Family Functioning and School Success in At-Risk, Inner-City Adolescents

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The relation between family functioning and school success was examined in 211 at-risk, African American, inner-city adolescents attending middle school (grades 6–8). Interviews with adolescents and caregivers yielded data on family cohesion, parental monitoring, and school engagement; school records provided data on grade point average. Results showed that both family cohesion and parental monitoring predicted school engagement, but neither family characteristic predicted GPA. Important gender differences also emerged. For boys only, the relation between family cohesion and school engagement was stronger when parental monitoring was high. For girls only, the effects of cohesion and monitoring on school engagement were additive: girls with both high family cohesion and high parental monitoring were most likely to be engaged in school. These findings extend the research base on family protective factors for antisocial behavior in young adolescents. Implications for future examination of family process characteristics in high-risk adolescents are discussed.

KEY WORDS: family process; school success; at-risk adolescents; gender differences.

INTRODUCTION

The inner-city environment often includes multiple risks to healthy adolescent development. Poverty, disorderly and stressful environments, poor health care, deteriorated schools and other institutional supports, and high levels of crime characterize many inner-city neighborhoods (Tolan et al., 1997b). Furthermore, there are typically few resources to counteract these threats. Recent studies have focused on factors that strengthen personal resources and serve to protect adolescents living in the inner-city from such risks (Finn and Rock, 1997; Florsheim et al., 1998; Vazsonyi and Pickering, 2003). School success has emerged as one such factor (Maddox and Prinz, 2003; Roeser et al., 1998). The term “educational resilience” has been adopted to describe students who manage to be engaged in school and perform well despite facing the same risk conditions that raise the incidence of school failure for their peers (Wang and Gordon, 1994). Much current research is concerned with ways to boost educational resilience among the most at-risk adolescents.
School success predicts many long-term positive outcomes such as continuing higher education, better job possibilities, more positive self-concept, less adult psychopathology, and lower likelihood of later unemployment (Dryfoos, 1990). Support for its protective value comes from findings that link school failure with many risk behaviors and negative outcomes: substance abuse (Newcomb and Bentler, 1998), delinquency (Gorman-Smith et al., 1996), emotional/behavioral problems (Roeser et al., 1998), and early sexual activity (Brooks-Gunn and Furstenberg, 1989). School success has typically been measured by general academic achievement, usually operationalized as students’ grades.

Following from findings on its protective value, recent research has focused on factors that might predict school success (Sirin and Rogers-Sirin, 2005; Taylor and Lopez, 2005). Findings suggest that family process variables are related to school success from as early as kindergarten (Hill and Craft, 2003; Taylor et al., 2004). Family process variables that have been predictive include parental routine (Taylor and Lopez, 2005), maternal control (De Bruyn et al., 2003), and the parent-adolescent relationship (Sirin and Rogers-Sirin, 2004). These findings paint an overall picture of authoritative parenting style, characterized by high warmth and consistent parental monitoring (Baumrind, 1991), as the optimal environment for school success in children and adolescents. Moreover, a supportive family milieu that encourages and facilitates coping efforts has been identified as one of the hallmarks of resilient children and adolescents (Garmezy, 1985).

Two of the most powerful family predictors are family cohesion and parental monitoring. Family cohesion is defined as the emotional bond that family members have toward one another. Parental monitoring is defined as the extent to which parents structure the child’s home, school, and community environments and track the child’s behavior in those environments (Dishion and McMahon, 1998). These variables have predicted student achievement, perceived competence, sense of relatedness to peers, academic effort, and interest in school in inner-city African American families (Connell et al., 1995; Seidman et al., 1995).

