



Published in final edited form as:

Child Adolesc Social Work J. 2014 December ; 31(6): 559–575. doi:10.1007/s10560-014-0338-4.

Direct and Indirect Effects of Maternal and Peer Influences on Sexual Intention among Urban African American and Hispanic Females

Anamika Barman-Adhikari

School of Social Work, California State University, Fresno, CA, USA

Julie Cederbaum

School of Social Work, University of Southern California, Los Angeles, CA, USA

Chelsea Sathoff and Rosa Toro

School of Social Work, California State University, Fresno, CA, USA

Abstract

Peer and family influences are interconnected in complex ways. These influences shape adolescent decision-making regarding engagement in sexual behaviors. Evidence indicates the more proximal (and direct) a process is to an individual, the more likely it is to affect his/her development and behavior. Therefore, family factors (e.g., parenting practices) and peer influence (e.g., peer norms) tend to be more strongly associated with adolescent behavior than distal factors (e.g., media or the economy). Guided by an ecological framework, this study explored how maternal influence variables interact with perceptions of peer influence to affect daughters' intentions to have sex. A nonprobability sample of 176 mother-daughter dyads was recruited in clinics and service organizations in the northeastern United States. Results from path analysis revealed that maternal influence variables had a significant indirect relationship with daughters' intentions to have sex through daughters' perceptions of peer influence. Maternal processes can act as protective factors for adolescent girls who perceive their peers are engaged in sexual behaviors. Therefore, risk reduction interventions with adolescents should include opportunities for parents to learn about sex-related issues and develop skills that will allow them to buffer negative peer influence.

Keywords

Sexual intention; Mother–daughter relationship; Minority families; At-risk youth

Sexual Risk among Urban Female Adolescents

In the United States (U.S.), 47.4 percent of high school teenagers have had sexual intercourse (CDC 2012a) and an estimated three million teenagers acquire a sexually transmitted infection (STI) each year (CDC 2012b). Black and Hispanic youth are disproportionately affected; particularly urban adolescent females (CDC 2012b). Birth rates

also vary by race/ethnicity, with Hispanic and Black girls giving birth at disproportionate rates (Martin et al. 2013). This may be due, in part to early sexual debut. Black and Hispanic students are more likely than White students to report sexual intercourse before the age of 13 (15, 7, and 3 %, respectively) and more likely to report four or more sex partners in their lifetime (29 vs. 14 vs. 11 %) (CDC 2012b).

A recent systematic review found that intention to engage in sex has been the strongest and most consistent predictor of sexual activity among adolescents across numerous studies (Buhi and Goodson 2007). However, while the relationship between sexual intention and behavior is well established, relatively few studies have tried to investigate the factors associated with sexual intentions. Because adolescents' sexual intentions are significantly associated with and serve as a precursor to their sexual behaviors, understanding the development of youths' intentions to engage in sexual intercourse is an important step (Killoren et al. 2011). Furthermore, in order to develop effective prevention programs that can address early sexual initiation among adolescents, it becomes necessary to target sexual intentions (Forehand et al. 2005).

Studies have usually focused on two primary social influences on both adolescent sexual intention and behavior- parents and peers (Whitaker and Miller 2000). While some studies have focused on how parenting dimensions influence adolescent sexual intention (Cederbaum et al. 2013; Henrich et al. 2006); others have focused on how peer group norms influence sexual decision making (Davies and Windle 2000; Harper et al. 2004). Researchers have however suggested that any investigation of adolescent behavior must account for interplay between family and peer factors rather than focusing on each of them in a vacuum (Gonzalez and Dodge 2010). Yet, few studies have examined the cumulative effect of parent and peer influence on sexual decision making especially among minority youth living in high-risk settings. Using Bronfenbrenner's (1999) ecological theory as a guiding framework, this study examines both the direct and indirect influence of maternal and peer influence on intentions to engage in sexual activity in a group of urban, racial/ethnic minority adolescent females residing in low-income neighborhoods. Understanding the social influences on sexual intention and identifying possible approaches for delaying sexual debut has important implications for adolescent health. The results from this study can inform interventions designed to reduce early sexual initiation or promote safer sexual norms among racial/ethnic minority adolescent females.

