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Father Involvement and Young, Rural African American Men's Engagement in Substance Misuse and Multiple Sexual Partnerships

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Abstract

This study was designed to examine the associations of biological father and social father involvement during childhood with African American young men's development and engagement in risk behaviors. With a sample of 505 young men living in the rural South, a dual mediation model was tested in which retrospective reports of involvement from biological fathers and social fathers were linked to young men's substance misuse and multiple sexual partnerships through men's relational schemas and future expectations. Results from structural equation modeling indicated that levels of involvement from biological fathers and social fathers predicted young men's relational schemas; only biological fathers' involvement predicted future expectations. In turn, future expectations predicted levels of substance misuse, and negative relational schemas predicted multiple sexual partnerships. Biological fathers' involvement evinced significant indirect associations with young men's substance misuse and multiple sexual partnerships through both schemas and expectations; social fathers' involvement exhibited an indirect association with multiple sexual partnerships through relational schemas. Findings highlight the unique influences of biological fathers and social fathers on multiple domains of African American young men's psychosocial development that subsequently render young men more or less likely to engage in risk behaviors.

Keywords

African American; father involvement; relational schemas; future expectations; risk behaviors

African American young men are disproportionately affected by risk behaviors in adulthood, including substance use and unsafe sexual behavior. African Americans experience more negative consequences per ounce of alcohol or other drugs consumed than do members of other ethnic groups (Jones-Webb, 1998) and disparities are evident with respect to alcohol dependence, arrests, and clinic admissions (Galea & Rudenstine, 2005; Jacobson, Robinson, & Bluthenthal, 2007; Mitchell & Caudy, 2013). HIV diagnoses are also disproportionately greater among African American men (Morris, Kurth, Hamilton, Moody, & Wakefield,

2009) and elevated levels of involvement in sexual risk behaviors, such as multiple sexual partnerships, places many African American men and their partners at risk for sexually transmitted infections including HIV and unplanned pregnancies (Centers for Disease Control and Prevention, 2010).

Although contemporaneous contextual stressors, such as racial discrimination (Kogan, Brody, et al., 2010; Kogan, Yu, Allen, Pocock, & Brody, 2014) and economic distress (Nunn et al., 2011), have been linked to young Black men's risk behavior, a corpus of research has underscored the influence of childhood family environments as a determinant of later risk behavior (Chen & Jacobson, 2012; Lansford et al., 2010). These studies emphasize the role of caregivers in supporting children's psychological, cognitive, and emotional well-being, which in turn affects risky behavior in adulthood (Resnick et al., 1997). To date, the majority of developmental studies have focused on the mother-child relationship, particularly among African Americans (e.g., Kogan, Lei, et al., 2013). Extant research on father involvement, however, suggests that supportive and nurturing fathering facilitates children's positive development as well. For example, aspects of father involvement have been linked to African American adolescents' positive social and academic development (Nord & West, 2001), reduced drug use and risky behaviors (Pan & Farrell, 2006; Stanik, Riina, & McHale, 2013), and greater sexual exclusivity with romantic partners (Willis & Clark, 2007). The benefits of fathering extend to care provided by other men in African American children's lives who function as father figures or "social fathers" (Coley, 2003; Jayakody & Kalil, 2002). These social fathers include stepfathers, grandfathers, uncles, and non-kin who may play important fathering roles. Similar to that of biological fathers, involvement of social fathers also has been found to promote positive development among African American children (see Coley, 2003).

To date, however, several important limitations are evident in the research base on African American father involvement and their adult sons' engagement in risky behavior. First, studies typically consider father involvement as originating from biological *or* social fathers; few, if any, studies have considered the influences of biological *and* social fathers. Hence, the relative influence of each type of father is unknown. Second, studies have rarely examined the effects of African American father involvement on children as they transition to adulthood, focusing instead on developmental outcomes when children are in early childhood and adolescence. Third, the psychosocial mechanisms through which biological and social father involvement is associated with risk behaviors in adulthood have rarely been investigated, despite their potential utility to inform intervention efforts aimed at reducing risk behaviors among young adult African American men.