Research has recently gone a step further to investigate variables that might mediate the link between family process and school success. The main focus of this line of work has been on school engagement, defined broadly as the psychological and emotional investment students make to school. School engagement has been operationalized variously as: the willingness to devote time and energy to completing assignments and working for grades (Steinberg, 1997), the sense of belonging to the school community (Wentzel, 1997), and the degree to which students feel bonded to teachers (Steinberg et al., 1992a). Three important findings have emerged from this work. First family routine (providing a structured and organized environment for the adolescent) has been positively linked to school engagement (Taylor et al., 2004). Second, school engagement has been positively linked to school achievement, even when controlling for gender, grade level, cognitive function, and maternal education (Fredricks et al., 2004; Sirin and Rogers-Sirin, 2005). Third, school engagement has been shown to mediate the positive relation between family process and school performance (De Bruyn et al., 2003; Taylor and Lopez, 2005). Samples have included at-risk adolescents and middle-class adolescents in the U.S. as well as Europe.

School engagement may be an especially important factor for at-risk youth who are noted to be more difficult to engage in school (Wehlage and Smith, 1992). Indeed, greater school engagement has been observed for resilient adolescents (Connell et al., 1995; Finn and Rock, 1997). The protective effects of engagement behaviors have been observed even when socio-demographic factors (e.g., family structure, parents’ education, income) and individual factors (e.g., self-esteem, locus of control) were taken into account. School engagement has also been found to predict lower levels of problem behaviors (e.g., delinquency, substance abuse, emotional and behavioral problems) that are associated with decreased school performance and increased incidence of school drop-out (Connell et al., 1995).

Emerging findings also suggest gender may play a role in the relation between family process and school success. Girls appear to have a general advantage in overall school success, across African-American and other ethnicities, as well as both disadvantaged and non-disadvantaged adolescents (De Bruyn et al., 2003; Osborne, 1997). However, findings on the role of gender in the relation between family process and school success are not as clear. For girls, both positive and negative correlations between family process variables and school success have been found (Clark, 1991; Weist et al., 1995). When positive effects have been found, they have been stronger for girls in some studies (Clark, 1991; Linver and Silverberg, 1997), and stronger for boys in others (Weist et al., 1995). Still further findings suggest relatively few gender differences (Connell et al., 1995).

Recognizing that comparisons between girls and boys have focused on mean level scores for school success, more recent studies employing structure equation models have examined gender interactions in the multivariate path from family process to school success (De Bruyn et al., 2003; Sirin and Rogers-Sirin, 2005). This work has yet to identify any gender interactions among

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non-disadvantaged African American and White adolescents. No similar research has been done with at-risk youth.

To date very few studies have looked at the complex interaction among these critical developmental variables, and none have done so for high-risk populations. The study aimed to extend what is known about how family factors work to protect at-risk adolescents against antisocial outcomes by promoting key prosocial outcomes such as school success. The study hypothesized that (a) family cohesion and parental monitoring would be positively related to both school engagement and school performance, (b) school engagement would mediate the relations between both family process variables and school performance, and (c) gender differences would emerge within the relations among family process and school success. The third hypothesis was more exploratory in nature due to the lack of consensus from prior research findings on gender.

METHODS

Sample Demographics

The study involved 211 adolescents living in an inner-city area of a major Northeastern city. Their mean age was 12.5 years, and 44% were boys (56% girls). Almost all of the families in the sample were African American (97%). The remaining families were Hispanic or Caribbean American. The participants were enrolled in middle school (grades 6–8) at the time of assessment. Most families were headed by a single, biological parent (51%) or both parents (27%); 22% had other care taking arrangements, including having other adult kin in the home.

Screening and Recruitment

The study sample was selected over a 2-year period from all youths who enrolled in a community-based youth enrichment program (CYP) covering four local middle schools. A 34-item, self-report risk factor screening measure was completed by every adolescent. The measure assessed risk factors for drug use and antisocial behavior in four areas: adolescent drug use behavior and attitudes, and delinquent behavior; peer drug use behavior and attitudes; family drug use history and attitudes, and history of police involvement; and adolescent school attendance, performance, and behavior. An applicant was considered to be high-risk under one of two conditions: (a) endorsement of one or more indicated risk items (e.g., chronic school truancy, mostly failing grades, previous marijuana use, frequent alcohol or marijuana use by close friends, history of major delinquent acts [e.g., theft]); (b) endorsement of three or more selective risk items (e.g., intermittent school truancy, previous cigarette and alcohol use, favorable attitude toward alcohol and marijuana use held by adolescent and/or close friends, history of parental drug use or criminal involvement, history of minor delinquent acts [e.g., property damage]).