Parental and Peer Influence on Adolescent Sexual Decision Making-Direct and Indirect Associations

Peers represent an important context in adolescent development and are critical in influencing teenagers' sexual decision-making. Negative peer influence is a marker for many behavioral problems (Allen et al. 2006) including deviant behaviors in general (Gonzalez and Dodge 2010) and intentions to initiate sex specifically (Sieving et al. 2006). Peers can reinforce deviant behaviors through direct social interaction, modeling, and reinforcement (Gonzalez and Dodge 2010). For example, it has been found that if young adolescents perceive that most of their peers are having sex, they are more likely to report intending to initiate and be more likely to initiate sex themselves (Kinsman et al. 1998). Additionally,

because of their developmental stage, adolescents have limited self-reliance and a desire to conform to their peer group. This likely interferes with the ability to act independently of the influence of others, especially their peers (Cauffman and Steinberg 2000). This is especially true for racial/ethnic minority youth in high-risk neighborhoods (such as the adolescents who comprise the sample in this study), who are often exposed to a greater proportion of peers exhibiting risk behaviors relative to youth in affluent communities.

Parents are also an important source of influence for their children; this is primarily accomplished through three parenting dimensions—communication, monitoring, and parent-teen relationship quality (Cederbaum et al. 2013; Stein et al. 2009). Parent-child relationships are considered particularly salient for Black and Hispanic youth because of the high value placed on family by these groups (Windle et al. 2010). However, the evidence concerning the influence of parents on adolescent sexual behavior has been less than consistent (Whitaker and Miller 2000). Perceived family support, family cohesiveness, parental monitoring, and parent-adolescent communication about sex have shown to reduce adolescent engagement in sex (Aspy et al. 2007; French and Dishion 2003; Mellins et al. 2007; Upchurch et al. 1999). However, various studies have also failed to find direct relationships between parental variables and sexual behavior (e.g.; Fisher 2004; Zimmer-Gembeck and Helfand 2008). One explanation for an unclear relationship is that parental and peer influences are intertwined (Whitaker and Miller 2000). Besides having direct associations with adolescent sexual decision making, family process factors play a central role in determining vulnerability to pressure from deviant peers (Dishion et al. 1996). It has been theorized that hyper-engagement with deviant peers reflects a weakened connection to parents (Benda and DiBlasio, 1994; Feldman and Brown 1993). Parent-child involvement is also known to affect teen sexual behavior by influencing teen attitudes about having sexual intercourse (Miller et al. 2001). Many investigators have therefore found it beneficial to examine the interplay between these two broad areas of influence rather than engage in debates about their relative importance. Furthermore, some researchers have suggested that studies have neglected to consider the cumulative role of multiple parenting factors instead focusing on single dimension of the parent-child relationship, which might also explain the inconsistent findings (see review by Fisher 2004).

The Significance of the Maternal Role

Though we recognize the importance of the father adolescent relationship in preventing risky adolescent health behaviors, mothers and not fathers were the focus of the current study for several reasons. There are key differences in the socialization processes of boys and girls in terms of their sexual behavior; extant studies have found that mothers are more likely to communicate with daughters compared to fathers (Dilorio et al. 2000; Hutchinson and Cederbaum 2011; Martin and Luke 2010; Pluhar et al. 2008; Wyckoff et al. 2008). Additionally, daughters typically report greater comfort and frequency of sex discussions with their mothers (Guzman et al. 2003; Kapungu et al. 2010). Furthermore, mothers are more likely than fathers to monitor a child's sexual activity (DiClemente et al. 2001). As such, this study focused on maternal influence on daughter's susceptibility to peer influence and indirectly on sexual intention.

Conceptual Framework

Because youth engagement in risky sexual behaviors are influenced by an individual's settings and the systems that directly or indirectly influence those systems, it is necessary to expand our view of behavior beyond the individual. As such, we explore these issues using an ecological, developmental systems perspective, which emphasizes how the multiple and dynamic contexts in which adolescents are embedded influence their development (Bronfenbrenner and Morris 2006; Overton 2010). Specifically, Eco developmental theory proposes that research should consider multiple factors representing diverse dimensions of the family system (Perrino et al. 2000). Furthermore, this framework posits that characteristics of contexts (e.g., family and peers) may both individually and jointly exert an influence on adolescent development.

