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School Adjustment and the Academic Success of Rural African American Early Adolescents in the Deep South

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This study examined the relationship between end-of-year grades and the academic, behavioral, and social characteristics of rural African American youth. Participants included 392 7th and 8th grade students from 2 rural middle schools in the south. Participants were African American and were from 2 communities that have child poverty rates exceeding 50% for public school students. Girls were more likely to have positive characteristics than boys. Academic, behavioral, and social difficulties were linked to low end-of-year grades, and positive characteristics were linked to high grades. Implications for supporting low-achieving African American students from low-resource communities are discussed.

Educational difficulties are often pronounced in rural school districts that serve high proportions of minority youth from impoverished backgrounds (Johnson & Strange, 2005; Khattri, Riley, & Kane, 1997; Save the Children, 2002). In response to the special needs of low-income rural districts, the U.S. Department of Education established the Rural and Low-Income School Program (RLISP). To qualify for this program a district must be designated locale code 6, 7, or 8, and at least 20% of the school-age population must be from families living below the federal poverty level. The RLISP serves more than 2.5 million students, over 80% of RLISP eligible schools are located in the south, and about 500,000 students in the RLISP are African American youth who live in southern states (Farmer et al., 2006). Although they make up a substantial portion of the RLISP student population, few studies have focused on the academic performance and related school adjustment factors of rural African American youth from low-resource communities. The extant data suggest that there is a significant need for more research with this population.

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In a randomly selected sample of RLISP schools, 30% failed to make adequate yearly progress on No Child Left Behind (NCLB) criteria (Farmer et al., 2006). In over 40% of the failing schools, African American and impoverished youth did not pass end-of-grade standardized tests. These findings are consistent with other studies that suggest impoverished rural African American youth may be at risk for achievement problems, school failure, school dropout, and low educational and occupational attainment (Farmer et al., 2004; Jeffries, 1993; Kao, & Tienda, 1998; Khattri et al., 1997; Kim, Brody, & Murry, 2003; McLoyd, 1990, 1998; Smith, Beaulieu, & Israel, 1992; Valdez, 2000). While this work indicates that rural African American youth from impoverished communities are at increased risk for academic difficulties, very little is known about school adjustment variables that distinguish between low- and high-achieving students from such backgrounds. Information along these lines may help clarify factors that promote academic success in this population and may support the development of interventions that enhance the school adjustment and academic achievement of rural low-income African American students. Accordingly, the purpose of this study was to explore school adjustments factors that differentiate low- and high-achieving rural African American students from two low-income communities in a southern state.

Building from a developmental science perspective of competence and risk, we were interested in examining whether teacher, peer, and parent assessments of rural African American students' academic, behavioral, and social adjustment in school were related to their end-of-year school

grades. According to the developmental science framework, youth develop as an integrated whole rather than as discrete components (i.e., physical, cognitive, behavioral, social). This means that rather than having a singular influence, various developmental factors (e.g., academic, behavioral, social) operate together as a correlated system and impact each other as they contribute to patterns of adjustment (Cairns, 2000; Magnusson & Cairns, 1996; Roeser, Eccles, & Sameroff, 2000). Consistent with this view, adolescents who go on to experience poor adult outcomes tend to have adjustment difficulties across multiple domains (Bergman & Magnusson, 1997; Cicchetti & Rogosch, 2002), and adolescents from disadvantaged backgrounds who have positive adult outcomes tend to demonstrate multiple competencies (Luthar, Cicchetti, & Becker, 2000; Masten & Coatsworth, 1998; Roeser & Peck, 2003).

For example, youth who are viewed by teachers as academically competent are more likely to get along well with peers, engage in prosocial behavior and productive classroom activities, and associate with peers who support academic achievement (Cairns & Cairns, 1994; Wentzel, Barry, & Caldwell, 2004). In contrast, youth who have academic difficulties are more likely to be aggressive and disruptive, to be unengaged in class, and to experience a range of social difficulties (Farmer et al., 2004; Khattri et al., 1997; Kindermann, 1993). Further, poor educational outcomes such as school failure, school dropout, and reduced rates of postsecondary education have been linked to correlated packages of academic, behavioral, and social risks in early adolescence (Cairns, Cairns, & Neckerman, 1989; Farmer et al., 2003). Collectively, such findings suggest that behavioral and social competence may support students' academic achievement, while behavioral and social difficulties may contribute to poor academic performance.

Relatively little research has examined the relationships among academic, behavioral, and social factors in rural African American youth from impoverished backgrounds. Such work is especially needed during early adolescence because this is a period when the development of youth is highly malleable and sensitive to both positive and negative influences (Eccles, 1998; Huber & Garten, 1993). Also, boys and girls tend to have different patterns of adjustment during adolescence (Rojewski, Wicklein, & Schell, 1995). There is a need to examine whether there are gender differences in the relationship between school adjustment and academic performance in rural African American youth. If this is the case, it would suggest a need for gender-specific interventions to support the academic engagement and achievement of this population.

