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Health Protective Effects of Attachment Among African American Girls in Psychiatric Care

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Abstract

African American (AA) girls in psychiatric care are at increased risk for HIV and STI infection through sexual risk taking. Adolescent sexual behavior often reflects peer norms and behavior. Secure attachment patterns with mothers and peers might lessen the effects of negative peer influences and reduce sexual risk taking among AA girls. This study examined the relationships among mother-daughter and peer attachment, peer norms, and sexual risk behaviors in African American girls seeking outpatient psychiatric care. Two hundred and sixty two 12 – 16 year-old African American girls ($M_{age} = 14.45$ years) reported on their attachment to their mothers and peers, peer risk taking and dating behaviors, peer pressure, and sexual risk behaviors (number of partners, high risk partners, condom use). Structural equation modeling examined whether peer attachment and peer norms mediated the relationship between mother attachment and sexual risk. Findings supported peer norms, but not peer attachment, as a mediator of mother attachment and girls' sexual risk behavior. Findings revealed important family and peer factors for African American girls in psychiatric care. HIV prevention programs may be strengthened by improving mother-daughter relationships, addressing the importance of peer relationships, and emphasizing how secure mother-daughter relationships can temper the impact of peer norms.

Keywords

attachment; sexual risk; African American girls; mother-daughter relationships; peer norms

African American girls in psychiatric care are at disproportionate risk for HIV/AIDS and other sexually transmitted infections (STIs). The rate of HIV infection among African American girls is eleven and four times that of Caucasian and Latina girls respectively (Centers for Disease Control and Prevention [CDC], 2010). Relative to other ethnic groups, African American girls tend to initiate sex earlier, report higher rates of sexual activity during adolescence (CDC, 2000; Dancy, Crittenden, & Ning, 2010; Murry, 1996), and account for the highest rates of chlamydia and gonorrhea (CDC, 2009). African American girls in psychiatric care are at even greater risk because teens with mental health problems report more sexual risk-taking than do their non-troubled peers (Donenberg & Pao, 2005).

Sexual activity can also impact mental health, possibly resulting in poorer psychosocial functioning and depression (Davila et al., 2009). Despite elevated risk profiles, few if any studies focus specifically on African American girls receiving psychiatric services. Identifying factors associated with sexual risk among African American girls in psychiatric care is essential to reducing their risk of HIV/STIs.

Understanding the factors associated with HIV/STI-risk among teens with mental health problems requires a broad social-personal framework that recognizes the interplay of personal attributes, family context, and peer and partner relationships (Donenberg & Pao, 2005). Guided by a social-personal framework, this study explored three mechanisms that may be associated with sexual behavior among African American girls in psychiatric care: attachment to mothers, attachment to peers, and perceived peer norms. Research emphasizing both family and peer factors is important to consider in prevention programming for youth and may point to strategies that lead to more sustained positive outcomes.

Attachment, in the broadest sense, is an emotional bond that functions to provide safety and security to an individual (Bowlby, 1973; Markiewicz, Doyle, & Brendgen, 2001). Attachment theory postulates that early relationships with primary caregivers form the basis for future close relationships, including relationships with peers and romantic partners (Bowlby, 1973). Responsive and consistent caretaking leads to secure attachment models allowing children to view others as safe, reliable, and trustworthy (Ainsworth, 1973). Secure attachment models lead to relationships that are trusting and open, and free of alienation (Gullone & Robinson, 2005). Secure parent-child attachment is consistently related to positive child and adolescent outcomes, including fewer mental health problems (Egeland & Carlson, 2004). For example, depressed adolescents report less secure parent and peer attachment than their non-depressed counterparts (Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990). Few if any studies exist, however, examining mother-daughter attachment or peer attachment patterns among African American girls in psychiatric care.

There is an abundance of literature linking quality of parent-child relationships to adolescent sexual risk-taking (Kotchick, Shaffer, Miller, & Forehand, 2001), and this literature extends to African American adolescents (Aronowitz, Rennells, & Todd, 2005). For example, African American girls who report more family support are less likely to have unprotected sex and more likely to communicate with their partners about sexual risk (Crosby et al., 2001). Similarly, the Strong African American Families (SAAF) program, which promotes positive parent-child relationships, has been successful in reducing risky sexual behavior in African American adolescents (Brody et al., 2006). Attachment is closely related to and overlaps with other aspects of parent-child relationship quality, such as support, warmth, and closeness, but is a distinct theoretically grounded construct linking parental relationships to peer and romantic relationships. Essentially, attachment represents an internalized perception of security in relationships, which may have particularly important implications for practicing safe-sex behavior such as condom use.