In response, the current study was designed to investigate the unique effects of biological and social father involvement during childhood on African American men's substance misuse and multiple sexual partnerships in young adulthood. Hypotheses were tested with data from a sample of African American young men from resource-poor communities in the rural South. We hypothesized that the involvement of biological fathers, social fathers, or both would affect substance misuse and sexual partnerships indirectly by affecting two psychosocial mechanisms: negative relational schemas and future expectations. A discussion of these processes follows.

Negative relational schemas

Relational schemas are cognitive structures that represent patterns of relating to others within interpersonal contexts (Baldwin, 1992). Developed in response to one's history of interpersonal interactions with important others, relational schemas help individuals to define situations efficiently by drawing attention to salient cues in the social environment, goals associated with response options, and consequences associated with particular responses (Baldwin, 1992). Negative relational schemas include a cynical, distrusting view of others (Simons, Simons, Lei, & Landor, 2011). Previous studies have linked maladaptive relational schemas, indexed by measures of attachment style, to substance use in adults (Shorey, Brasfield, Anderson, & Stuart, 2013). Insecure adult attachment styles have been linked as well to risky sexual behaviors, including substance use prior to sex (Feeney, Peterson, Gallois, & Terry, 2000) and number of lifetime sexual partners (Bogaert & Sadava, 2002).

Interactions in family environments appear particularly influential in shaping adults' relational schemas. For example, negative parenting and family experiences in childhood have been linked to adults' mistrust of their romantic partners' motives (Homer, Freeman, Zabriskie, & Eggett, 2007) and general cynical and hostile views of relationships (Simons et al., 2011). Existing research on the development of relational schemas has focused almost exclusively on maternal influences (Kogan, Lei, et al., 2013; Simons et al., 2011). We identified only one study examining African American fathers' contributions to concepts related to children's relational schemas. Results from this study indicated African American young men's retrospective reports of high levels of paternal care from either biological or social fathers predicted low levels of anxious attachment styles (Willis & Clark, 2007). Consistent with this finding and with schema theory, we expect that young men who grew up secure in the knowledge that their biological or social father supported and cared for them will internalize aspects of this relationship into their working models of other relationships. Conversely, low levels of nurturance from a biological father or social father are hypothesized to lead to *negative relational schemas*, characterized by mistrust, defensiveness, and anxiety. Negative relational schemas in turn, are expected to affect substance misuse and involvement with multiple sexual partners.

Future expectations

The second intervening psychosocial mechanism, future expectations, represents individuals' subjective assessment of the future and their likelihood of attaining life goals (e.g., attending college, enjoying their jobs, having happy family lives). Similar concepts appearing in the literature include future aspirations (Nurmi, 1991), positive life orientation (Kogan, Luo, Murry, & Brody, 2005), and optimism about the future (Bryan, Aiken, & West, 2004). Studies with adolescent and young adult samples have found a lack of positive future expectations to predict greater substance use, violent behaviors, risky sexual behavior, and unplanned pregnancy (Bolland, 2003; Griffin, Botvin, Nichols, & Scheier, 2004; Kogan, Cho, et al., 2013; McDade et al., 2011; Robbins & Bryan, 2004; Stoddard, Zimmerman, & Bauermeister, 2011). As with youth's relational schema, interactions with caregivers appear to facilitate the development of youth's future expectations, with both maternal involvement

(Kerpelman, Eryigit, & Stephens, 2008; McCabe & Barnett, 2000) and supportive family relationships in general (Dubow, Arnett, Smith, & Ippolito, 2001; Kogan et al., 2005) favorably associated with children's future expectations.

Little research to date has investigated the specific influence of fathers, whether biological or social, on male youth's future expectations. Studies involving African American samples, however, suggest that fathers have a unique role in their children's development of future aspirations. Sanders (1998), for instance, reported that African American youth residing in two-parent households had higher academic expectations than did those residing in single-mother-headed households. Additionally, qualitative studies with African American men highlight the loss they experience from their biological fathers' absence and its effects on their thoughts about their own future as adults and as fathers (Hunter et al., 2006). We thus expected African American men who reported involvement from biological or social fathers also to report heightened future expectations. In turn, we expected expectations for a positive future to forecast limited numbers of sexual partnerships and avoidance of problems with substance use.