Because individuals are viewed as developing as an integrated whole, the developmental science perspective implies the use of person-centered analyses to identify subsets of individuals who are similar to each other on key developmental dimensions (Bergman, 2000; Cairns & Rodkin, 1998; Magnusson, 2003). Such analyses are necessary because there may be nonlinear relationships between subtypes of individuals and developmental constructs of interest that are masked by traditional variable-oriented approaches (Cairns, 1986; Magnusson, 1988). To address this issue, the present study categorizes participants into high-, moderate-, and low-achieving subsets for both boys and girls.

During the current climate of NCLB, standardized tests have become a primary construct for assessing student achievement. While standardized scores may provide a good index of student achievement for the purposes of accountability (Hanushek & Raymond, 2005; Smith, 2005), other measures of achievement may be more directly linked to students' academic development and their subsequent educational outcomes (Becker & Luthar, 2002). For example, school grades and ratings of academic competence by teachers and peers tend to differentiate between successful educational outcomes (e.g., school attendance, participating in advanced courses, completing high school, and attending and completing postsecondary training and educational programs) and low educational attainment (e.g., not passing a grade level, not completing high school, not attending or completing postsecondary programs) (Cairns & Cairns, 1994; Feldhusen & Jarwan, 1995; Luthar & Ansary, 2005; Ripple & Luthar, 2000; Roeser & Peck, 2003; Smokowski, Mann, Reynolds, & Fraser, 2004; Zheng, Saunders, Shelley, & Whalen, 2002). In fact, recent studies suggest that school grades may yield a more complete picture of academic performance for racial and ethnic minorities (Hoffman & Lowitzki, 2005; Kao & Thompson, 2003). For the present study, we used end-of-year school grades to classify students as low, moderate, and high on academic achievement and we used teacher, peer, and parent assessments as indicators of students' academic competence.

By examining the relationship between end-of-year grades and other indices of school adjustment or competence (i.e., academic, behavioral, and social factors), we may be able to clarify factors that support or impede academic achievement. This is especially relevant for rural school districts that serve high percentages of low-achieving students and students from low-income backgrounds (Cadwallader et al., 2002). The goal of this investigation was to identify factors associated with academic success in rural African American middle school students from two high-poverty rural communities in a southern state. While such an analysis cannot indicate causality, it can provide insight into whether particular factors may be part of a constellation of variables that contribute to students' adjustment. Such information is necessary groundwork for longitudinal and experimental-control investigations that can more directly assess the impact of specific factors. Accordingly, the current study was exploratory and was guided by two general aims. The first aim was to explore possible gender differences in the relationship between school grades and school adjustment.

The second aim was to explore the degree to which high, moderate, and low end-of-year grades distinguish among rural African American students on measures of school adjustment. Information generated from this study may help to establish school-based interventions to support the academic achievement of rural African American youth from impoverished communities.

Method

As part of an ongoing longitudinal study of the developmental pathways of rural African American youth, this study involved a multimethod survey design. Teacher, peer, and parent reports were used to assess participants' adjustment within the academic, behavioral, and social domains. School record data were used to assess academic achievement.

Participants

This investigation took place in two rural counties in a southern state in the Deep South. Throughout the South, there are large pockets of rural communities that serve high concentrations of African American youth from impoverished backgrounds (Johnson & Strange, 2005; Murry & Brody, 1999; Save the Children, 2002). Traditionally, this has been an understudied population (Brody, Murry, Kim, & Brown, 2002; Cadwallader et al., 2002). Further, rural schools that serve high concentrations of impoverished and African American youth are less likely to make adequate yearly progress on NCLB criteria (Farmer et al., 2006). Accordingly, a primary goal of this study was to expand the knowledge base regarding the factors associated with the educational adjustment of youth from rural schools that serve very high concentrations of impoverished African American youth. The two participating communities in this study were selected as research sites because they reflect the challenges experienced by many rural school districts in the South. Over half of the public school students in these communities live in households below the national poverty level, and over 99% of public school students are African American (even though 30% of the population in these communities is European American). The two communities are identified as locale code 7 by the U.S. Census, and each has a population density of less than 17 persons per square mile.

Participants were recruited from all seventh- and eighth-grade classrooms in two middle schools. Parental consent and participant assent were obtained from 80% of the students in these schools. The sample comprised 392 students (250 girls and 142 boys), all of whom were African American. Ninety-six percent of participants received free or reduced-price lunch. This sample reflected the public school attendance of the two counties and the general population in each of the participating schools.

Procedures

Data were collected in the spring when teachers and peers had had ample time to become familiar with the characteristics of participants. Students completed peer-report measures during the group administration of the student survey. Before the administration of this survey, participants were assured their answers would be kept confidential, and they were asked to cover their responses. In addition, students were told they could stop participating at any time. During the survey, an administrator read the instructions and questions aloud while scanning the room for potential problems. Additional administrators provided mobile monitoring and assisted students as needed. During this time, teachers completed rating forms on participants. Students were given a school supply item for their participation, and teachers were paid for completing the rating forms. Grades were collected from school records at the end of the school year.