Present Study

This study expands previous research in many significant ways. It examines (1) a more comprehensive set of parental variables that might have a collective effect on these adolescents' sexual behavior; (2) whether parents and peers simultaneously influence adolescent behavior; and (3) whether parenting practices influence adolescents' intentions by reducing vulnerability to peer influence. Figure 1 outlines the hypothesized relationships between the variables. Specific hypotheses are: (1) There will be a direct negative relationship between parental influence variables and intention to engage in sex; (2) There will an indirect negative relationship between maternal influence variables and intention to engage in sex through daughter's perceptions of peer influence; (3) There will be a direct positive relationship between perceptions of peer influence and intention to engage in sex; and (4) There will be an indirect positive relationship between perceptions of peer influence and intention to engage in sex through daughter's attitudes towards sex.

Because of its strong correlation with adolescents' intention to have sex, we included age as a control variable in our models. Specifically, empirical data suggests that older youth are more likely to engage in sexual activity and report greater sexual intent (CDC 2012a). Similarly, both theoretical and empirical evidence suggests that as youth get older, parental influence declines and peer influence is amplified in their lives (Bronfenbrenner 1986; Deptula et al. 2010). Furthermore, while we had access to dyadic data (i.e. data collected from both mothers and daughters), we chose to rely on daughters' reports for this study. Existing literature strongly supports the use of daughter reports over their mothers for several reasons including low concordance in reports of mother daughter communication about sex and in reports of monitoring and mothers generally reporting better quality of Mother–daughter communication than daughters (Jaccard and Dittus 2000; O'Sullivan et al. 1999). It has been suggested that mothers generally try to present an improved version of their relationship with their daughters because of social desirability issues (Flaskerud et al. 1996). In addition, studies have found that daughters' reports are more significantly associated with their sexual attitudes, intentions, and behaviors (Feldman and Rosenthal 2000; Jaccard and Dittus 2000). This has led researchers to believe that Mother–daughter relationships as perceived by the daughters might be more important in understanding sexual intentions and behaviors than relying on mother's reports.

Methods

This study was cross-sectional; data were collected via a self-administered survey from Black and Hispanic mother–daughter dyads. A nonprobability sample of 176 mother–daughter dyads was recruited between July 2008 and June 2009 from 11 community service organizations in Philadelphia, PA, Newark, NJ, and New York, NY (see Cederbaum 2011; Cederbaum et al. 2013). Data were collected as part of a larger study examining parental influence behaviors and adolescent sexual risk engagement by maternal HIV status. The agencies where recruitment occurred provided services to HIV-infected women, victims of intimate partner violence, and those in substance use recovery. Recruitment was accomplished through flyers and provider referrals. Inclusion criteria for adults were as follows: (1) female; (2) HIV-negative or a symptomatic HIV or AIDS diagnosis; (3) lived with an HIV-negative daughter between the ages of 14 and 18 who was aware of maternal HIV status; and (4) spoke English. Criteria for youth were: (1) HIV-negative; (2) aged 14–18; (3) aware of mother's HIV status; and (4) English speaking. If the adult had more than one daughter between the ages of 14 and 18, the child closest in age to 16 (measured in months) was selected to participate. All interested participants contacted the study PI; inclusion criteria were used to screen participants. As much of the referral was done either through self-referral (via fliers which had inclusion criteria) or via case manager referral, we did not have many who were not eligible. There was no data collected on these individuals; all were ineligible because they did not have a daughter who could participate simultaneously. Statistics on those who did not qualify were not kept. Adult participants were asked to provide written consent for themselves and their daughter; minor participants provided assent.

The survey was composed of various scales that had been previously validated. Of interest in this study were measures of sexual communication, parental beliefs and values about parent–teen sexual communication, perceptions of peer influence, and sexual intention. Institutional review board approval was provided by (deleted to maintain the integrity of the review process).

Demographic Variables

Sociodemographic information was collected as part of the larger study. While information is provided to describe the sample, for these analyses, the only demographic included in the model was daughter's age.

Parental Monitoring

Monitoring was assessed using the 6-item parental monitoring scale (Li et al. 2000). Items were: (1) My mother knows where I am after school; (2) If I am going to be home late, I am expected to call my mother; (3) I tell my mother who I am going to be with before I go out; (4) When I go out at night, my mother knows where I am; (5) I talk with my mother about the plans I have with my friends; and (6) When I go out, my mother asks me where I am going. Response options ranged from 1 = *never* to 5 = *always* on a 5-point Likert scale. Scale reliability and validity of the instrument with different populations were adequate (ranging from .70 to .77) and have been described in detail elsewhere (Li et al. 2000).