The literature is mixed, however, regarding the relationship between parent-child attachment and adolescent sexual risk. Studies of parental attachment have largely been conducted with middle-class Caucasians (Love, 2008), and less is known about African Americans and African American girls specifically. One study with a mostly Caucasian sample found that girls who had more than one sexual partner and rarely or never used contraception reported less attachment to parents (Luster & Small, 1994). By contrast, another study with a similar sample did not find a link between attachment to parents and girls' sexual risk-taking (Rodgers, 1999). We found only one study examining attachment relationships among African American mothers and daughters. Moore and Chase-Lansdale (2001) found that

African American girls with a pregnancy experience reported less attachment to their mothers.

Far more work is needed to understand the links between African-American mother-daughter attachment and girls' sexual risk-taking. Indeed, parental attachment may be particularly relevant for African American families, whose culture ascribes to a collectivistic, extended family structure that emphasizes cohesion, support, and intimacy (Love, 2008). African Americans tend to report closer, more intimate, and more secure relationships with their parents than do their Caucasian counterparts (Love, 2008). African American girls describe the mother-daughter relationship as their most important relationship and mothers as their primary source of support (Cauce et al., 1996). Girls report that mothers are the key person preparing them for adulthood (Stevens, 2002) by providing information about health, sexuality, and HIV prevention (McKay et al., 2000). Hence, African American mothers are in a unique position to foster healthy sexual decision-making in their daughters. Still, little is known about how mother-daughter attachment may be associated with health outcomes among African American girls in psychiatric care whose family relationships are often strained and maladaptive (Brown, Danovsky, Lourie, DiClemente, & Ponton, 1997).

Parent-child relationships serve as important models for children's peer interactions. Parents guide youths' selection of friends (Smetana, Campione-Barr, & Metzger, 2006), and secure parent-child attachment may forecast more healthy peer and romantic relationships (Cassidy & Shaver, 1999). Among ethnically diverse high school students, Furman, Simon, Shaffer, and Bouchey (2002) found that attachment to parents was correlated with students' attachment to friends, and attachment to friends was linked to attachment to romantic partners. Evidence also suggests that peer attachment mediates the association between youths' attachment to parents and attachment to romantic partners (Furman et al., 2002). Unfortunately, few studies address these issues among minority youth (Way & Chen, 2000). Way and Chen (2000) found a link between family and peer support among African American girls, providing partial evidence for attachment theory among minority youth, but no studies have been conducted examining parent and peer attachment among African American girls in psychiatric care. Similarly, published research on mother-daughter attachment and girls' perceived peer normative behavior is limited. One study documents perceived peer norms to engage in risk as a mediator of the relationship between parental permissiveness and risky sexual behavior among girls in psychiatric care (Wilson, Emerson, & Donenberg, 2001).

Peers and perceived peer norms are a critical context for developing romantic relationships (Smetana et al., 2006) and sexual behavior (Kotchick et al., 2001). Few studies focus on peer attachment and teen sexual behavior, especially among African American girls in psychiatric care. However, positive peer relationships, peer support, and attachment to friends are associated with greater psychological well-being (Way & Chen, 2000), and may protect girls from unsafe sexual behavior (Wolfe, Jaffe, & Crooks, 2006). Studies assessing the influence of peer norms and the perception of peers' attitudes and behaviors suggest that perceived friends' risk behavior (drug/alcohol use and sex) and attitudes are correlated with teens' sexual risk (Kotchick et al., 2001). African American teens who report having friends who engage in high-risk sexual behaviors also report engaging in high-risk sexual behaviors themselves (Black, Ricardo, & Stanton, 1997; Millstein & Moscicki, 1995). Associating with friends who use drugs is related to a higher probability of having sex (Mandara, Murray, & Bangi, 2003). African American girls who perceived their peers as engaging in sexual risk-taking reported increased sexual risk-taking themselves (Bachanas et al., 2002), and among youth in psychiatric care, risky peer norms were associated with more risky sex (Donenberg, Emerson, Bryant, Wilson, & Weber-Shifrin, 2001).