Teacher-Report Measures

Interpersonal Competence Scale-Teacher (ICS-T). Teachers completed the ICS-T for each participant in their class. The ICS-T is an 18-item questionnaire consisting of 7-point Likert scales (Cairns, Leung, Gest, & Cairns, 1995). The ICS-T yields composite scores on several subscales, and the following were used in the current investigation: aggression (α = .82; composed of "always argues," "gets in trouble," and "always fights"), popularity (α = .86; composed of "popular with boys," "popular with girls," and "lots of friends"), academic (α = .71; composed of "good at math" and "good at spelling"), affiliative (α = .73; composed of "always smiles" and "always friendly"), and internalizing (α = .68; composed of "always sad," "always worry," and "very shy"). Three-week test-retest reliability coefficients are moderately high (i.e., .80-.92), and median test-retest reliability across the factors is .81 for girls and .87 for boys. One-year coefficients are moderately strong (i.e., .40-.50) (Cairns, Leung, Gest, et al., 1995). The ICS-T has convergent validity with direct observation, student records (i.e., grades, discipline reports), and peer nomination measures (Cairns & Cairns, 1994; Cairns, Leung, Buchanan, & Cairns, 1995; Rodkin, Farmer, Pearl, & Van Acker, 2000). Composite factor scores are the unweighted average rating across items forming each subscale. Items are positively coded so that a higher score reflects increased levels of the measured construct. For example, a high score on the popularity factor indicates a high level of popularity while a low score on the aggressive factor indicates a low level of aggression.

Classroom-adjustment scale. This measure focused on students' classroom adaptation (Farmer, Estell, Bishop, O'Neal, & Cairns, 2003). Using a 7-point Likert scale similar to the ICS-T, teachers rated students on the following items: "lots of problems paying attention," "very hyperactive,"

"bullies peers, "manipulates friendships," and "is a class leader." As with the ICS-T, these ratings were positively coded such that a higher score on a classroom-adjustment item indicates a higher level on the designated attribute. Teacher ratings of "very hyperactive" and "lots of problems paying attention" were strongly correlated (r = .50, p < .001). The average teacher rating of these items was used as an index of teacher-reported instructional engagement (α = .67).

Proactive and reactive aggression. Both proactive and reactive aggression were the average of 3 items on a Likert scale that ranged from 1 (*applies often*) to 3 (*never applies*) and were adapted from Dodge and Coie (1987). Proactive aggression included the following items: "uses (or threatens to use) physical force in order to dominate other children," "threatens or bullies others in order to get his/her way," and "gets other children to gang up on a peer he/she does not like." Reactive aggression was comprised of the following items: "when this child has been teased or threatened, he/she gets angry easily and strikes back," "when a peer accidentally hurts this child (such as bumping into him/her), this child assumes that the peer meant to do it and then overreacts with anger and fighting," and "this child always claims that other children are to blame in a fight and feels they started the whole trouble." Ratings were reversed coded so that a higher score reflected more of each type of aggression.

Peer-Report Measures

Peer interpersonal assessments. Peer interpersonal assessments were used to determine classmates' perceptions of peers' social and behavioral characteristics. Students were asked to nominate, from free recall, up to three peers who best fit descriptors for 16 items. They were told that they may nominate themselves and that they may nominate the same persons for more than 1 item. The items were:

> *Cooperative.* Here is someone who is really good to have as part of your group, because this person is agreeable and cooperates—pitches in, shares, and gives everyone a turn.
>
> *Disruptive.* This person has a way of upsetting everything when he or she gets into a group—doesn't share and tries to get everyone to do things their way.
>
> *Acts shy.* This person acts very shy with other kids. It's hard to get to know this person.
>
> *Starts fights.* This person starts fights. This person says mean things to other kids or pushes them, or hits them.
>
> *Seeks help.* This person is always looking for help, asks for help even before trying very hard.
>
> *Leader.* This person gets chosen by the others as the leader. Other people like to have this person in charge.
>
> *Athletic.* This person is very good at many outdoor games and sports.
>
> *Gets in trouble.* This person doesn't follow the rules, doesn't pay attention, and talks back to the teacher.
>
> *Good student.* This person makes good grades, usually knows the right answer, and works hard in class.
>
> *Cool.* This person is really cool. Just about everybody in school knows this person.
>
> *Sad.* This person often seems sad.
>
> *Starts rumors.* This person gossips and says things about others. This person is good at causing people to get mad at each other.
>
> *Popular.* Some kids are very popular with their peers. That is, many classmates like to play with them or do things with them.
>
> *Picked on.* This person is picked on by others.
>
> *Friendly.* This person is usually friendly to others.
>
> *Bully.* This person is always hurting or picking on others.

Three-week test-retest reliability with individual items ranged from .72-.93. These items are identical with, or similar to, peer assessments used by other investigators (e.g., Cantrell & Prinz, 1985; Coie, Dodge, & Coppotelli, 1982; Masten, Morison, & Pellegrini, 1985). The total number of nominations participants received on each peer-assessment item was divided by the total number of possible nominators (i.e., all participants in the school). Because the denominator was the total number of participants in each school, the resulting proportions were small. In order to make mean differences clearer, these proportions were multiplied by 1000. A factor analysis of these 16 items yielded a four-factor solution consisting of aggression (α = .90; consists of "disruptive," "starts fights," "gets in trouble," "starts rumors," and "bully"), prosocial (α = .81; consists of "cooperative,"

"good student," and "friendly"), social prominence ($\alpha = .83$; consists of "leader," "athletic," "cool," and "popular"), and internalizing ($\alpha = .63$; consists of "acts shy," "seeks help," "sad," and "picked on").