Higher scores indicated greater parental monitoring. The alpha coefficient in this study was .908.

Parent–Child Relationship Satisfaction

General parent–child relationship was measured using two 10-item subscales of the Parent–Child Relationship Inventory (Gerard 1994): involvement and general communication. Items from the involvement scale include, “I am satisfied with the way my mother and I talk with each other about things” and “I am satisfied with how many things my mom and I have in common.” Items from the communication scale include, “My mother and I usually end our arguments calmly” and “I enjoy the talks I have with my mother.” Items were rated on a 4-item Likert response scale (1 = *disagree strongly*, 2 = *disagree*, 3 = *agree*, 4 = *agree strongly*). Coefficient alpha values ranged from .70 to .88 with a test–retest reliability of .68 to .93 (Heinze and Grisso 1996). The psychometrics of this measure, including reliability and validity, as well as the integrity of domains and subdomains, are reasonably strong with ethnic minority families (MacPhee et al. 1996). High scores indicated positive parenting. The alpha coefficient in this study was .958.

Parent–Teen Sexual Risk Communication (PTSRC)

PTSRC was measured by daughters' reports on the 8-item parent–teen sexual risk communication scale (PTSRC-III; Hutchinson 2007). Higher scores indicated less sexual communication between parent and child. Items were: “How much information has your mother shared with you about: (1) birth control, (2) STIs, (3) HIV, (4) how to prevent STIs and HIV, (5) condoms, (6) pressure from peers and partners to have sex, (7) how to resist pressure to have sex, and (8) waiting to have sex.” The scale has been used in numerous studies and showed internal reliability ($\alpha = .92$) and validity ($>.85$) (Hutchinson 2007). The original testing of the PTSRC was completed with a sample of 18–20 year olds and college age students (18–19) (Hutchinson, 2007). It has since been validated for use in Jamaica with 13–17 year olds (Waldron et al. 2012). Further, it has been used with Black mothers and daughters in the U.S. (Cederbaum et al. 2013). The items were reverse coded so that higher scores on this scale indicated better PTSRC. Internal reliability in this study was .940.

Perceptions of Negative Peer Influence

This variable was assessed via the following five items: (1) If I do not have sex, my friends will laugh at me; (2) Would your friend approve/disapprove of you engaging in sex?; (3) If I have sex, I will be more popular with boys and girls; (4) If I do not have sex, my friends will call me names (5) If I did not have sex, boys will not go out with me. Responses ranged from *agree strongly* to *disagree strongly*. Items on this scale were recoded so higher scores indicated higher perceptions of negative peer influence. Although this was not a standardized measure of peer influence, it was based on items from previous research (Dilorio et al. 2000) and demonstrated acceptable internal reliability (.819).

Daughters' Attitudes Toward Sex

Behavioral attitude scores ranged from 3–9 and measured by three items: (1) I believe that sex outside of marriage is (blank); (2) I believe that sex when you are a teenager is (blank);

and (3) I believe that sex when you are my age is (blank). Responses ranged from *never OK* to *always OK*. Higher scores indicated more positive attitude towards having sex. Questions similar to these have been used in previous research and found to be predictive of decisions to engage in sexual activity (Hutchinson and Montgomery 2007; Meier 2003). Internal reliability in this study was .715.

Outcome Variable

Sexual intention was assessed with the question, “How likely are you to engage in sexual activity in the next three months?” Responses were rated on a Likert-type scale ranging from 1 (*not willing*) to 5 (*very willing*). Because these data were cross-sectional, we chose to measure future intention (instead of prior sexual experience) as the main outcome variable to offset issues of temporal order.

