depressive symptoms, which is significantly (positively) associated with school alienation (an effect size of about .25 standard deviations), although it does not mediate the associations between perceived performance and mastery goals

and school alienation. Among the three interaction terms tested, only the one between depressive symptoms and performance goals is significant, suggesting that higher levels of both depressive symptoms and perceived performance goals are associated with greater school alienation.

Discussion

This research was designed to address the associations between perceived teacher-student relationships, school goal structures, and teenage mothers' engagement in school. In addition, we tested the role of depressive symptoms in mediating and moderating these linkages. Controlling for prior grades, we found that teenage mothers' perceptions of teacher support correlate with higher levels of positive affect and lower levels of negative affect about school; perceptions of an emphasis on mastery goals in the school environment correlate with higher levels of positive affect about school and lower levels of school alienation; and perceptions of an emphasis on performance goals in the school environment correlate with higher levels of both negative affect about, and alienation from, school. Further, we found that higher perceived levels of performance goals in conjunction with greater depressive symptoms were associated with less positive affect about, and more alienation from, school.

This study thus adds to the growing body of work showing that socialization practices that have been deemed important with respect to parental behavior (e.g., providing nurturant, supportive, and developmentally appropriate contexts for development) are robust and can be generalizeable to the way that teachers and school contexts influence their students' academic motivation, engagement, and behavior (see Wentzel, 2002). Notably, these dimensions of the perceived school context accounted for significant amounts of variance in engagement outcomes in this sample of economically disadvantaged teenage mothers.

These findings correspond to those from a number of studies of non-parenting youth that have shown that students' academic motivation and engagement is predicted by their sense that teachers treat them fairly and respectfully in school environments where they feel accepted and valued (Battistich et al., 1995; Goodenow & Grady, 1993; Murdock, 1999; Roeser, Eccles, & Sameroff, 1998; Wentzel, 1997, 2002). Our findings are much like those of Wentzel (1997), who found that perceived caring from teachers predicted motivational outcomes among middle-school students, even when students' current levels of psychological distress as well as previous measures of motivation and performance were controlled. Indeed, student-teacher relationships may be key to understanding the process of alienation from school.

Teacher respect and emotional caring may be especially important for our sample population. The economically-disadvantaged and potentially stressful environments in which these young mothers were living and raising their children may have provided relatively fewer opportunities for nurturant interactions with caregivers (e.g., Leadbeater & Way, 2001). Perceptions of caring and respect from teachers might also serve as a broader measure of social support for the teenage mothers, helping to alleviate stress and allowing them to respond more effectively to academic challenges and opportunities.

The perceived purpose of learning in school also played an important role in teenage mothers' engagement. Our results support one of the basic tenets of achievement goal theory; namely, that achievement goals conveyed by the school can send a "message" to students about the purpose of learning, thus affecting students' own levels of engagement or disengagement from school (Ames, 1992). Specifically, students' perceptions that their teachers emphasized understanding and enjoying schoolwork (mastery goals) were related to higher levels of engagement in school. In contrast, perceptions that teachers emphasize competition among

students and getting good grades (performance goals) tended to be related to lower levels of school engagement. Unfortunately, some research suggests that teachers in schools serving low-income students place less emphasis on intrinsic motivation (akin to an emphasis on mastery goals) than do teachers serving higher-income students (Solomon & Battistich, 1996).

Our analysis of the mediating and moderating role of depressive symptoms yielded mixed effects. On one hand, we found no role for the hypothesized mediating role of depressive symptoms, largely because there was only one significant main effect of depressive symptoms (predicting school alienation). None of the significant coefficients on any of the perceived school environment measures changed substantially once levels of depressive symptoms were included in the model. However, we did find some evidence of the role of depressive symptoms as a moderator of the association between perceived school environment and school engagement. Specifically, among those with higher levels of depressive symptoms, a perceived school-level emphasis on performance goals was associated with lower levels of positive affect and higher levels of school alienation. These findings suggest that the effects of the “negative” aspects of the school environment are even more deleterious when students are psychologically distressed. Given that teenage mothers in most studies report extremely high rates of depressive symptomatology (Quint et al., 1997), this finding suggests that a perceived emphasis on school performance goals might be especially problematic for teenage mothers’ school engagement.

As a first study in this area, we took a broad outlook on academic motivation and engagement, in contrast to many important studies that have focused on specific domains of learning, such as math and science (Wigfield & Eccles, 2000). Future research can refine the findings we report here by examining the domain-specificity of these associations, and identifying other important elements of the perceived school environment. Future research

should also continue to investigate how various interactive experiences of schooling and motherhood affect adolescents' motivations to pursue education and facilitate young mothers' academic successes. For example, we need to better understand how teenage mothers balance the demands of parenting and academic roles. When these dual roles are in conflict, what coping strategies do they enact, and what factors may influence their abilities to optimally cope with multiple demands? How can schools and teachers play a positive role? The transition to motherhood may affect students differently depending on prior experiences with and beliefs about school (e.g., Leadbeater, 1996). Unfortunately, the present study does not have data about adolescents' academic beliefs prior to pregnancy and giving birth, nor do we have a control group of non-parenting teenage girls.