Social-network centrality. The Social Cognitive Mapping (SCM) procedure has been used extensively in research on school social networks and was employed in the current study to obtain a measure of social-network centrality (e.g., Cairns & Cairns, 1994; Kinderman, 1993; Xie, Cairns, & Cairns, 1999). For this measure, students were asked "Are there some kids in your classroom who hang around together a lot? Who are they?" Following the procedures developed by Cairns and colleagues (e.g., Cairns, Leung, Buchanan, et al., 1995), students were then instructed to list as many groups as they could think of in their grade. To ensure reliability and validity, a 50% participation rate has been established as the standard (Cairns, Leung, Buchanan, et al.). The participation rate for this study was consistent with these guidelines. For the current study, the total number of times an individual student was named by peers was used an indicator of an individual's prominence or centrality in the social network.

Parent-Report Measures

Behavioral Emotional Rating Scale (BERS). The BERS (Epstein & Sharma, 1998) is a parent report strength-based assessment that includes a focus on students' school functioning. This measure was completed via phone interviews with participants' parent or guardian. The BERS consists of 52 items on a 4-point scale that ranged from 0 (*not at all like the child*) to 3 (*very much like the child*). For the current investigation, only the school-functioning subscale ($\alpha = .86$) was used. This scale consists of 9 items: "completes a task on first request," "completes school tasks on time," "completes homework regularly," "pays attention in class," "computes math problems at or above grade level," "reads at or above grade level," "studies for tests," "attends school regularly," and "uses note-taking and listening skills in school."

End-of-Year Grades

Students' end-of-year grades were obtained from school records. Grades from English, math, science, social studies, and reading classes were used for the current study. Grades were in the form of a percentage averaged across five classes. Some students ($n = 40$, 10.2%) were missing a grade in one of the five classes. For these participants, the scores of the remaining four classes were used to obtain an average.

Data Reduction Procedures

A strength of this study was that it assessed school adjustment with multiple measures and informants. While redundant information on similar constructs can enhance confidence in the findings, it can also lead to confusion. To facilitate clarity in interpretation, three distinct domains (academic, behavioral, social) were established to group constructs in the analysis and presentation of the results.

Academic domain. Measures of the academic domain were gathered from teachers, peers, and parents or guardians. Factors within these measures were identified as described above in the description of the measures. These factors were further grouped into an academic competence and academic orientation subcategory. Academic competence consisted of the academic factor of the ICS-T and the peer-assessment item of "good student." Academic orientation was composed of the instructional engagement factor ("very hyperactive" and "lots of problems paying attention") of the teacher assessment of classroom adjustment and parent reports of the school-functioning subscale of the BERS.

Behavioral domain. Measures of students' behavior were gathered from teachers, students, and peers. Assessments in this domain were grouped into the following subcategories: aggression, internalizing, and prosocial.

Aggression. Teachers completed several measures about aggressive behavior. These included the aggression subscale of the ICS-T, the "bullies peers" and "manipulates friendships" items of the classroom-adjustment scale, and the proactive and reactive aggression factors. Bivariate correlations indicated that these teacher-reported indices of aggressive behavior were highly related (rs = .37 to .80, $p < .001$). A principal components analysis indicated that all measures loaded on a single factor. Consequently, each variable was standardized, and the unweighted average across these measures was obtained. This factor, teacher-reported aggression, was used in subsequent analyses. The aggression factor from peer assessments was used as an additional index of aggressive behavior.

Internalizing. The internalizing subscale on the ICS-T provided a teacher report of this behavior. Likewise, the internalizing peer-assessment factor comprised a peer measure of this construct.

Prosocial. Prosocial behavior was assessed with both teacher and peer reports. The affiliative subscale of the ICS-T was used to assess teachers' perceptions of students' prosocial behavior, and the prosocial factor of the peer-behavioral assessments was used to measure peers' perceptions of their classmates prosocial behavior.

Social domain. Several measures of participants' social adjustment were available from various sources. These were grouped into indices of perceived popularity and social position within the school social network.

Perceived popularity. The popularity subscale from the ICS-T was considered as a teacher-report measure of this subcategory. The peer interpersonal assessment social-prominence factor was also included as a peer-report measure of perceived popularity.

Social position. Teacher ratings of "class leader" from the classroom-adjustment scale and the corresponding peer-behavioral assessment item for "leader" were used as an index of social position. Also, participants' social-network centrality (i.e., frequency of nominations to a peer group) from the SCM procedure provided an additional measure of social position.

Academic success. The aggregate of participants' school grades was used as a measure of academic success. Typically, participants were taught in five distinct content areas by five different teachers. The collective grade a participant receives yields a measure of how teachers' generally view her or his academic progress. Based on grade averages, participants were designated as having low, moderate, and high levels of academic grades. Students in the upper 20% of the distribution of grade averages were designated as having high academic grades, and those in the lower 20% of the distribution were considered to have low academic grades. Participants between the upper and lower 20% of the distribution were deemed to have moderate grades. These classifications were made within gender. Fifty girls were designated as having low grades, 149 had moderate grades, and 51 had high grades. Twenty-seven boys were classified as having low grades, 86 had moderate grades, and 28 were identified as having high grades.