Statistical Analyses

Data was analyzed using SPSS 20. Descriptive statistics were calculated to obtain frequencies for categorical variables and means, standard deviations, and ranges. Internal consistency (reliability) of all scales was measured using Cronbach's alpha. Internal reliability was considered acceptable if Cronbach's alpha was .70 or greater (DeVellis 2003). Pearson's correlations were calculated to assess bivariate associations between measures. Path analyses were performed using AMOS 19.0 software. Path analysis was used to examine the relationships between main constructs. The use of path analysis is not unlike multiple regression techniques but has additional advantages, such as allowing for assessment of the relative importance of various direct and indirect paths to or associations with the dependent variable (Kline 2004). Path analysis also assesses the fit of the structural model to the covariance matrix. Reported indexes of model fit included the comparative fit index (CFI), which reflects the degree to which the sample variances and covariances are reproduced by the hypothesized model structure. CFI values range from 0 to 1, and values higher than .90 indicate acceptable fit. The root mean square error of approximation (RMSEA) ranges from 0 to infinity, and values less than .06 indicate acceptable fit. Both the CFI and RMSEA are sensitive to model misspecification and are minimally affected by sample size. The Path analysis was conducted in three steps (Kline 2004). First, a model with all possible direct and indirect paths was specified, second non-significant paths were systematically removed one at a time, and third, the model was re-tested until a final model with only significant paths was established. The a priori alpha level for the analysis was .05.

Results

One hundred and seventy six (176) dyads were recruited in the original study (352 individuals). For this study, only responses from daughters ($N = 176$) were used because adolescent reports of parenting behaviors have found to be more reliable than those of their parents (Jaccard and Dittus 2000). Demographic characteristics of daughters are presented in Table 1.

Response characteristics are presented in Table 2. The mean age of adolescent girls was 15.8 years ($SD = 1.5$, range = 14–18). The respondents reported moderate levels of having

positive attitudes toward sex ($M = 5.28$, $SD = 1.4$, range = 3–9). Daughters reported having a reasonably high level of relationship satisfaction with their mothers ($M = 38.8$, $SD = 10.2$). They reported moderate levels of sexual risk communication with their mothers ($M = 25.61$, $SD = 10.4$) and medium levels of parental monitoring ($M = 16.4$, $SD = 12.4$). They also reported moderate levels of perceptions of negative peer influence ($M = 8.29$, $SD = 3.0$). Respondents reported moderate levels of intentions to engage in sexual activity during the next 3 months ($M = 2.32$, $SD = 1.24$).

Bivariate Analyses

Pearson correlation coefficients are presented in Table 3. Among independent variables at the bivariate level, parental monitoring was significantly associated with parent–child relationship satisfaction and adolescents' attitudes toward teen sex ($p < .05$). Perceptions of negative peer influence were associated with parental monitoring, attitude toward teen sex, and parent–child relationship satisfaction ($p < .05$). Parent–teen sexual risk communication was significantly associated with parental monitoring, parent–child relationship satisfaction, and perceptions of negative peer influence ($p < .05$).

Multivariate Analyses

The final path model had excellent fit statistics (CFI = .981, NFI = .996, RMSEA = .040). The Chi square value associated with the final model was $\chi^2(8) = 11.5$, $p = .175$, indicating that the empirical data had no significant deviation from the model. Results of the analysis with only significant paths included are depicted in Fig. 2. Path coefficients were standardized to compare relationships across all model variables.

Direct Associations

Parent–child relationship satisfaction, PTSRC, and parental monitoring were significantly associated with perceptions of negative peer influence, highlighting the importance of parental influence on adolescents' capacity to manage peer pressure. More specifically, greater parent–child relationship satisfaction was associated with a decreased likelihood of reporting peer influence to have sex ($b = -.175$, $p < .05$). Greater parental monitoring was also inversely associated with perceptions of negative peer influence ($b = -.552$, $p < .001$). Higher levels of PTSRC was associated with decreased perceptions of negative peer influence ($b = -.246$, $p < .05$). Higher perceptions of negative peer influence were positively associated with greater positive attitudes toward sex ($b = .276$, $p < .001$). Increased perceptions of negative peer influence ($b = .331$, $p < .001$) and more positive attitudes about sex ($b = .355$, $p < .001$) were associated with greater intentions to engage in sexual activity during the next 3 months. Age was not significantly associated with any variable except intention to engage in sexual activity ($b = .221$, $p < .001$).

Indirect Associations

The decomposition of the effects of independent variables on dependent variables (Jöreskog and Sörbom 1993) was also calculated. The results indicated that the presence of significant indirect associations between parental influence variables and adolescent intentions to engage in sexual activity during the next 3 months. More specifically, parental monitoring

offset adolescent intentions to engage in sexual activity via adolescent perceptions of peer influence (total indirect effects: $b = -.182, p < .05$). Similarly, parent–child relationship satisfaction also mitigated that risk (total indirect effects: $b = -.057, p < .05$). Furthermore, a significant indirect relationship was found between parental influence variables and attitudes toward sex via adolescent perceptions of negative peer influence; more specifically, parental monitoring (total indirect effects: $b = -.135, p < .05$) and parent–child relationship satisfaction (total indirect effects: $b = -.040, p < .05$). A significant indirect relationship was also found between perceptions of negative peer influence and intentions to engage in sexual intercourse during the next 3 months via attitudes toward teen sex (total indirect effects: $b = .087, p < .05$).