This study extends previous research in several ways. First, we focus specifically on African American girls and their mothers to evaluate whether previous findings on middle class European Americans extend to these families. Second, we assess three important constructs related to risk taking in prior research, namely attachment to parents, attachment to peers, and peer norms. Third, we report on a uniquely high-risk subgroup of youth, those in psychiatric care, because they report higher rates of the same risk behaviors as their peers. Hence, greater understanding is needed to address their specific needs.

We examined associations among attachment to mothers, attachment to peers, perception of peer norms, and risky sexual behavior among urban African American girls seeking mental health treatment. We hypothesized (see Figure 1): (1) Secure mother-daughter attachment would be related to secure peer attachment, less risky peer norms, and lower rates of risky sexual behavior among girls; (2) Secure peer attachment would be related to less risky sex; (3) Greater perceived peer risk would be associated with more sexual risk; and (4) Peer attachment and peer norms would correlate with each other. We tested two pathways to reduced sexual risk taking: (a) secure maternal attachment would be related to secure peer attachment leading to less risky sexual behavior, and (b) secure maternal attachment would be linked to less risky peer norms leading to less sexual risk taking. There may be bidirectional associations between these constructs (Zimmer-Gembeck & Helfand, 2008). For instance, involvement in risky behavior may lead to affiliation with risky peers. Our intent, however, was to test a model that predicts sexual risk as the outcome in order to provide guidance for prevention programming.

Method

Overview

This study is part of a larger longitudinal study of HIV-risk behavior among 266 African American girls seeking outpatient mental health services. Eligible mother-daughter (“mothers” refers to all female caregivers) dyads were recruited from eight mental health clinics in urban Chicago. Clinic staff obtained the family’s permission to forward their contact information to research staff. Girls identified by clinic staff as cognitively delayed ($n = 6$) or wards of the Illinois Department of Child and Family Services ($n = 3$) were excluded from the study. Mothers and daughters provided written informed consent and assent. Eighty-two percent of the families invited to participate enrolled in the study. Participants were interviewed five times over 2 years and completed ACASI (Audio Computer Assisted Self Interview) administered self-report surveys. This study focused on girls’ reports of attachment to mothers and peers, peer norms, and girls’ sexual behavior. All study procedures were approved by the University of Illinois at Chicago’s Institutional Review Board.

Participants

Participants were 262 12 – 16 year old ($M_{age} = 14.45$; $SD = 1.15$) African American girls with complete data. Approximately 83% of families scored in the first three levels of the Hollingshead index (Hollingshead, 1975), indicating low to middle incomes. Most caregivers were biological mothers (73%) and grandmothers (15%), followed by adoptive mothers (5%) and aunts (3%). The majority of the female caregivers in this study considered themselves single parents (73%), about half reported that they had extended family support, and 64% of girls had a male caregiver present in their lives.

A little over half of the girls recently sought counseling (53%), 7% were on a waitlist for services, 2% had scheduled an appointment, and 38% were actively receiving services. Among the girls receiving services ($n = 100$), 88% were involved in individual counseling,

47% had family therapy, 30% reported group therapy, 45% indicated medication management, 27% reported case management, and 23% were in day treatment. Most of the girls in counseling received more than one treatment modality.

Girls' mental health was evaluated with a structured diagnostic interview as well as symptom ratings. Girls and their mothers each completed select sections of the Computerized Diagnostic Interview Schedule for Children (Shaffer, Fisher, Piacentini, Schwab-Stone, & Wiks, 1991). Girls reported symptoms related to major depressive disorder, conduct disorder, and post-traumatic stress disorder. Mothers completed these same sections about their daughters as well as attention deficit hyperactivity disorder. Consistent with methods used by Brown et al. (2010), 66% of the girls met subthreshold or threshold criteria for a psychiatric diagnosis. Eleven-percent of the girls qualified for conduct disorder, 5% PTSD, and 3% major depressive disorder. Mothers' report of their daughters' symptomatology was similar; 12% met criteria for conduct disorder, 3% qualified for PTSD, 8% met criteria for MDD, and 9% qualified for ADHD.

Symptom ratings (Achenbach, 1991a, 1991b) revealed higher rates of distress; 20% of youth self-reported clinically significant internalizing problems ($T > 63$) and 32% endorsed clinically significant externalizing problems. Mothers reported that 34% and 51% of girls reached clinically significant levels of internalizing and externalizing problems respectively.