Results

The results are presented in two sections. The first section examines gender differences in academic grades and on measures of academic, behavioral, and social adjustment. In the second section, the academic grade subgroups (i.e., levels of academic grades) are examined to identify differences among the groups on measures within the academic, behavioral, and social domains.

To address the second aim of this investigation, a series of ANOVAs by levels of academic grades was conducted on each relevant measure. Significant omnibus *F* tests ($\alpha = .05$) were followed by post hoc pairwise comparisons. For some variables, the Levene statistic for the equality of group variances was significant. Such violations of the homogeneity of variance assumption are potentially more problematic when groups have different sample sizes (Howell, 1997). Under these circumstances, the more appropriate Welch statistic was examined.

In all cases, an overall significant difference of the Welch statistic reflected those of the *F* test. Further when the Levene statistic was significant, post hoc pairwise comparisons were completed with the use of the Dunnett's T3 test that does not assume equal variances. Finally, to control the family-wise Type I error rate, a Bonferonni correction for the post hoc comparisons of the three levels of academic grades was employed at the .05 level divided by 3. Consequently, a post hoc comparison was deemed significant when the *p* value was equal to or less than .0167.

Gender Differences

Table 1 shows the means of each measure by gender.

Academic grades. Girls had significantly higher academic grades than boys, $F(1, 390) = 41.07$, $p < .001$.

Academic domain. Girls had significantly higher academic competence on both teacher-reported and peer-assessed measures, $F(1, 390) = 26.06$, $p < .001$ and $F(1, 390) = 7.43$, $p = .007$, respectively. Girls also were significantly higher on teacher- and parent-reported measures of academic orientation, $F(1, 387) = 12.54$, $p < .001$ and $F(1, 280) = 12.11$, $p = .001$, respectively.

Behavioral domain. Boys had significantly higher scores on teacher-reported and peer-assessed aggression measures, $F(1, 390) = 8.90$, $p = .003$ and $F(1, 390) = 9.99$, $p = .002$, respectively. There were no differences between boys and girls on teacher-reported and peer-assessed measures of internalizing behavior. There was not a gender difference on teacher-reported prosocial behavior, but girls were, according to their peers, more prosocial than boys, $F(1, 390) = 16.13$, $p < .001$.

Social domain. Teachers rated girls as more popular than boys, $F(1, 390) = 11.20$, $p = .001$, but there was not a gender difference on peer-assessed popularity. Girls were higher on all measures of social position. Girls were more likely to be viewed by teachers and peers as being leaders, $F(1, 390) = 7.81$, $p = .005$ and $F(1, 390) = 3.86$, $p = .05$. Girls also had higher social-network centrality than boys, $F(1, 390) = 18.50$, $p < .001$.

Differences on Domains by Levels of Academic Grades

Tables 2-4 show the means on measures in each domain by levels of academic grades.

Academic domain. There were differences on both teacher-reported and peer-assessed measures of academic competence by girls' level of academic grades, $F(2, 247) = 44.39$, $p < .001$ and $F(2, 247) = 32.77$, $p < .001$, respectively. Post hoc tests revealed an identical pattern across these measures. Girls with high academic grades had significantly higher adjustment on teacher-reported academic and peer-assessed "good student" measures than those with low and moderate grades. Girls with moderate grades were higher on both measures than those with low grades.

For boys, there were also differences on both teacher-reported and peer-assessed measures of academic competence by levels of academic grades, $F(2, 139) = 10.57$, $p < .001$ and $F(2, 139) = 10.22$, $p < .001$, respectively. Pairwise comparisons indicated that boys with high academic grades were higher on the teacher-reported academic

Table 1
Means and Standard Deviations on Measures by Gender

Measure	Girls *M* (*SD*)	Boys *M* (*SD*)	Partial η^2
Academic grades			
Grades	77.78 (8.82)	71.93 (8.42)	.10
Academic competence			
Teacher-reported academic	4.73 (1.66)	3.90 (1.34)	.06
Peer-assessed "good student"	10.08 (20.73)	4.88 (12.47)	.02
Academic orientation			
Teacher-reported instructional engagement	5.06 (1.64)	4.43 (1.72)	.03
Parent-reported school functioning	2.54 (.43)	2.35 (.48)	.04
Aggressive behavior			
Teacher-reported aggression	-.09 (.75)	.16 (.85)	.02
Peer-assessed aggression	4.38 (7.36)	8.44 (17.84)	.03
Internalizing behavior			
Teacher-reported internalizing	2.97 (1.28)	2.98 (1.06)	
Peer-assessed internalizing	4.55 (10.12)	4.80 (8.12)	
Prosocial behavior			
Teacher-reported affiliative	5.43 (1.40)	5.32 (1.28)	
Peer-assessed prosocial	9.50 (13.07)	4.70 (7.52)	.04
Popularity			
Teacher-reported popularity	5.24 (1.41)	4.75 (1.34)	.03
Peer-assessed social prominence	6.08 (10.11)	7.97 (15.58)	
Social position			
Teacher-reported class leader	4.05 (1.98)	3.49 (1.77)	.02
Peer-assessed leader	7.88 (15.98)	4.93 (10.70)	.01
Social-network centrality	12.32 (8.73)	8.57 (7.44)	.05