In summary, the current study investigated the effects of biological and social father involvement on young African American men's development and risk behaviors. We hypothesized that, for these young men, high-quality father involvement from either a biological or social father would influence levels of substance misuse and multiple sexual partnerships by attenuating the development of negative relational schemas and enhancing youths' expectations for a positive future. In our analyses, we controlled for adverse childhood experiences and paternal educational attainment. Adverse childhood experiences, such as child neglect, physical abuse, and caregiver substance abuse, have been found to be robust predictors of adult psychological and behavioral outcomes (Dube et al., 2003; Edwards, Holden, Felitti, & Anda, 2003). Paternal educational attainment was included given its associations with father involvement and child outcomes (Bornstein & Bradley, 2003). By including these factors, the study offers a more stringent examination of the unique effects of fathering on future expectations, relational schemas, substance use, and sexual behavior.

Method

Participants and Procedures

Study hypotheses were tested with data from 505 men participating in the African American Men's Project (AMP). AMP is a study of health risk behaviors, relationship development, and well-being among young African American men living in resource-poor rural communities in the southern United States. Eligibility criteria included self-designation as African American, residence in the sampling area, male gender, and age of 19 to 22 years. Participants were recruited using respondent-driven sampling (RDS), a chain-referral protocol designed to reduce biases commonly associated with network-based samples (Heckathorn, 1997). RDS is a preferred method for sampling interconnected but hard-to-reach populations such as young men whose employment and residential situations change frequently (Kogan, Wejnert, Chen, & Brody, 2010).

Sampling proceeded as follows: Community Liaisons (CLs) recruited 45 initial “seed” participants from 11 counties. CLs are respected community members who serve as a bridge between participants and our research center. CLs identified young men through their own social networks and described the study to them. Project staff contacted interested men, described the project, determined eligibility, and set up a data collection visit at the participant's home or a convenient community site (usually a private room in the public library). Informed consent of participants was obtained by CLs prior to the start of data collection. Upon completion of the data collection visit, each of the initial “seed” participants provided the names of three men in their personal networks who met eligibility criteria. Project staff contacted these men regarding participation. As with the seeds, upon completion of data collection, these participants also provided referral information for three network members. For each network member successfully recruited into the study, the referring participant received \$25. Self-report data were gathered from participants via audio computer-assisted self-interviewing. The user-friendly program guides respondents through the survey; those with low literacy are assisted through voice and video enhancements. Each participant received \$100 at the conclusion of the data collection visit. All study protocols were approved by the University Institutional Review Board.

Participants' mean age was 20.7 years ($SD = 1.22$) and ranged from 19 to 22 years. Level of educational attainment ranged from Grade 9 or below to trade school diploma or Associate of Arts degree, with 85% having completed high school or receiving a General Equivalence Diploma. Half of the sample (50%) reported current enrollment in schooling of some sort, and 42% were currently employed. Most (95%) participants were single. The vast majority (97%) of men had had sex in their lifetime: 94% with just female partner(s), 2% with male and female partners, and 1% with just male partner(s). Of the participants, 21% reported living with their biological fathers during their entire childhoods, and 40% reported never living with their biological fathers.

Measures

Risk behaviors—Substance misuse was assessed using measures indexing frequency and problem use of substances. Substance use frequency was indexed with the item: “Thinking about the past 3 months, on average how many days per month did you get high using alcohol or drugs of any type?” Problem use was assessed with a 10 item scale (Harrison, Fulkerson, & Beebe, 1998) that assessed the frequency of various substance use consequences. Questions included the number of times in the past 3 months they had “used more alcohol or other drugs than you intended to,” “neglected your responsibilities because of alcohol or other drug use,” and “used so much alcohol or other drugs that the next day you could not remember what you had said or done.” The response scale ranged from 0 (*never*) to 6 (*11 or more times*), and Cronbach's alpha for the scale was .86. Values from the problem use scale and the single-item frequency measure were standardized and summed to create a substance misuse composite.