Measures

Attachment to mother and peers—The *Inventory of Parent and Peer Attachment* (IPPA; Armsden & Greenberg, 1987) measured girls' relationships with mothers and peers as sources of psychological security and attachment. Sample items are "My friends/mother accepts me as I am," and "I can tell my friends/mother about my problems and troubles." Higher scores on the IPPA represent secure attachment, more mutual trust and open communication, and less alienation. Internal consistency was strong for attachment to mothers ($\alpha = .93$) and attachment to peers ($\alpha = .90$). The IPPA has shown substantial reliability and strong potential validity for measuring attachment for the developmental period of mid-late adolescence (Armsden & Greenberg, 1987).

Peer norms—A latent factor of peer norms was created using three individual indicators: *negative peer influence*, *girlfriend dating behavior*, and *likelihood of peer pressure*. Higher scores on these scales reflect more risky peer norms. (1) *Negative Peer Influence* consists of 6 items measuring peer support and approval of high-risk behavior, including drinking alcohol, smoking marijuana, smoking cigarettes, and having sex. Higher scores indicate more peer drug use, approval of drug use, and sexual intercourse. Items are from a widely used measure of adolescent health behavior (Costa, Jessor, Fortenberry, & Donovan, 1996; Jessor & Jessor, 1977) and the scale has been associated with risky sex among teens in outpatient psychiatric care (Donenberg et al., 2001). The scale's internal consistency was strong ($\alpha = .85$). (2) *Girlfriend Dating Behavior* includes 8 items measuring girls' friends' dating behaviors (e.g., flirting, dressing in sexy clothes, kissing, having sex). Items were adapted from the Health Questionnaire (Jessor & Jessor, 1977; Jessor & Jessor, 1975), with higher scores indicating a greater number of girlfriends who date. Internal consistency was strong ($\alpha = .85$). (3) The *Likelihood of Peer Pressure* includes 7 items assessing the likelihood that friends would pressure them to engage in risky activities, such as skip class, smoke cigarettes, drink alcohol, use drugs, and have sex (R. Paikoff, personal communication, 1998). Higher scores indicate more pressure. Internal consistency was strong ($\alpha = .87$).

Risky sexual behavior—The *AIDS Risk Behavior Assessment* (ARBA; Donenberg et al., 2001) is a computerized self-administered interview designed for use with adolescents to assess their self-reported sexual behavior, drug/alcohol use, and needle use associated with HIV infection. The ARBA uses a skip structure so that more detailed items do not follow initial screening questions answered in the negative. We examined three items representing HIV-risk behaviors: (1) number of sexual partners during the last 6 months; (2) number of high-risk vaginal sex partners (partners at least 2 years older); and (3) condom use defined by a single item, “How often do you and your partner use condoms/latex protection during vaginal sex?” with scores ranging from 1 (has never had vaginal sex) to 6 (never used condoms). These items were used to create a latent factor; higher scores indicate greater sexual risk. Girls were instructed to refer to sex that was wanted or unwanted.

Analyses

Structural equation modeling was conducted with Mplus 5.1. The measurement model included latent factors for peer norms (comprised of peer pressure, negative peer influence, and girlfriend dating behavior) and risky sexual behavior (comprised of number of sexual partners, safe sex, and number of older partners). Mother attachment and peer attachment were single observed variables, allowed to correlate with peer norms and risky sexual behavior. The structural model predicted risky sexual behavior from mother and peer attachment and peer norms (see Figure 1). We evaluated overall model fit using multiple indices (Kline, 2005), including Chi-Square, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR). Cross-sectional data cannot support causal effects, but the conceptual model provides a theoretical framework for understanding model relationships (Hoyle & Smith, 1994).

Results

Descriptive Statistics

Almost one-third of the girls reported vaginal, anal, and/or oral sex at baseline (32.4%; $n = 85$), and 31% reported vaginal sex. Among girls who have had vaginal sex, 52% reported age at first vaginal sex at or below 13 years and a little under half (43%) reported inconsistent condom use during vaginal sex. Twenty-five percent of sexually experienced girls reported two or more partners in the last six months, and 74% had sex with a partner whose sexual history was unknown or someone who was more than 2 years older. About one quarter of the sexually active girls (27%) had sex while drinking or using drugs, 12% used drugs or alcohol at last sex, and 34% of girls reported not using a condom at last sex.

Table 1 presents the means, standard deviations, and zero order correlations among the variables. Correlations between individual indicators of peer norms and of risky sexual behavior supported latent factors. Maternal and peer attachment were positively related to each other. Positive maternal and peer attachment were related to less peer pressure and negative peer influence. Positive maternal attachment was associated with less girlfriend dating behavior, fewer older partners, and increased condom use. Positive peer attachment was also related to increased condom use. Negative peer influence was linked to more partners and older partners, and less condom use. More girlfriend dating behavior was associated with greater sexual risk.