Table 2
Means and Standard Deviations on Academic Domain Measures by Levels of Academic Grades

Measure		Levels of Academic Grades: Low *M* (*SD*)	Moderate *M* (*SD*)	High *M* (*SD*)	Partial η^2
Academic competence					
Teacher-reported academic	Girls	3.41 (1.58)	4.71_{b} (1.45)	$6.09_{b,c}$ (1.20)	.26
	Boys	3.22 (1.11)	3.83 (1.25)	$4.74_{b,c}$ (1.40)	.13
Peer-assessed "good student"	Girls[a]	1.82 (2.69)	6.57_{b} (11.04)	$28.44_{b,c}$ (36.36)	.21
	Boys[a]	2.48 (4.23)	2.67 (4.89)	13.66 (24.36)	.13
Academic orientation					
Teacher-reported instructional engagement	Girls[a]	4.22 (1.70)	4.98_{b} (1.59)	$6.12_{b,c}$ (1.11)	.14
	Boys	3.43 (1.56)	4.54_{b} (1.71)	5.07_{b} (1.52)	.10
Parent-reported school functioning	Girls[a]	2.33 (.55)	2.54 (.37)	$2.79_{b,c}$ (.29)	.13
	Boys	2.07 (.50)	2.35_{b} (.47)	$2.63_{b,c}$ (.33)	.14

[a]Dunnett's T3 used for post hoc comparisons. $_{b}$Significantly different from Low. $_{c}$Significantly different from Moderate.

measure than boys with low and moderate grades. However, none of the pairwise comparisons on peer-assessed "good student" reached significance.

There were differences for girls on both teacher- and parent-reported academic orientation by levels of academic grades, $F(2, 245) = 19.73$, $p < .001$ and $F(2, 176) = 13.30$, $p < .001$, respectively. Post hoc tests revealed that girls with high academic grades were significantly higher on teacher-reported instructional engagement and parent-reported school-functioning measures than those with low and moderate grades. In addition, girls with moderate grades were higher on teacher ratings of instructional engagement than those with low grades.

Boys also had differences on teacher- and parent-reported academic orientation by levels of academic grades, $F(2, 138) = 7.39$, $p = .001$ and $F(2, 100) = 8.36$, $p < .001$, respectively. Post hoc tests revealed that boys with high and moderate academic grades were, according to teachers and parents, significantly higher on instructional engagement and school functioning than those with low grades. In addition, parents indicated that boys with high grades were higher on school functioning than those with moderate grades.

Behavioral domain. There were differences for girls on teacher-reported and peer-assessed measures of aggression by levels of academic grades, $F(2, 247) = 10.35$, $p < .001$ and $F(2, 247) = 7.28$, $p = .001$, respectively. Post hoc tests revealed that on both of these measures girls with high academic grades were significantly less aggressive than those with low and moderate grades.

Boys also had differences on teacher-reported and peer-assessed measures of aggression by levels of academic grades, $F(2, 139) = 5.69$, $p = .004$ and $F(2, 139) = 8.44$, $p < .001$, respectively. Post hoc tests revealed that on both measures boys with high academic grades were significantly less aggressive than those with low grades.

Teacher-reported and peer-assessed measures of internalizing behavior differed by levels of academic grades, $F(2, 247) = 13.68$, $p < .001$ and $F(2, 247) = 5.41$, $p = .005$, respectively. Post hoc tests revealed that on both of these measures girls with high academic grades were significantly lower on internalizing behavior than those with moderate grades. On the teacher-reported measure, girls with high grades were also lower on internalizing behavior than girls with low grades. Boys did not evidence any significant dif-

Table 3
Means and Standard Deviations on Behavioral Domain Measures by Levels of Academic Grades

		Levels of Academic Grades			
		Low	Moderate	High	
Measure		*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	Partial η^2
		Aggressive behavior			
Teacher-reported aggression	Girls[a]	.14 (.78)	-.03 (.76)	$-.48_{b,c}$ (.53)	.08
	Boys[a]	.62 (1.10)	.09 (.75)	$-.07_{b}$ (.73)	.08
Peer-assessed aggression	Girls[a]	6.95 (9.52)	4.49 (7.36)	$1.51_{b,c}$ (2.39)	.06
	Boys[a]	20.29 (28.18)	6.37 (14.49)	3.54_{b} (7.33)	.11
		Internalizing behavior			
Teacher-reported internalizing	Girls	3.28 (1.25)	3.13 (1.18)	$2.18_{b,c}$ (1.28)	.10
	Boys	2.91 (1.12)	3.04 (1.11)	2.87 (.85)	
Peer-assessed internalizing	Girls[a]	8.37 (19.32)	4.11 (6.14)	2.09_{c} (3.29)	.04
	Boys	7.18 (8.62)	4.55 (8.64)	3.33 (5.36)	
		Prosocial behavior			
Teacher-reported affiliative	Girls	5.17 (1.54)	5.31 (1.36)	$6.05_{b,c}$ (1.21)	.05
	Boys	5.07 (1.33)	5.31 (1.27)	5.55 (1.25)	
Peer-assessed prosocial	Girls[a]	3.91 (3.77)	8.09_{b} (10.38)	$19.09_{b,c}$ (19.66)	.15
	Boys[a]	2.65 (3.88)	3.58 (4.41)	9.90_{b} (13.27)	.13

[a]Dunnett's T3 used for post hoc comparisons. [b]Significantly different from Low. [c]Significantly different from Moderate.

ferences on the measures of internalizing behavior by levels of academic grades.