Discussion

Our hypothesis that maternal influences on daughters' sexual intention are mediated through peer influence was supported. Daughters who reported engaging in sexual risk communication and being more monitored by their mothers were less to exhibit susceptibility to peer influence and consequently, less likely to intend to have sex. These findings underscore our premise that although maternal variables might not have a direct influence on adolescent sexual decision-making, they have an indirect influence on daughters' sexual decision-making. This suggests that maternal influence can help adolescent girls develop skills to resist peer influence and better navigate their risky peer environments.

These results also support the developmental systems perspective, which holds that an individual's development is influenced cumulatively by several contexts in which parental and peer influences are intertwined and, in this case, affect adolescent sexual decision making (Bronfenbrenner and Morris 2006; Overton 2010). Therefore, parents are encouraged to continue maintaining an open line of communication with their children, especially during adolescence, even if these discussions might not be specifically focused on risk taking or peer influence. For example, parent–child relationship satisfaction is instrumental in enhancing the effectiveness of parent–child communication (Cederbaum et al. 2014; Ennett et al. 2001). Therefore, although targeted parental communication and monitoring are vital, it is imperative that parents also spend quality time with their children, nurturing these relationships.

Parental monitoring was the most important covariate among parental variables in explaining susceptibility to peer influence among adolescent girls in our sample. This supports the ecodevelopmental theory that proposes that studies need to consider multiple dimensions of parenting as each of these dimensions has a unique effect on adolescent behavior. Constant monitoring, however, is relatively unfeasible for two salient reasons: (1) parents work (sometimes multiple jobs) and (2) adolescents cannot be forced to spend all their time at home. Therefore, it is important to create strategies, such as groups of parents or trusted neighbors relying on one another and forming a network, that allow others to assume a supervisory role during parental absences. Alternatively, to reduce the amount of unsupervised time and increase positive socialization, parents can use available resources such as enrolling their children in organized sports or other such activities, during which

they can inculcate and enhance important life skills. It is difficult to monitor the free time of adolescents, making parent–child communication about risk behaviors critically important.

Our results indicate that maternal discussion about sexual risk was able to reduce daughters' vulnerability to negative peer influence and consequently their intentions to engage in sex. This is consistent with other findings (Clark et al. 2012; Deptula et al. 2010; Fasula and Miller 2006) and should dispel the popular misconception among parents that talking about sex will lead to youth engaging in sex (Wilson et al. 2010). The belief that sexual risk communication leads to sexual engagement among adolescents is likely more correlational than causal. More specifically, parent–child sex communication may be a response to parental suspicions that a child is sexually active, and therefore communication appears associated with sexual activity. This study overcame this bias in several ways. First, instead of focusing on sexual activity during the past, it investigated daughters' intentions to have sex. Second, it sought to understand the both the direct and indirect mechanisms through which this occurs instead of focusing solely on direct associations.

Perceptions of peer influence were found to be critical in understanding decisions to engage in sexual activity among these adolescent girls. This is consistent with previous studies, which have repeatedly found that susceptibility to peer influence is consistently associated with intentions to engage in sexual activity (Buhi and Goodson 2007; Collazo 2005). This indicates the need for an increased emphasis on changing peer norms regarding sexual behaviors at the group level. Peers serve as agents of change and represent one of the most readily available strategies for intervention, such as serving as natural opinion leaders. These network members are widely respected and have the ability to establish and enforce social norms that reduce the amount of pressure among peers regarding sexual activity.

Limitations

Like all studies, the present study had some limitations. First, inherent limitations of secondary data analysis due to the instruments used and quality of data of the original study may have influenced findings. However, most of the instruments have been validated previously with adolescents and were shown to be reliable. The cross-sectional analysis did not allow for inference about temporal associations between independent and dependent variables. Participant responses may be biased given the sensitive nature of the study. However, a high level of accuracy has been found regarding self-reported data collected from adolescents (Shew et al. 1997). Given the logistics associated with conducting community-based research, it was not possible to gather data on those who did not meet study criteria. While generalizability is the hope of any study, there are a number of limits in generalizability here (as you find in most studies) including that all women were from one region, almost all are from one racial/ethnic group, and all were social service or clinic connected.