Measurement Model

Tests initially revealed significant departures from univariate normality for each of the outcome variables included in the model. Accordingly, we used maximum likelihood estimation with robust standard errors and a mean-adjusted Chi-Square (MLM) to compute

the Satorra-Bentler Chi-Square (Kline, 2005). The measurement model yielded an adequate fit to the data (Chi-Square = 21.42, $df = 17$, $p > .10$; RMSEA = .03; CFI = .98; TLI = .97; SRMR = .05). Factor loadings for the latent constructs were significant (see Table 2). Correlations among the variables supported the latent factor of peer norms as a potential mediator of the relationship between maternal attachment and risky sexual behavior: maternal attachment was significantly correlated with peer norms ($r = -.26$; $p < .001$) and with risky sex ($r = -.22$; $p < .01$), and peer norms was correlated with risky sex ($r = .61$; $p < .001$). Maternal attachment was also significantly related to peer attachment ($r = .38$; $p < .001$), but peer attachment was not significantly correlated with risky sexual behavior ($r = -.10$; $p > .10$).

Structural Model

The structural model depicted in Figure 2 tested two mediational pathways examining whether: 1) peer attachment mediated the relationship between maternal attachment and sexual risk; and 2) peer norms mediated the relationship between maternal attachment and sexual risk. Peer attachment and the latent factor for peer norms were allowed to correlate. Age and whether the adolescent was currently in psychiatric treatment (1 = yes; 0 = no) were used as covariates by including their relationships with risky sex, peer norms, and peer attachment in the analyses.

The model yielded a good fit (Chi-Square = 28.65, $df = 24$, $p > .10$; RMSEA = .03; CFI = .99; TLI = .98; SRMR = .04). Figure 2 provides the standardized regression coefficients in the model. In the multivariate model, mother-daughter attachment was negatively correlated with peer norms, peer norms was positively related to risky sexual behavior, and the direct relationship between mother-daughter attachment and risky sexual behavior was no longer significant. Mother-daughter attachment was positively associated with peer attachment, but peer attachment was not associated with risky sex. There was a small but non-significant negative correlation between peer attachment and peer norms. The model explained 39% of the variance in girls' risky sexual behavior. Consistent with MacKinnon's (2008) recommendations for testing mediation, total indirect effects were significant ($-.18$, $z = -3.45$, $p < .01$), and the indirect pathway from mother-daughter attachment to risky sex via peer norms was also significant ($-.15$, $z = -3.40$, $p < .01$). The indirect pathway from maternal attachment via peer attachment was not significant ($-.02$, $z = -.92$, $p > .10$). Thus, peer norms, but not peer attachment, mediated the relationship between maternal attachment and risky sex.

Since mother-daughter attachment reflected girls' reports of attachment to different types of female caregivers (e.g., biological mothers, grandmothers, etc.) we conducted a one way Analysis of Variance (ANOVA) to compare biological mothers ($n = 192$) and other female caregivers ($n = 70$) on mean levels of study variables (age, attachment to mother and peers, negative peer influence, peer pressure, girlfriend dating behavior, and sexual risk). No significant differences between biological mothers and other female caregivers were found. We also tested the structural model restricting the sample to biological mothers only, and results were consistent with the full sample indicating no significant difference when other female caregivers were included in the analysis.

Discussion

Despite significant disparities in mental illness, STIs, and HIV/AIDS, little is known about protective factors associated with less sexual risk taking among African American girls in psychiatric care. This study offers new insight into the unique and combined relationships of peer norms, mother-daughter attachment, peer attachment, and girls' HIV/STI-risk. Findings

provide evidence that mother-daughter attachment is linked to perceived peer norms and girls' sexual risk taking and highlight the role mothers may play in prevention programming.