Teacher-reported and peer-assessed prosocial behavior also differed by academic grades for girls, $F(2, 247) = 6.65$, $p = .002$ and $F(2, 247) = 22.52$, $p < .001$, respectively. Post hoc tests indicated that girls with high academic grades were significantly higher on teacher-reported affiliative and peer-assessed prosocial factors than those with low and moderate grades. In addition, girls with moderate grades were, according to their peers, also more prosocial than girls with low grades.

For boys, peer-assessed prosocial behavior differed by academic grades, $F(2, 139) = 10.01$, $p < .001$. According to peers, boys with high grades were more prosocial than boys with low grades.

Social domain. Differences were apparent on teacher-reported popularity by academic grades for girls, $F(2, 247) = 8.21$, $p < .001$, but not on the peer-assessed measure. Teachers rated girls with high academic grades as more popular than girls with low and moderate grades. There were not any significant differences on teacher-reported or peer-assessed popularity by levels of academic grades for boys.

Girls also had differences on teacher-reported and peer-assessed measures of social position, $F(2, 247) = 24.78$, $p < .001$ and $F(2, 247) = 5.61$, $p = .004$, respectively. On both measures, girls with high and moderate grades were

Table 4
Means and Standard Deviations on Social Domain Measures by Levels of Academic Grades

Measure		Levels of Academic Grades: Low *M* (*SD*)	Moderate *M* (*SD*)	High *M* (*SD*)	Partial η^2
		Popularity			
Teacher-reported popularity	Girls	4.72 (1.41)	5.21 (1.40)	$5.82_{b,c}$ (1.24)	.06
	Boys	4.59 (1.37)	4.73 (1.33)	4.95 (1.39)	
Peer-assessed social prominence	Girls	3.63 (3.26)	6.41 (10.38)	7.54 (13.11)	
	Boys	5.79 (4.52)	6.96 (14.10)	13.01 (23.77)	
		Social position			
Teacher-reported class leader	Girls	2.84 (1.69)	4.01_{b} (1.87)	$5.37_{b,c}$ (1.77)	.17
	Boys	2.48 (1.70)	3.47_{b} (1.61)	$4.52_{b,c}$ (1.77)	.13
Peer-assessed leader	Girls[a]	3.91 (4.09)	7.12_{b} (14.43)	13.97_{b} (24.16)	.04
	Boys[a]	3.21 (4.20)	3.49 (7.75)	10.78 (18.27)	.08
Social-network centrality	Girls	11.32 (9.13)	13.07 (9.32)	11.08 (6.05)	
	Boys	6.96 (5.14)	8.50 (7.73)	10.28 (8.18)	

[a]Dunnett's T3 used for post hoc comparisons. $_{b}$Significantly different from Low. $_{c}$Significantly different from Moderate.

more likely to be viewed as leaders than were girls with low grades. In addition, teachers also rated girls with high grades as being more of a leader than girls with moderate grades.

Boys had differences on teacher-reported and peer-assessed measures of leadership, $F(2, 139) = 10.55$, $p < .001$ and $F(2, 139) = 5.83$, $p = .004$. Post hoc tests revealed that teachers rated boys with high and moderate grades as more of a leader than boys with low grades. In addition, teachers also rated boys with high grades as being leaders than boys with moderate grades. However, none of the pairwise comparisons on the peer-assessed measure reached significance.

Discussion

The results of this study yield two important findings for understanding intervention needs in rural schools serving high concentrations of African American early adolescents from low-resource communities. First, there may be significant gender differences in the school adjustment of students in such settings. Generally, girls appeared to have more positive characteristics than boys. They tended to have higher academic grades, higher teacher- and peer-reported academic competence, higher teacher- and parent-reported academic orientation, higher teacher- and peer-reported leadership, higher peer-reported prosocial behavior, higher teacher-reported popularity, and higher peer-reported social-network centrality. Boys were higher on teacher- and peer-assessed aggression. Second, the end-of-year grades of rural African Americans from high-poverty communities appear to be associated with their academic, behavioral, and social adjustment. Youth who had high end-of-year grades were more likely to have positive academic, behavioral, and social characteristics, while students who had low end-of-year school grades were more likely to have negative characteristics.

By reflecting a person-oriented approach that focuses on subtypes of individuals rather than relationships among variables (c.f., Bergman & Magnusson, 1997; Cairns & Rodkin, 1998; Luthar, Cicchetti, & Becker, 2000; Roeser & Peck, 2003), the current findings help to clarify factors that distinguish among rural African American early adolescents from low-resource communities who are successful and unsuccessful in school. Consistent with a developmental science framework and the concept of correlated constraints (Cairns & Cairns, 1994; Farmer, Quinn, Hussey, & Holahan, 2001), the present works suggests that academic, behavioral, and social factors may contribute to students' end-of-year grades. The term *contribute* here does not mean cause. In fact, current views of developmental science suggest that it is not productive to think in terms of causation in the sense that an outcome is produced by a preceding factor. Rather, multiple factors at multiple levels (e.g., biophysical, cognitive, behavioral, social contextual) operate coactively within a system of bidirectional influence such that each dynamically influences the other as they collectively contribute to human functioning and adaptation (see Bergman, Cairns, Nilsson, & Nystedt, 2000; Cairns, Bergman, & Kagan, 1998; Cairns & Cairns, 1994; Cairns, Elder, & Costello, 1996; Magnusson, 1988; Sameroff, 1983).