Multiple sexual partnerships were assessed using a single, open-ended question: “In the past 3 months, how many different women or girls have you had sex with?”. For individuals that reported having sex with a man or a boy in their lifetime, multiple sexual partners was

assessed by summing the number of man or boy sexual partners in the last three months with the number of woman or girl sexual partners in the last three months. To address a departure from the normal distribution, individuals reporting five or more sexual partners in the past 3 months (15% of the sample) were grouped together. The resulting scale ranged from 0 (*none*) to 5 (*five or more*) female sexual partners during the past 3 months.

Psychosocial processes—Negative relational schemas were operationalized using a composite index with two scales. Attachment style was assessed by using items adapted from the Experiences in Close Relationships Scale (ECR; Wei, Russell, Mallinckrodt, & Vogel, 2007). Although the original scale was designed to yield anxious and avoidant attachment style scores, we were unable to replicate this factor structure. Our analysis revealed a single “negative attachment style” subscale that combined both avoidant- and anxious-type items. Items from the resulting six-item scale included, “I often worry that my partner will not want to stay with me” and “I try to avoid getting too close to my romantic partners.” The response set ranged from 1 (*strongly disagree*) to 4 (*strongly agree*), and Cronbach's alpha for the total scale was .74. The second indicator, Cynical Views of Relationships (CVR), was assessed using a four-item measure used in previous research to assess relational schema (Simons et al., 2011). Items included, “Some romantic partners oppose you for no good reason” and “When romantic partners are friendly, they usually want something from you.” Cronbach's alpha for the scale was .64. Standardized scores for each scale were computed and then averaged to form a negative relational schema index.

Future expectations were assessed using the Measure of Perceived Life Chances (Jessor, Donovan, & Costa, 1990) which assessed respondents' beliefs (1 = *not sure at all*; 4 = *very sure*) that various positive events will occur in their future (e.g., having a job that pays well, having a happy family life, being respected in the community). This measure has demonstrated good internal consistency in at-risk and non-at-risk youth populations (Worrell & Hale, 2001; Worrell, Latt, & Perlinski, 1999). From the original 10-item scale, one item—likely to graduate from high school—was removed because most of the participants had already attained it. Items were summed together to create composite score for variable. Cronbach's alpha for the scale was .90.

Father involvement—Biological and social father involvement each was assessed using a three-item measure. For biological father involvement, participants were asked to report the accuracy (1 = *not true at all*; 2 = *somewhat true*; 3 = *mostly true*; 4 = *very true*) of three statements: “Growing up, I could depend on my birth father to always be there when I needed him,” “Growing up, I knew that my birth father cared about me,” and “Growing up, I spent a lot of time with my birth father.” For assessment of social father involvement, participants were first asked if there was a man who was “like a father to you growing up.” Those who responded affirmatively were asked the same three questions, with “father figure” inserted instead of “biological father.” Cronbach's alpha was .93 for biological father and .90 for social father involvement. Previous research using similar retrospective reports of parent involvement have demonstrated sound psychometric properties and predictive validity for multiple outcomes (Finley & Schwartz, 2004).

A total of 308 young men (61% of the sample) reported having a social father. To index the presence of an involved social father among all participants, we transformed social father involvement into a dichotomous variable. Participants reporting social father involvement that was at or above the median for the sample were scored “1” on the indicator. If participants reported no father figure or social father involvement below the median, they were scored “0” on the indicator. Using this scoring scheme, 41% reported having had an involved social father (described as “positive social father” in our results). Mean group comparisons on study variables indicated no significant differences between young men with low social father involvement and those with no social father involvement, thus supporting the combining of low and no father involvement groups.

Controls—Participants completed the Adverse Childhood Experiences scale (ACE; Felitti et al., 1998) which indexes the experience of 10 childhood adversities such as physical abuse, lack of family support and provision of basic needs, and witnessing violence toward one's mother. ACE scores range from 0 to 10, with higher scores indicating more adverse childhood experiences. Biological father education level, as reported by participants, was also included as a control. This item ranged from 1 (*grade 10 or below*) to 5 (*4-year college degree or more*).