Instruments

School Performance

Official school records from the central district offices were obtained at the end of every school semester. The grade point averages (GPA) were calculated from the average of all grades reported for each quarterly marking period using the formula: \[ A = 4, B = 3, C = 2, D = 1, F = 0. \]

School Engagement

A school bonding measure was taken from Steinberg and colleagues (Fletcher et al., 1995; Steinberg et al., 1994), who used it to examine the relation between school involvement and delinquent behavior in a national sample of high school students. Sample items include, “My teachers care about how I’m doing” and, “Most of my classes are boring.” The scale contains 11 items (\( \alpha = .73 \)) rated on a four-point scale ranging from “Strongly agree” to “Strongly disagree” and includes subscales for bonding to teachers and orientation to school.

Family Cohesion

Family cohesion was measured using the family relations scale (FRS, Tolan et al., 1997a), a 35-item scale developed for use in a longitudinal study of the dynamics of risk for the development of serious antisocial behavior among inner-city, minority adolescents (Gorman-Smith et al., 1996; Tolan et al., 1997a,b). On the FRS, family cohesion is measured as a latent construct derived from a linear combination of four subscales: emotional cohesion (six items; sample item: “Family members feel very close to each other”), communication (three items; sample item: “My family and I have the same views about being successful”), support (six items; sample item: “My family doesn’t let me be by myself”) and organization.
(six items; sample item: The children make the decisions in our family”). Participants rated how frequently each statement was true on a four-point scale (1: not at all true, 2: hardly ever true, 3: true a lot, and 4: almost always or always true).

Responses of the parent and the adolescent were combined using the average of parent and child responses to each item. These item scores were then averaged for the scale to derive scale scores. Internal consistency coefficients for each scale have been reported as follows: cohesion ($\alpha = .72$); support ($\alpha = .65$); organization ($\alpha = .66$); and communication ($\alpha = .54$) (Gorman-Smith et al., 1996; Gorman-Smith and Tolan, 1998). The FRS has been used in studies of the relations among family relationship characteristics and participation in violent and non-violent delinquent activities in young, minority, inner-city adolescents (Gorman-Smith et al., 1996; Tolan et al., 1997a,b).

**Parental Monitoring**

Parenting practices were measured using the parenting practices questionnaire (PPQ, Gorman-Smith et al., 1996), which was designed to measure four parenting practices: (a) positive parenting, (b) discipline effectiveness, (c) avoidance of discipline, and (d) extent of parental involvement in the child’s life. These constructs have been used to measure monitoring and discipline practices in several studies (e.g., Dishion and McMahon, 1998). Both parental and child reports were obtained for positive parenting (e.g., giving praise, doing special activities) and extent of involvement (e.g., frequency of discussions, doing general activities together), and a linear combination of these scales was created. This formed a latent factor that was labeled “monitoring.” In response to statements regarding the frequency of engaging in a particular behavior, participants indicated their response on a five-point scale (1: never, 2: hardly ever, 3: sometimes, 4: usually, 5: always). In response to statements regarding latest occurrence of a particular behavior, participants responded using a six-point scale (1: don’t know, 2: more than 1 month ago, 3: within the last month, 4: within the last week, 5: yesterday/today and 6: never). In recent studies investigating the relation of these variables to participation in violent and non-violent and delinquent activities and exposure to community violence in a population of African American and Latino urban middle school students, alpha coefficients for each of the subscales ranged from .68–.81 (Gorman-Smith and Tolan, 1998; Gorman-Smith et al., 1996; note that coefficients for individual subscales were not reported).

**Procedure**

After obtaining consent from adolescents and parents to participate in a study of risk-taking behavior, a risk screen was administered (either in individual or group format) by a trained assessor for eligible adolescents and their families who consented to participate in the study. Assessment batteries (approximately 1.5 h in length) were administered in the location most convenient for the participants, almost always in their homes or at the clinic office. Adolescents and caregivers (one per family) were interviewed separately. Instruments were typically read aloud by assessors, although some self-report scales were completed silently if requested by the participant. To encourage completion of assessments, adolescents and caregivers were given $30 per interview ($15 per participant).