This study is among the first to extend the study of the perceived school context to teenage mothers' academic engagement. However, our results must be interpreted in light of several important limitations. The sample size was small and the teenage mothers who participated in this study might not be representative of young mothers in other locales. In addition, although we controlled for several important observable characteristics, we are unable to draw firm conclusions about causal relationships given the non-experimental design of the study and the possibility of omitted variables bias. Similarly, given that the predictor and criterion variables were self-reported and collected at the same time, the possibility of bi-directionality in these associations exists. For example, students who feel bad about school may perceive that their teachers care about them less.

It is important to reiterate that this study measured student *perceptions* of school experiences. This is in line with arguments that it is necessary to measure how students' "make meaning" out of classroom experiences to predict cognitions, affect, and behavior (e.g., Ames,

1992, Wentzel, 2002). In this view, individuals construct beliefs about themselves and the social contexts in which they spend their time, and these beliefs are the most proximal predictors of later behavior. Our findings suggest that one useful avenue for future work would be to collect information about the specific interactions with teachers that contribute to teenage mothers' perceptions of teacher support.

Finally, research on the school-related factors that influence teenage mothers' decisions to continue their education through and beyond high school is needed. A pattern of disengagement from school may portend withdrawal from educational pursuits. Curtailed educational trajectories can affect future economic stability for teenage mothers and their children. If we are to ensure optimal academic outcomes for teenage mothers who may be at high risk of future poverty and unemployment, understanding the role of the school environment is vital to creating effective, equitable, and motivating academic experiences.

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Table 1

Factor Loadings for Outcome Measures

	Positive Affect	Negative Affect	School Alienation
Most of the time, being in my high school puts me in a good mood.	.87		
I enjoy my high school.	.86		
I often feel excited and enthusiastic at my high school.	.82		
I am happier when I am at my high school than when I am not at school.	.80		
I like being in my high school.	.74		
I often feel frustrated when I do schoolwork.		.78	
I often don't feel good about myself when I am in school.		.69	
I am often angry when I am in my high school.		.64	
My high school often makes me feel bad.		.60	
I feel tense and anxious much of the time I'm in my high school.		.57	
I feel like I don't have many friends at my high school.			.87
I often feel lonely at my high school.			.80
I feel like people at my high school don't really know me.			.78
I feel left out from other kids in my high school.			.72
Cronbach's Alpha	.90	.74	.79

Table 2
Factor Loadings for Measures of Teens' Perceptions of School Environment

	Teacher Support	Performance Goals	Mastery Goals
How many of your high school teachers respect your opinion?	.86		
How many of your high school teachers can you count on for help when you need it?	.85		
How many of your high school teachers really understand how you feel about things?	.76		
How many of your high school teachers try to help you when you are sad or upset?	.70		
Our high school lets us know which students get the highest scores on a test.		.80	
Our high school tells us how we compare to other students.		.76	
My high school makes it obvious when certain students were not doing well in school.		.70	
Our high school points out those students who get good grades as an example to all of us.		.69	
Teachers in my high school want me to understand my work, not just memorize it.			.81
Teachers in my high school really want me to enjoy learning new things.			.78
Teachers in my high school give me time to really explore and understand new ideas.			.57
Teachers in my high school think mistakes are okay, as long as I am learning.			.41
Cronbach's Alpha	.86	.74	.71

Table 3
Correlations, Means, Standard Deviations, and Ranges

	1	2	3	4	5	6	7	8	9	10
Demographics										
1. Teen age	---									
2. Teen has >1 child W3	.27 *	---								
Motivation										
3. High school grades	.01	-.17	---							
Perceived School Environment										
4. Teacher Support	-.04	-.14	.34 *	---						
5. Performance Goals	-.07	.08	.01	-.08	---					
6. Mastery Goals	.00	-.13	.21	.59 *	-.04	---				
Mediator										
7. Depressive symptoms	.09	.07	-.16	-.24	.12	-.24	---			
Dependent Variables										
8. Positive Affect	.06	-.17	.31 *	.63 *	-.08	.57 *	-.35 *	---		
9. Negative Affect	.00	-.06	-.44 *	-.59 *	.32 *	-.44 *	.37 *	-.53 *	---	
10. School Alienation	.06	-.01	-.26 *	-.44 *	.28 *	-.49 *	.42 *	-.48 *	.70 *	---
<i>Note: * p < .05.</i>										
Mean	19.22	.52	4.66	3.19	3.13	3.87	3.70	3.06	2.10	1.91
Standard Deviation	.90	---	1.77	.96	1.07	.82	3.36	1.19	.82	.98
Group Min	16.00	.00	1.00	1.25	1.00	1.50	.00	1.00	1.00	1.00
Group Max	20.00	1.00	9.00	5.00	5.00	5.00	12.00	5.00	4.00	4.75