Plan of Analysis

Initial analyses examined the RDS-derived network using the RDS Analysis Tool (Volz, Wejnert, Degani, & Heckathorn, 2007). The statistical theory upon which RDS is based suggests that, if peer recruitment proceeds through a sufficiently large number of waves, the composition of the sample will become independent of the seeds with whom recruitment began and thereby overcome any bias the nonrandom choice of seeds may have introduced. This stable sample composition is termed “equilibrium” and should occur within four or fewer recruitment waves. Study hypotheses were tested with structural equation modeling (SEM) using Mplus 6.11 (Muthen & Muthen, 2010). Missing data were handled using full information maximum likelihood estimation. Indirect effects were tested following procedures for multiple mediation (Preacher & Hayes, 2008). Significance levels of indirect effects were tested via bootstrapping.

Results

RDS analyses of study variables indicated that the final sample was not biased by the initial seeds' characteristics; sample equilibrium on all study variables was achieved within 2 waves of recruitment. *T*-tests comparing, across all study variables, seed participants and participants who were part of networked referral chains were non-significant, indicating the acceptability of combining seeds with recruited participants in the analyses. Thus, the results we present were derived using raw data. Table 1 presents correlations among all study variables, along with their means and standard deviations.

The test of the conceptual model with ACE and paternal education controlled on all endogenous variables is depicted in Figure 2. Biological father involvement significantly predicted both negative relational schemas and future expectations net of the influence of having a positive social father. Specifically, African American young men who reported

elevated levels of biological father involvement during childhood had heightened levels of positive future expectations ($\beta = 0.12$; $p < .01$) and reduced levels of negative relational schemas ($\beta = -0.15$; $p < .01$). The presence of a positive social father, after accounting for variability due to biological father involvement and other covariates, was associated with reduced negative relational schemas ($\beta = -0.10$; $p < .05$) but not with future expectations ($\beta = 0.04$; $p = .34$). Thus, young men with a positive social father generally had lower levels of negative relational schemas than did those without such a man in their life.

Specificity in effects was also observed for associations between the intervening psychological processes and young men's risk behaviors. After accounting for the effects of other variables in the model, higher future expectations were associated with reduced substance misuse ($\beta = -0.16$; $p < .01$) but demonstrated no effect on number of sexual partnerships ($\beta = -0.01$; $p = .76$). Conversely, negative relational schemas were associated with more sexual partnerships in the past three months ($\beta = 0.12$; $p < .05$) but did not have an effect on substance misuse ($\beta = .06$; $p = .16$).

Concerning pathways of influence, the total indirect effect (IE) occurring through both psychosocial mechanisms was significant for the pathway linking biological father involvement to substance misuse (IE = $-.01$; 95% CI $[-.016, -.003]$) as well as the pathway linking biological father involvement to sexual partnerships (IE = $-.01$; 95% CI $[-.020, -.001]$). Thus, future expectations and negative relational schemas, collectively, transmitted the effect of biological father involvement during childhood to African American men's risk behaviors during young adulthood. In contrast, for social fathers, the total IE was non-significant for both outcomes (for substance misuse, IE = $-.02$; 95% CI $[-.072, .007]$; for sexual partnerships, IE = $-.04$; 95% CI $[-.099, .000]$). Given the lack of significant total indirect effects, we then examined specific indirect effects linking social father involvement and risk behaviors. For the association between social father involvement and substance misuse, specific indirect effects through each psychological process were non-significant. For the path linking social father involvement and multiple sexual partnerships, a specific indirect effect emerged through negative relational schemas, IE = $-.04$, 95% CI $[-.100, -.003]$. To summarize, biological father involvement demonstrated significant indirect effects on both substance misuse and sexual partnerships through the collective set of future expectations and negative relational schemas. In contrast, positive social father presence demonstrated a significant indirect effect only on young men's sexual partnerships, with this effect being transmitted by social fathers' influence on negative relational schemas (see Table 2 for tabulated results).