Results from our structural model were somewhat consistent with previous research and theory and partially support our hypotheses. Stronger mother-daughter attachment was related to less perceived peer risk behavior, and more secure attachment to mothers was related to more secure attachment to peers (Furman et al., 2002; Smetana et al., 2006) suggesting that prior studies on European Americans may extend to African American mother-daughter relationships. Consistent with earlier research with youth in psychiatric care (Donenberg et al., 2001), findings revealed strong links between peer norms of increased risk taking and girls' high-risk behavior. Contrary to earlier research with African American girls, we found no direct relationship between mother-daughter attachment and sexual risk (Moore & Chase-Lansdale, 2001). Differences in the findings across studies may reflect the uniqueness of our sample, a slightly younger sample than Moore and Chase-Lansdale's (2001) and girls in psychiatric care, or document the lack of consistency in the literature. Previous research is unclear regarding the link between parent-child attachment and teen sexual risk behavior, and mother-daughter attachment patterns may be different for girls in psychiatric care (Brown et al., 1997).

An examination of specific mediating pathways indicated an indirect effect of mother-daughter attachment and sexual risk through peer norms. Hence, findings suggest that secure mother-daughter relationships are linked to girls' risk through fewer associations with risky peers. It is equally noteworthy that peer attachment was neither directly nor indirectly related to girls' sexual risk, and peer attachment did not mediate the relationship between maternal attachment and risk. It may be useful to examine the interaction between peer attachment and peer norms. Girls who are attached to peers who engage in risk behavior may be more likely to engage in sexual risk-taking themselves (Kirby, 2001).

Causal assertions cannot be made due to the correlational nature of this study. It may be that girls who are involved in more risky behavior tend to affiliate with riskier friends, rather than risky friends leading to risk behavior. Bidirectional relationships may even exist whereby individual and peer group risk behavior reciprocally influence each other. Nonetheless, our findings reinforce the key role that African American girls' mothers and peer groups play in their sexual behavior. These findings add support to a social-personal model for understanding risk behavior among adolescents in psychiatric care. They also have implications for HIV prevention by underscoring the importance of mother-daughter relationships in reducing negative health outcomes for girls.

Correlations between study variables yielded interesting relationships. For example, mother-daughter attachment was not directly related to girls' sexual risk in the structural model, but secure attachment to mother was correlated with increased condom use and fewer older partners but not the number of sexual partners. These correlations suggest that the relationship between mother-daughter attachment and sexual risk is more complex and depends on the type of sexual risk behavior assessed. This complexity may also explain why parent-child attachment is inconsistently related to adolescent sexual risk-taking in previous research. Correlations also revealed associations between secure attachment to peers on the one hand, and decreased likelihood of perceived peer support of risk behavior (negative peer influence), less peer pressure to do risky things, and increased condom use on the other hand. These findings are consistent with evidence that having healthy and positive peer relationships is related to better psychological outcomes (Way & Chen, 2000), and may provide the foundation for healthy decision making. Future research would benefit from clarifying the link between attachment to peers, other risk behaviors, and peer normative behavior. For example, peer attachment was not related to girlfriend dating behavior, a

similar construct to negative peer influence. Alternatively, girls who perceived that their friends would pressure them into risky behavior also reported that their friends engaged in risk-taking and dating behaviors. Inconsistent with previous research (Raffaelli & Crockett, 2003), peer pressure to engage in risk-taking was not correlated with girls' sexual risk. These data provide further evidence that among African American girls seeking psychiatric services, relationships with peers and female caregivers, perceived peer behaviors, and peer pressure are important variables to consider in STI/HIV prevention programming.

Findings in this study suggest that attachment to parents and peers may be related to girls' sexual behavior in several ways. First, secure parent-child relationships may be associated with less risk taking, because girls want to avoid familial conflict and disapproval that may result from these activities (Donenberg, Wilson, Emerson, & Bryant, 2002). Second, secure parent-child relationships may establish a foundation for secure peer relationships and influence positive friendship choices (Smetana et al., 2006). On the other hand, insecure parent-child relationships may foster poor adolescent health outcomes (Egeland & Carlson, 2004), impacting teens' peer relationships (Schneider, Atkinson, & Tardif, 2001). Third, parent-child attachment may shape girls' expectations for positive romantic relationships (Furman et al., 2002; Furman & Wehner, 1997) leading them to choose lower risk partners. A secure parent-child relationship may reflect open, receptive, and comfortable communication between parents and teens about sexual topics, which in turn may enable girls to communicate effectively with their partners about using condoms. By contrast, poor parent-child attachment may lead to feelings of insecurity and rejection in later intimate relationships (Furman, 2002), and girls may be less willing to delay sexual activity or insist on safe-sex measures, such as condom use, if it risks partner conflict or loss. Moreover, these girls may turn to romantic partners for support and warmth that is missing at home (Moore & Chase-Lansdale, 2001). Finally, strong and secure peer relationships may also impact girls' choice of friendships and romantic relationships (Smetana et al., 2006). Girls who have friendships that are warm, trusting, and open, may not befriend peers who engage in risk behavior and pressure them to do risky things, or choose partners who are risky themselves (Bouchey & Furman, 2003).