**RESULTS**

**Plan of Analysis**

Three analyses were run using family cohesion (FC) and parental monitoring (PM) as independent variables, and school performance (SP) and school engagement (SE) as dependent variables. First, simultaneous regression was run to test for main effects. Next, hierarchical analyses were run to probe interactions detected in the first analysis, using Aiken and West’s (1991) method for continuous variables. Third, another set of hierarchical analyses was run to test for gender interactions using Aiken and West’s (1991) method for categorical variables.

**Regression: Main Effects**

Regression analysis revealed that both family cohesion and parental monitoring positively predicted school engagement ($r_{[211]} = .29, p < .01$; $r_{[209]} = .18, p < .01$), but neither variable predicted school performance. A subsequent hierarchical regression involving an interaction term (FC × PM) identified a significant interaction between the two family process variables in predicting school engagement ($\beta = .143, \Delta R^2 = .04, p < .05$).

**Hierarchical Regression 1: Interactions among Main Effects**

To probe the interaction, parental monitoring was designated as the moderating variable of the interaction. Following the recommendations of Aiken and West (1991) for continuous variables, a conditional variable
representing a high level of parental monitoring was created based on a value +1 SD above the mean for the variable parental monitoring (PM\textsubscript{High}). Another conditional variable representing a low level of parental monitoring (PM\textsubscript{Low}) was created by subtracting the value of 1 SD from each value of parental monitoring.

Next, conditional interaction terms that combined family cohesions with each of the conditional variables for parental monitoring (FC \times PM\textsubscript{High} and FC \times PM\textsubscript{Low}) were computed. Using these new conditional terms, two additional hierarchical regressions were run. In the first, FC and PM\textsubscript{High} were entered, and the conditional interaction term, FC \times PM\textsubscript{High}, was entered in the second step. In the second equation, FC and PM\textsubscript{Low} were entered first, and the conditional interaction term, FC \times PM\textsubscript{Low}, was entered next. In high monitoring families, family cohesion was a significant and positive predictor of school engagement ($B = .32, p < .001; \Delta R^2 = .09, p < .01$), whereas in low monitoring families, this relation was not significant ($B = .07, p < .05; \Delta R^2 = \text{ns}$). These results demonstrate that parental monitoring moderated the relations between family cohesion and school engagement.

As a further probe of these relations, a graph of the regression lines for parental monitoring moderating family cohesion was drawn (see Fig. 1). The regression line for high monitoring families shows a steep slope, with school engagement increasing as family cohesion increases. By contrast, in low monitoring families, the slope representing school engagement declines slightly as family cohesion increases. The graph demonstrates that the positive link between family cohesion and school engagement was stronger for adolescents in homes with high parental monitoring.

Hierarchical Regression 2: Testing for Gender Effects

Another hierarchical multiple regression was conducted to examine the impact of gender (GEN) on these relations. Gender was entered to isolate and control for any main effects of this variable. In the second equation, only family cohesion was added because it was the only family variable that had a main effect in the previous regression. In the third equation, the interaction of family cohesion and gender was entered. Finally, the three-way interaction of gender, family cohesion, and parental monitoring was introduced. Gender did not have a significant main effect ($B = .04, p > .05$), and the interaction of family cohesion and gender was not significant ($B = -.10, p > .05$). However, the three-way interaction was significant ($B = .08, p < .01; \Delta R^2 = .03, p < .01$).