Discussion

The current study examined the ways in which biological and social father involvement during childhood affects African American men's psychological development and engagement in risk behaviors during young adulthood. We tested a model in which biological and social father involvement predicted young men's future expectations and negative relational schemas. In turn, these psychosocial processes were hypothesized to predict African American young men's substance misuse and multiple sexual partnerships. Consistent with our expectations, we found that African American young men's reports of

biological and social father involvement during childhood each predicted relational schemas that were less mistrustful and cynical. African American men's future expectations, however, were predicted only by biological father involvement. In turn, future expectations predicted levels of substance misuse and negative relational schemas predicted multiple sexual partnerships. Indirect effect analyses indicated biological father involvement was associated with substance misuse and multiple sexual partnerships through its effects on both psychological processes; social father involvement only exhibited indirect effects on sexual partnerships, occurring through its effects on relational schema. As described subsequently, these findings provide important insights into the etiology and potential prevention of negative health outcomes among African American young men.

High levels of biological father involvement were associated with a reduced likelihood that men would have relational schemas characterized by cynicism and distrust as well as a greater likelihood that men would have positive assessments of their future and attaining life goals. These effects were present controlling for the influence of adverse childhood experiences, father educational attainment, and the presence of a supportive social father. With the majority of studies to date examining maternal influences on the development of children's relational schemas and future expectations (Kerpelman et al., 2008; Kogan, Lei, et al., 2013; McCabe & Barnett, 2000), results from the current study highlight how biological father involvement also effects the development of these psychological processes in young men. Further, these two processes collectively functioned as intervening factors through which biological father involvement was linked to young men's substance misuse and multiple sexual partnerships. This provides, to our knowledge, some of the first findings of the psychosocial pathways through which biological father involvement influences young men's risk behaviors in young adulthood.

Social father involvement also accounted uniquely for variability in young men's negative relational schemas, with men who reported a supportive and involved social father less likely to evince cynical and distrustful relational schemas compared to men without a supportive social father. Thus, experiences with caring male adults during childhood, irrespective of biological status, influenced young men's internal working models of others that, in turn, predicted men's engagement in multiple sexual partnerships. These results accord with recent findings documenting how fathering behavior during childhood influences men's romantic relationships in young adulthood (Karre, 2015) as well as how sexual risk behaviors are related to beliefs about one's partner and romantic relationship (Waldrop-Valverde et al., 2013).

Although African American young men's relational schemas were predicted by both biological and social father involvement, young men's future expectations were predicted only by biological father involvement. The underlying mechanism(s) explaining why future expectations were associated uniquely with biological father involvement require future investigation. We speculate several explanations are plausible. First, biological fathers, compared to social fathers, may focus more on the child's long-term development and consequently devote greater emphasis and socialization to their son's future aspirations and expectations. The current literature on differences in parenting by father type has focused predominantly on fathers of young children and produced mixed results, particularly in

relation to type of social father (Berger, Carlson, Bzostek, & Osborne, 2008; Bzostek, 2008; Jayakody & Kalil, 2002; Nepomnyaschy & Donnelly, 2015). Second, sons may perceive biological fathers to be more permanent in their lives than are social fathers and expect more life-long support from their biological fathers. This confidence in a biological father's ongoing presence and assistance, in turn, may instill confidence in accomplishing future life goals. Third, sons' sense of personal identity may be more closely linked to their biological fathers than to their social fathers. Consequently, involvement from competent biological fathers may be internalized by the son and foster son's confidence and self-efficacy in reaching particular adult milestones themselves (see Dishion, Owen, & Bullock, 2004 for similar discussion with respect to deviant behavior).

High future expectations were associated with lower levels of substance misuse among young African American men, consistent with previous studies examining the relationship between perceptions of one's future and current risk-taking behaviors. For instance, optimism and hope for attaining future goals are both negatively associated with risk behaviors (Bryan et al., 2004; Robbins & Bryan, 2004). Conversely, present-focused orientations and local rather than global approaches to decision making are positively associated with risk taking (Wax, 2011; Wills, Sandy, & Yaeger, 2001). The development of future expectations among African American men with uninvolved biological fathers residing in the rural South may be further impeded by restricted educational and employment opportunities in their local communities, thereby rendering them particularly susceptible to substance misuse and other activities that provide immediate, momentary relief and enjoyment despite potential long-term risk. Intervention programming designed to promote greater future planning and orientation among urban African American adolescents has demonstrated positive behavioral and attitudinal changes in participating youth (Lindstrom Johnson, Jones, & Cheng, 2015); however, empirically-evaluated interventions targeting the father-son dyad among African American men and adolescent-aged children remain scarce (for exception, see Caldwell, Rafferty, Reischl, De Loney, & Brooks, 2010)