Findings should be considered in the context of study limitations. First, broader contextual factors such as poverty, discrimination, drug use, ratio of men to women, incarceration rates, and racial segregation all influence sexual behavior through a variety of mechanisms (Adimora & Schoenbach, 2005). This study focused on three relationship considerations, and it is likely that inclusion of these additional factors would strengthen the research's explanatory value. Future research should examine larger systematic societal forces, such as racism and oppression, in relation to individual risk and relationships.

Second, findings may not generalize beyond African American girls seeking psychiatric services. Still, African American girls' heightened risk for HIV/STIs makes these girls an important sample to understand and prevent negative health outcomes. Third, the cross-sectional data prevent causal interpretations. Longitudinal studies are needed to clarify the direction of effects among mother-daughter attachment, peer attachment, peer norms, and girls' risky sexual behavior. Fourth, these data represent girls' self-reported sexual behavior and perceived attachment. Research in the future would be strengthened by including additional informants (e.g., mothers' assessment of attachment), direct observations of mother-daughter interactions, and reports from the adolescent's peers of their own behavior. Fifth, the sexual behavior questions asked girls to report on "sex that was wanted or unwanted" because in both cases, girls are at risk for STI/HIV transmission (the outcome of the larger study). It is possible that some of the experiences reported by girls were coercive. Sixth, even though the measures used displayed adequate internal reliability, construct

validity of peer norm constructs and self-reported sexual behavior variables should be tested further.

This study highlights several directions for future research, in addition to the ones listed above. Understanding the developmental patterns of parent/peer attachment and their relations to peer norms in younger girls through adolescence would provide useful information for prevention programming, especially since over half the sample had vaginal sex before age 13. Furthermore, constructs not included in this study may act as additional risk and protective factors for African American girls' sexual behavior, such as desire for intimacy and influence of romantic partners, mothers' risk behaviors, and girls' attachment to fathers. Literature is increasingly focusing on the importance of father-daughter relationships and daughter's sexual decision making (Katz & Van Der Kloet, 2010). These constructs, as well as examining longitudinal developmental patterns, could lend additional insight into important factors related to risk.

High rates of STIs and HIV among African American females demand innovative and effective interventions, especially for African American girls in psychiatric care whose risk is compounded by factors associated with mental health problems (Donenberg & Pao, 2005). This study identified two patterns that can guide prevention programs for this at-risk population. First, both family (mother-daughter attachment) and peer (peer norms and peer attachment) factors were correlated with self-reported sexual behavior of African American girls in psychiatric care, and second, mother-daughter attachment patterns helped explain the relationship of peer norms and girls' risky sex. These data are particularly noteworthy because youth with mental health problems generally have family relationships that are strained and unhealthy (Brown et al., 1997). Our results underscore the benefit of strengthening mother-daughter relationships, which may in turn help girls choose peers and romantic partners that engage in healthy, rather than health-compromising behaviors. Working together, mothers and daughters may be able to stem the tide of STIs and risk for HIV/AIDS among African American females in psychiatric care.

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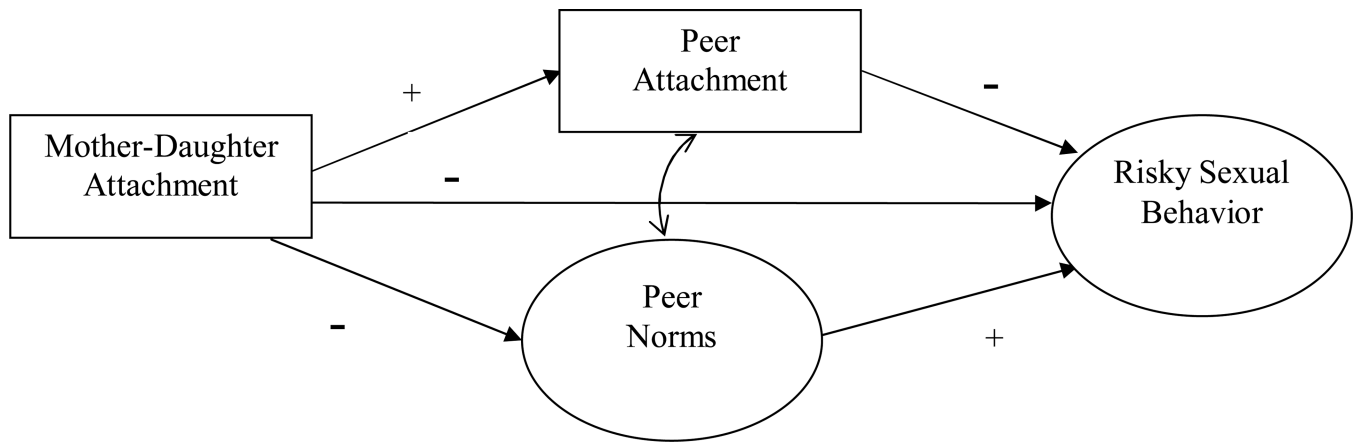