Our findings suggest that academic, behavioral, and social adjustment are all part of a system of factors that are associated with students' end-of-year grades. Other factors at the individual, family, and community levels are also likely to contribute. However, academic, behavioral, and social factors are all within the purview of schools. Thus, these factors may be most accessible for school-based interventions aimed at enhancing the academic performance of students in rural schools that serve high concentrations of African American early adolescents from low-resource communities and backgrounds.

While African American youth from impoverished rural communities in the South are only a small portion of students who are served in rural schools, they do make up a substantial group of students who need academic support within the Rural Low-Income School Program (Farmer et al., 2006). Further, throughout the South there are many schools that serve high concentrations of such youth who are struggling academically (Johnson & Strange, 2005; Save the Children, 2002). Although the current sample does not generalize to the universe of rural school and students, it does reflect fairly common circumstances in many parts of the South. Therefore, the present findings may help to serve as a guide for interventionists as they work to establish and evaluate programs to address the academic needs of early adolescents from rural schools that serve high concentrations of impoverished African American students.

Accordingly, the findings of this study suggest that, overall, rural African American early adolescent males may be at higher risk of experiencing low end-of-year school grades and associated school adjustment problems. Thus, there may be a need for selected interventions that specifically focus on supporting rural African American males from low-resource communities. In addition, there is a need for targeted interventions that focus on youth (both boys and girls) who experience risks across the academic, behavioral, and social domains. For youth who have multiple risks, there is a need for interventions that systematically focus on the interrelations among these various factors and that support positive change across these domains (Coie et al., 1993; Farmer & Farmer, 2001). Finally, because of the general risk of poverty and low resources, there is a need for universal interventions that are aimed at enhancing the general competence and academic achievement of all students in rural schools that serve high concentrations of impoverished African American youth.

The results of this study suggest that to improve the academic success of low-achieving youth in schools that serve high concentrations of rural African American early adolescents from low-resource backgrounds, there is a need to focus on behavioral and social factors as well as instructional practices. Teachers of struggling students must be prepared to work with a range of problems that may contribute to poor academic performance in rural youth. This includes attention problems and hyperactivity, aggressive and disruptive behavior, bullying and victimization, and generally lower rates of academic orientation and engagement. Efforts to improve student achievement may be enhanced by professional development programs that bring together a focus on behavior management, classroom social dynamics, and the instructional needs of students with learning difficulties.

Because rural communities and schools have highly diverse needs and populations (Johnson & Strange, 2005; Sherwood, 2000), it is not appropriate to generalize the current findings to the broader rural education community. Nonetheless, the current findings are consistent with general research on developmental pathways and academic adjustment with a range of adolescents from rural, suburban, and urban settings both in the United States and internationally (see Cairns et al., 1998; Roeser & Peck, 2003). There is a need for additional research that examines factors associated with the academic success of rural youth from settings that are geographically, economically, ethnically, and culturally different. We expect that there will be findings that are similar to those in the current report. But we also expect there will be differences that reflect characteristics of the communities. Such differences are likely to demonstrate that there is no one-size-fits-all in rural education research and that there is a need to establish rural intervention programs and policies that are responsive to the context of particular schools and communities. When such information is available, it is likely to enhance efforts for improving the educational outcomes

and academic achievement of rural youth in ways that are consistent with their personal goals and aims and the needs of their respective communities.

That said, this study has several limitations. First, it focused exclusively on rural African American youth. It is possible that our findings would not generalize to rural youth from other ethnic or racial backgrounds. Second, the two communities involved in this study are highly impoverished. Our results may not be representative of rural areas that have moderate or low rates of poverty. Third, the sample size for boys was relatively small as there was a lower participation rate for boys than girls. It is possible that the lack of significant differences for some findings (e.g., social relations) was due to inadequate statistical power. Fourth, we did not consider key developmental variables such as family structure, social capital, and community values and goals.

In summary, our results demonstrate the need to consider how academic, behavioral, and social factors may come together to contribute to the academic difficulties of low-achieving early adolescents in rural schools that serve high concentrations of impoverished African American youth. While these findings are informative, more work in this area is needed. Future investigations should examine factors that contribute to academic achievement in geographically, ethnically, and economically different rural samples. Also, there is a need to extend the focus to other factors such as peer affiliations, parent involvement, school bonding, social capital, and other community factors. Finally, there is a need to develop and evaluate professional development programs that prepare teachers to address the behavioral and social factors that may contribute to the achievement problems of students with learning difficulties. Such work can be conducted within an experimental framework with a longitudinal design to examine the impact of changing such variables on the academic outcomes of students. This work will make it possible to examine pathways of configurations and developmental trajectories and will enhance current views of developmental contribution and causation.

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