Participant responses may have been biased given the sensitive nature of scale items and the self-reported nature of the measures. However, several steps were taken to increase the accuracy of these self-reports. Participants were asked to recount behaviors during a short period to increase memory; the importance of responding honestly was emphasized.

Participants were also assured that their reports would be kept strictly confidential. Additionally, both mothers and daughters were provided with assurances that their responses would not be shared with each other. These steps have been known to increase the accuracy of self-reports about sensitive behavior (Ford et al. 1997). Finally, we used cross-sectional data; we cannot make claims of causality or directionality. Even though the literature supports the salience of the maternal role, one cannot ignore the crucial role fathers play in their daughters' lives. Future studies should also explore how fathers influence daughters' decisions to engage in sexual activity.

Furthermore, emerging evidence has suggested significant differences in risk behaviors among adolescents of HIV-positive parents (Brook et al. 2010; Mellins et al. 2007; Pilowsky et al. 2003). There were both HIV positive and HIV negative mothers in the sample. There are very few studies that have included samples of HIV-positive women and their children and even fewer with an HIV-negative Mother–daughter dyad comparison group. While this dataset is unique in that context, this was not a focus of this particular study.

Conclusion

Despite these limitations, this study has important implications for social work practice and research with families who reside in high-stress environments. First, we must help parents refrain from underestimating the positive influence they can have on mitigating the negative influence of peers. Family processes can act as protective factors for adolescents whose peers engage in risky behaviors. As such, we must help parents connect with programs in which they can not only learn about sex communication but also develop skills that will allow them to be more communicative with their children about risk engagement. These results also highlight the need for early intervention. Youth who become mired in negative peer environments during late adolescence may become less influenced by parenting behaviors; therefore, it is important to reach these youth and their families when they are younger and still more rooted in their family systems. Methodologically, it is important to conduct longitudinal studies to capture the temporal nature of the relationships between parents, children, and peers and the developmental processes that are critical to these relationships.

References

- Allen JP, Porter MR, McFarland FC. Leaders and followers in adolescent close friendships: Susceptibility to peer influence as a predictor of risky behavior, friendship instability, and depression. *Development and Psychopathology*. 2006; 18(1):155. [PubMed: 16478557]
- Aspy CB, Vesely SK, Oman RF, Rodine S, Marshall L, McLeroy K. Parental communication and youth sexual behavior. *Journal of Adolescence*. 2007; 30:449–466. [PubMed: 16750265]
- Benda BB, DiBlasio FA. An integration of theory: Adolescent sexual contacts. *Journal of Youth and Adolescence*. 1994; 23(3):403–420.
- Bronfenbrenner U. Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*. 1986; 22(6):723.
- Bronfenbrenner, U. Measuring environment across the life span: Emerging methods and concepts. American Psychological Association; Washington, DC: 1999. Environments in developmental perspective: Theoretical and operational models; p. 3-28.