Figure 1. Full theoretical model with predicted direction of relationships

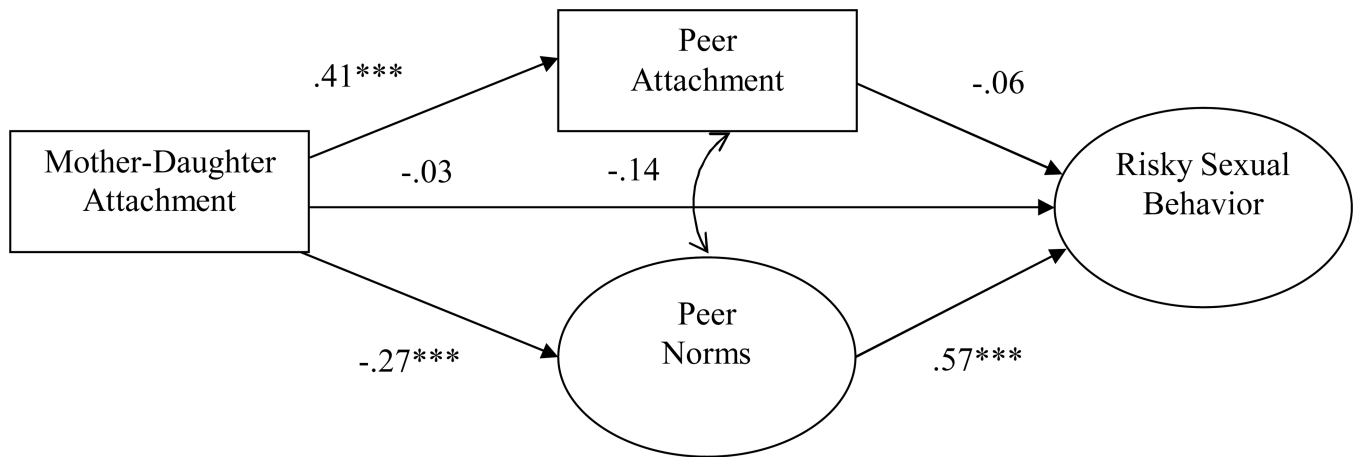


Figure 2.
Standardized parameter estimates of the structural model
*** $p < .001$

Table 1

Zero order correlations and descriptive statistics, n = 262

	1	2	3	4	5	6	7	8
1. Mother Attachment	1.00							
2. Peer Attachment	.41***	1.00						
3. Peer Pressure	-.16**	-.17**	1.00					
4. Negative Peer Influence	-.26***	-.17**	.21***	1.00				
5. Girlfriend Dating	-.26***	-.06	.23***	.68***	1.00			
6. Number of Sexual Partners	-.12	-.11	.05	.23***	.20**	1.00		
7. Safer Sex	-.20**	-.14*	.05	.44***	.35***	.38***	1.00	
8. Number of Older Partners	-.13*	-.08	.01	.33***	.31***	.35***	.45***	1.00
<i>M</i>	92.26	97.82	1.50	11.57	17.52	.60	1.65	.65
<i>SD</i>	20.03	15.60	.65	3.97	5.28	2.44	1.28	2.08

* p<.05

** p<.01

*** p<.001

Table 2

Measurement model standardized regression coefficients

	Beta
Peer Norms	
Peer Pressure	.25***
Negative Peer Influence	.85***
Girlfriend Dating Behavior	.80***
Risky Sexual Behavior	
Number of sexual partners	.50***
Safe Sex	.75***
Number of older partners	.61***

 $p < .001$