In order to probe the three-way interaction, the sample was divided along gender lines. Variables were centered within each gender group. Following Aiken and
West’s (1991) methods for probing interactions among categorical variables, a hierarchical regression was conducted within each group, wherein each family variable, family cohesion and parental monitoring, was entered, followed by the interaction term. Each family variable was centered according to the range of values within that group, that is, variables representing girls’ cohesion, boys’ cohesion, girls’ monitoring and boys’ monitoring were created. The results of these analyses showed that family cohesion and parental monitoring worked in conjunction to predict school engagement among boys but not among girls. There was a main effect of family cohesion ($B = .254, p < .001$) and a significant interaction effect for boys ($B = .252, p < .001$). However, for girls, the main effects of family cohesion, parental monitoring, and the product of the two were not significant. Moreover, the explained variance was significantly increased by the interaction of the two family variables among the boys. In fact, this combination of variables explained over 26% of the variance in school engagement among boys. These results are shown in Table 1, and demonstrate that higher parental monitoring significantly increased the positive relation between family cohesion and school engagement for boys, but not for girls.

This three-way interaction was further probed using Aiken and West’s (1991) methods for continuous variables described earlier. Boys and girls samples were divided at the median, and school engagement was regressed onto family cohesion to derive four regression equations, one each for boys and girls from “high” monitoring families (above the median, girls and boys, respectively, in monitoring), and one each for boys and girls from “low” monitoring families (below the median, girls and boys, respectively, in monitoring). Then, using the value of family cohesion in each sub-sample at ±1 SD and also at the mean, the regression lines were graphed as shown in Fig. 2.

The figure demonstrates that, whereas parental monitoring moderated the relation between family cohesion and school engagement in boys, the effects of parental monitoring and family cohesion on school engagement were additive for girls, that is, girls with both high family cohesion and high parental monitoring were most likely to be engaged in school.

### DISCUSSION

This study adds to the knowledge base on how family process can function as a protective factor in at-risk adolescents. The results suggest that, within at-risk African American families, family cohesion has a beneficial effect on school engagement, especially in the context of good parental monitoring practices. When parental monitoring was relatively high, or even moderate, adolescents from more cohesive families were more engaged in school. However, when parents did not monitor their adolescent, family cohesion had a neutral or even negative effect on school engagement. The findings support the work of Steinberg and his colleagues who have linked parenting style to school success (e.g., Steinberg et al., 1992b). Adolescents from cohesive families that were also effective at monitoring were more engaged in school.

Within these main findings, some complexities emerged. Family cohesion affected school engagement of boys, but only in families that were good monitors. In families with moderate or low monitoring, school engagement was lower, regardless of the level of family cohesion. Parental monitoring and family cohesion each contributed to the likelihood that girls would be engaged in school, and their influence was additive; girls from cohesive homes with high parental monitoring were most likely to be engaged in school. The results clearly indicate that monitoring and cohesion together are more predictive of school engagement than either of the two variables separately. Prior research has linked these two variables separately to school success (Connell et al., 1995; Seidman et al., 1995). The current findings inform the growing research base by suggesting that family process variables might interact to affect school success, and that gender differences may be present in these interactions (Pittman and Chase-Lansdale, 2001; Richards et al., 2004; Sirin and Rogers-Sirin, 2005). For girls, family process elements seem to be independently important, whereas for boys, these elements appear to interact to promote protective effects. These findings are in keeping with the complex nature of the inner-city risk environment.

### Table 1. Hierarchical Regression: Gender, Family Cohesion, and Parental Monitoring as Predictors of School Engagement in Families with Boys versus Girls ($N = 209$)

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
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</thead>
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<tr>
<td><strong>Families with boys</strong></td>
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<tr>
<td>Step 1</td>
<td></td>
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<tr>
<td>Family cohesion (FCboys)</td>
<td>.254</td>
<td>.073</td>
<td>.352**</td>
<td>—</td>
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<tr>
<td>Parental monitoring (PMboys)</td>
<td>.029</td>
<td>.060</td>
<td>.047</td>
<td>.14</td>
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<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FCboys $\times$ PMboys</td>
<td>.252</td>
<td>.064</td>
<td>.385**</td>
<td>.12**</td>
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<tr>
<td><strong>Families with girls</strong></td>
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<td>Step 1</td>
<td></td>
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<tr>
<td>Family cohesion (FCgirls)</td>
<td>.124</td>
<td>.077</td>
<td>.174</td>
<td>—</td>
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<tr>
<td>Parental monitoring (PMgirls)</td>
<td>.064</td>
<td>.060</td>
<td>.115</td>
<td>.06*</td>
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<tr>
<td>Step 2</td>
<td></td>
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<tr>
<td>FCgirls $\times$ PMgirls</td>
<td>.086</td>
<td>.074</td>
<td>.109</td>
<td>.01</td>
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</table>

*p < .05.