Table 4
Estimated Coefficients of OLS Regression Models for Positive Affect

	Model 1		Model 2		Model 3		Model 4		Model 5					
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>				
Demographics														
Teen age	.13	.13	.15	.13	.17	.13	.16	.12	.14	.13				
Teen has >1 child	-.21	.24	-.21	.24	-.28	.24	-.23	.22	-.18	.24				
Motivation														
High school grades	.06	.07	.05	.07	.03	.07	.04	.06	.06	.07				
Perceived school environment														
Teacher support	.51	**	.15	.48	**	.15	.32	.20	.38	*	.15	.47	**	.15
Performance goals	-.02		.11	.01		.11	.05	.11	.33	*	.15	.00		.11
Mastery goals	.43	*	.17	.38	*	.17	.34	*	.18	.42	*	.16	.54	.27
Mediator/Moderator														
Depressive symptoms	---	---	-.06	.04	-.22	.13	.20	.10	.04	.15				
Depression*teacher support	---	---	---	---	.05	.04	---	---	---	---				
Depression*performance goals	---	---	---	---	---	---	-.08	**	.03	---	---			
Depression*mastery goals	---	---	---	---	---	---	---	---	---	-.03	.04			
Constant	-2.75	2.62	-2.75	2.57	-2.30	2.59	-3.63	2.45	-3.24	2.66				
Model F-test	8.55	***	8.11	***	7.35	***	8.95	***	7.10	***				
Adj. R-Square	.41		.44		.45		.50		.44					

Note: * $p < .10$ ** $p < .05$ *** $p < .01$

Table 5
Estimated Coefficients of OLS Regression Models for Negative Affect

	Model 1		Model 2		Model 3		Model 4		Model 5	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Demographics										
Teen age	.07	.08	.06	.08	.04	.08	.05	.08	.05	.08
Teen has >1 child	-.39 *	.15	-.39 *	.15	-.34 *	.15	-.38 *	.15	-.34 *	.15
Motivation										
High school grades	-.15 **	.04	-.14 **	.04	-.12 **	.04	-.14 **	.04	-.13 **	.04
Perceived school environment										
Teacher support	-.33 **	.10	-.31 **	.10	-.20	.13	-.28 **	.10	-.33 **	.10
Performance goals	.23 **	.07	.22 **	.07	.18 *	.07	.12	.10	.21 **	.07
Mastery goals	-.17	.11	-.14	.11	-.10	.11	-.15	.11	.03	.17
Mediator/Moderator										
Depressive symptoms	---		.04	.02	.16	.08	-.04	.07	.16	.09
Depression*teacher support	---		---		-.04	.03	---		---	
Depression*performance goals	---		---		---		.03	.02	---	
Depression*mastery goals	---		---		---		---		-.03	.02
Constant	2.56	1.66	2.56	1.62	2.22	1.62	2.82	1.63	2.03	1.66
Model F-test	11.80 ***		11.15 ***		10.20 ***		10.05 ***		10.06 ***	
Adj. R-Square	.51		.53		.54		.54		.54	

Note: * $p < .10$ ** $p < .05$ *** $p < .01$

Table 6
Estimated Coefficients of OLS Regression Models for School Alienation

	Model 1		Model 2		Model 3		Model 4		Model 5					
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>				
Demographics														
Teen age	.13	.12	.10	.12	.09	.11	.10	.11	.09	.12				
Teen has >1 child	-.31	.22	-.31	.21	-.22	.21	-.29	.20	-.24	.21				
Motivation														
High school grades	-.09	.06	-.07	.06	-.04	.06	-.07	.06	-.06	.06				
Perceived school environment														
Teacher support	-.17	.14	-.16	.13	.05	.17	-.07	.13	-.17	.13				
Performance goals	.25	*	.10	.22	*	.10	.16	.10	-.01	.14	.20	*	.09	
Mastery goals	-.44	**	.16	-.39	*	.15	-.33	*	.15	-.41	**	.15	-.12	.24
Mediator/Moderator														
Depressive symptoms	---		.08	*	.03	.27	*	.12	-.11	.09	.26	*	.13	
Depression*teacher support	---		---		---	-.06		.03	---	---	---			
Depression*performance goals	---		---		---	---		.06	*	.03	---			
Depression*mastery goals	---		---		---	---		---		---	-.05		.03	
Constant	1.40	2.37	1.40	2.27	.86	2.26	2.02	2.22	.55	2.32				
Model F-test	5.70	***	6.16	***	5.93	***	6.34	***	5.78	***				
Adj. R-Square	.31		.36		.39		.40		.38					

Note: * $p < .10$ ** $p < .05$ *** $p < .01$