Father involvement has previously been conceptualized and assessed as originating from biological or social fathers (e.g., Coley, 2003), yet results from the present study highlight how both types of father figures can be present in youth's lives and demonstrate unique effects on key developmental domains. With the rise in children residing apart from their biological fathers (Child Trends, 2015) and general complexity in family structures as a whole (Carlson & Berger, 2013), models depicting the effects of family relationships on children's development will require a greater degree of complexity as well. In addition to specificity of effects from different types of paternal relationships, the psychological mediators demonstrated specificity as well, with future expectations uniquely predicting substance misuse and negative relational schemas predicting HIV risk behaviors. Consequently, data collection and analytic models that examine multiple mediating effects appear useful for capturing the constellation of intervening processes that transmit the effect of an independent variable onto a particular outcome (Bryan, Schmiege, & Broaddus, 2007); moderation models can also be employed to illustrate how biological and/or social father relationships can protect African American children's development and well-being from particular risk factors (e.g., Timpe & Lunkenheimer, 2015).

Several limitations of this study should be noted and addressed in future research. First, the data are cross-sectional; therefore, causality cannot be inferred. The proposed direction of associations are supported, however, by multiple studies informed by attachment theory (Bowlby, 1969) and are consistent with emerging research on psychological processes that predict health risk behaviors (Kogan, Cho, Barnum, & Brown, in press; Waldrop-Valverde et al., 2013). Second, measures of father involvement were based on retrospective reports. Although previous work examining parental influences on children's outcomes in young adulthood has emphasized the advantages of retrospective measures that provide subjective (rather than objective) assessments of parental relationships (Finley & Schwartz, 2004), the potential for inaccurate recall could reduce the reliability of this type of measurement. Concerns of inaccurate recall are also reduced given findings documenting no bias between retrospective and prospective reports of adverse childhood experiences (Hardt, Vellaisamy, & Schoon, 2010). Third, we focused on father involvement as a global concept. Some authors advocate examinations that parse aspects of involvement quality and quantity (Brown, Mangelsdorf, & Neff, 2012). Future longitudinal research assessing multiple dimensions of father involvement and their effects on trajectories of young adult risk behavior appear warranted. Fourth, the presence of a social father during childhood was asked globally; as such, future research appears warranted that examines how the length of the relationship with one's social father or the development stage(s) during which the social father is present affects children's development. Finally, it is not known whether results generalize to female African Americans or to individuals of other ethnicities who reside in either rural or urban communities. As children of all ethnicities increasingly live apart from their biological fathers (Child Trends, 2015), research with multiethnic samples is needed to examine the developmental consequences of low father involvement as well as potential ethnic and gender differences in the processes through which father involvement—both biological and social—affect youth development and well-being.

These limitations notwithstanding, the present study advances scientific understanding of childhood experiences that affect African American men's well-being during early adulthood. In particular, the study draws attention to the specific effects of biological and social father involvement during childhood on African American men's psychological development, which in turn affects their behaviors as young adults. Such findings also inform prevention programs for rural African Americans by identifying distal (biological and social father involvement) and proximal (maladaptive psychological processes) factors that influence vulnerability to risk behaviors in young adulthood. The results suggest that efforts to promote positive father involvement, particularly from biological fathers, can confer multiple benefits on young African American men residing in the rural South.