**p < .01.
For families living in high-risk environments, finding the optimal balance between setting limits and supporting autonomy might be quite different when parenting boys versus girls. Although no studies were identified that examined interaction effects among family process variables in adolescent boys specifically, some literature exists for adolescent girls. Because this literature is limited, any interpretation of the gender difference found in the current study is necessarily speculative. Existing studies suggest that middle class African American parents place a stronger emphasis on limit setting and monitoring of young adolescent girls than older girls (Smetana and Chuang, 2001). Other recent work suggests that effective monitoring combined with cohesive family relations is protective of girls in high risk contexts (Pittman and Chase-Lansdale, 2001). However, among economically disadvantaged African American families, parents of daughters have greater difficulty establishing this balance (Mason et al., 1997). The exact nature of this difficulty is not known. More research is needed to better understand the relations between family functioning and both positive and negative outcomes of at-risk, female, African American adolescents living in the inner-city.

The instruments used in the study were well-validated, and this was a strength of the study. Many have questioned the validity of measures of family functioning used with at-risk samples because these adolescents are under-represented in standardization research (McLoyd, 1998; Tolan et al., 1997a,b). Both of the family process measures used in this study have been previously utilized with at-risk, minority families. Moreover, the family cohesion measure has been painstakingly devised using existing measures and adapting them to fit the population being studied (Tolan et al., 1997a,b; Gorman-Smith et al., 1996). Finally, both measures were completed by multiple raters, and the aggregation of scores was carefully undertaken (Dakof, 1996).

It was surprising that family variables predicted school engagement but not school performance. As a result, we could not test the second main hypothesis of the study, namely, whether school engagement mediated the relation between family functioning and school performance. In much of the recent literature, family factors do significantly predict grades or standardized test scores (Eccles et al., 1998; Marchant et al., 2001). One explanation is that scores on both the family cohesion measure and the parental monitoring measure were concentrated in the upper end of their respective scales. A ceiling effect such as this can decrease the power to find relations among variables, because it leads to less variance in the scores than what would be expected. It is not clear why this clustering exists; however, this pattern has been found in other studies, including ones that have used existing measures of family cohesion (Mason et al., 1997; Wentzel and
McNamara, 1999). It is also possible that cultural factors such as the high valuing of family and the communalistic orientation that is common in African-American communities (Taylor, 1996; Wilson, 1995) may have created a tendency to focus on and report more positive family impressions. As a third possibility, because study participants faced a high level of risk which is not usually conducive to optimal parenting (McLoyd, 1990), they may have been motivated to inflate their scores by reporting what they would like to be able to do or have rather than what they actually have.

This study adds to the literature on family factors that impact school success for African American adolescents living in high-risk neighborhoods. The primary study findings are that parental monitoring and family cohesion work together to promote school engagement, and that these family processes play a different protective role for boys versus girls. These family factors have been found to be protective against various compromising behaviors in at-risk African American adolescents (e.g., delinquency, antisocial behavior), but the current findings suggest they can also protect against school disengagement in these youth, especially boys. These findings are important in light of the growing research base on the positive effects of school engagement and its role as a protective factor (Connell et al., 1995; Finn and Rock, 1997; Fredricks et al., 2004; Maddox and Prinz, 2003). The study also provides evidence that although family cohesion and parental monitoring are important for both boys and girls, the specific impact of these processes on school success may be gender specific. This adds new complexity to the emerging research base on gender differences in the role of family relations in predicting school success (De Bruyn et al., 2003; Sirin and Rogers-Sirin, 2005). Gender effects such as these have not been reported in prior studies, and our findings point to the importance of continued research on gender differences in key protective processes for inner-city adolescents. Overall, this study underscores the benefits of examining how family-level and individual-level developmental processes interact to influence prosocial achievement in high risk youth.

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