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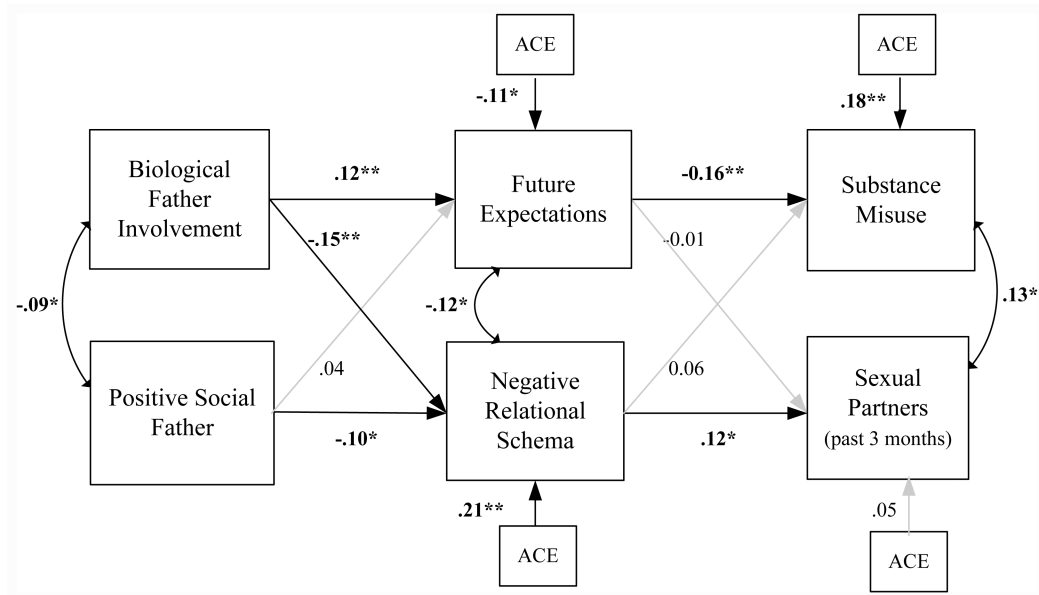


Figure 1. Structural equation model results. The model is fully saturated. Paternal education (not shown) also was included as a control for endogenous variables; paternal education significantly predicted negative relationship schema ($\beta = -0.145 [SE = 0.047]$; $p < .01$), but did not significant predict any other endogenous variables. Direct effects from biological father involvement and from positive social father to each risk behavior outcomes also are not shown (all p s $> .05$). Correlations for endogenous variables occur with error terms.

Table 1
Correlation Matrix and Descriptive Statistics for Study Variables (N = 505)

	1	2	3	4	5	6	7	8
1. Substance misuse	---							
2. Multiple sexual partnerships	.158**	---						
3. Future expectations	-.199**	-.044	---					
4. Negative relational schema	.129**	.136**	-.165**	---				
5. Biological father involvement	-.113*	-.055	.139**	-.209**	---			
6. Positive social father ^a	.028	-.077 [†]	.036	-.101*	-.094*	---		
7. Adverse childhood experiences	.213**	.086 [†]	-.136**	.264**	-.208**	-.050	---	
8. Paternal education	.024	.031	.042	-.204**	.143**	.072	-.132**	---
<i>M</i>	0.00	2.20	31.67	0.00	7.34	0.41	2.82	3.14
<i>SD</i>	0.90	1.56	5.11	1.74	3.45	NA	2.97	0.96
Minimum	-0.72	0.00	9.0	-5.05	3.0	0	0.0	1.0
Maximum	3.33	5.00	36.0	5.10	12.0	1	16.0	5.0
Percent missing	0.0	6.7	0.0	0.0	0.4	0.0	0.4	20.8

Note. Descriptive statistics reflect pairwise deletion. NA = Not applicable to a dichotomous variable.

^a 1 = yes, 0 = no.

[†] $p < .10$.

* $p < .05$.

** $p < .01$.

Table 2

Summary of indirect effects

	Total Indirect Effect		Specific Indirect Effect			
			Through PLC		Through NRS	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
<i>Independent Var. ->Dependent Var.</i>						
Biological Father - > Sub Misuse	-008	[-.016, -.003]	-0.005	[-.012, -.001]	-.003	[-.008, .001]
Biological Father - > SXP	-009	[-.020, -.001]	-.001	[-.007, 0.004]	-.008	[-.019, -.002]
Pos. Social Father - > Sub Misuse	-.024	[-.072, .007]	-0.012	[-.048, 0.011]	-.011	[-.041, .003]
Pos. Social Father - > SXP	-.038	[-.099, .000]	-.002	[-.032, 0.011]	-.036	[-.100, -.003]

Note. SXP = Sexual Partnerships. FE = Future expectations. NRS = Negative relational schemas. CI = Confidence Interval