- Bronfenbrenner, U.; Morris, PA. The bioecological model of human development. In: Damon, W.; Lerner, RM., editors. *Handbook of child psychology*. Wiley; New York: 2006. p. 793-828.
- Brook DW, Brook JS, Rubenstein E, Zhang C, Finch SJ. A longitudinal study of sexual risk behavior among the adolescent children of HIV-positive and HIV-negative drug-abusing fathers. *Journal of Adolescent Health*. 2010; 46(3):224–231. [PubMed: 20159498]
- Buhi ER, Goodson P. Predictors of adolescent sexual behavior and intention: A theory-guided systematic review. *Journal of Adolescent Health*. 2007; 40:4–21. [PubMed: 17185201]
- Cauffman E, Steinberg L. Immaturity of judgment in adolescence: Why adolescents may be less culpable than adults. *Behavioral Sciences & the Law*. 2000; 18:741–760. [PubMed: 11180420]
- Cederbaum JA, Barman Adhikari A, Guerrero EG, Hutchinson MK. Relationship satisfaction and communication among urban minority HIV-positive and HIV-negative mothers: The influence on daughter's alcohol use. *Journal of Family Issues*. 2014 doi:10.1177/0192513X13513582.
- Cederbaum JA, Hutchinson MK, Duan L, Jemmott LS. Maternal HIV serostatus, Mother–daughter sexual risk communication and adolescent HIV risk beliefs and intentions. *AIDS and Behavior*. 2013; 17:2540–2553. [PubMed: 22677973]
- Centers for Disease Control and Prevention (CDC). Youth risk behavior surveillance: United States, 2011. 2012a. Retrieved August 8, 2013 from <http://www.cdc.gov/mmwr/pdf/ss/ss6104.pdf>
- Centers for Disease Control and Prevention (CDC). HIV-related risk behaviors among African-American youth. 2012b. Retrieved August 8, 2013 from <http://www.cdc.gov/hiv/risk/racialethnic/aa/facts/index.html>
- Clark TT, Belgrave FZ, Abell M. The mediating and moderating effects of parent and peer influences upon drug use among African American adolescents. *Journal of Black Psychology*. 2012; 38:52–80.
- Collazo AA. Theory-based predictors of intention to engage in precautionary sexual behavior among Puerto Rican high school adolescents. *Journal of HIV/AIDS Prevention in Children & Youth*. 2005; 6:91–120.
- Davies PT, Windle M. Middle adolescents' dating pathways and psychosocial adjustment. *Merrill Palmer Q*. 2000; 46:90–118.
- Deptula DP, Henry DB, Schoeny ME. How can parents make a difference? Longitudinal associations with adolescent sexual behavior. *Journal of Family Psychology*. 2010; 24:731–739. [PubMed: 21171771]
- DeVellis, RF. *Scale development: Theory and applications*. 2nd ed.. Sage; Thousand Oaks: 2003.
- DiClemente RJ, Wingood GM, Crosby R, Sionean C, Cobb BK, Harrington K, et al. Parental monitoring: association with adolescents' risk behaviors. *Pediatrics*. 2001; 107(6):1363–1368. [PubMed: 11389258]
- Dilorio C, Dudley WN, Soet J, Watkins J, Maibach E. A social cognitive-based model for condom use among college students. *Nursing Research*. 2000; 49(4):208–214. [PubMed: 10929692]
- Dishion TJ, Spracklen KM, Andrews DW, Patterson GR. Deviancy training in male adolescent friendships. *Behavior Therapy*. 1996; 27(3):373–390.
- Ennett ST, Bauman KE, Foshee VA, Pemberton M, Hicks KA. Parent-child communication about adolescent tobacco and alcohol use: What do parents say and does it affect youth behavior? *Journal of Marriage and Family*. 2001; 63:48–62.
- Fasula AM, Miller KS. African-American and Hispanic adolescents' intentions to delay first intercourse: Parental communication as a buffer for sexually active peers. *Journal of Adolescent Health*. 2006; 38:193–200. [PubMed: 16488815]
- Feldman SS, Brown NL. Family influences on adolescent male sexuality: the mediational role of self-restraint. *Social Development*. 1993; 2(1):15–35.
- Feldman SS, Rosenthal DA. The effect of communication characteristics on family members' perceptions of parents as sex educators. *Journal of Research on Adolescence*. 2000; 10(2):119–150.
- Fisher, TD. Family foundations of sexuality. In: Harvey, JH.; Wenzel, A.; Sprecher, S., editors. *The handbook of sexuality in close relationships*. Erlbaum; Hillsdale: 2004. p. 385-409.

- Flaskerud JH, Uman G, Lara R, Romero L, Taka K. Sexual practices, attitudes, and knowledge related to HIV transmission in low income Los Angeles Hispanic women. *Journal of Sex Research*. 1996; 33(4):343–353.
- Ford CA, Millstein SG, Halpern-Felsher BL, Irwin CE. Influence of physician confidentiality assurances on adolescents' willingness to disclose information and seek future health care: A randomized controlled trial. *JAMA*. 1997; 278(12):1029–1034. [PubMed: 9307357]
- Forehand R, Gound M, Kotchick BA, Armistead L, Long N, Miller KS. Sexual intentions of black preadolescents: Associations with risk and adaptive behaviors. *Perspectives on sexual and reproductive health*. 2005; 37(1):13–18. [PubMed: 15888398]
- French DC, Dishion TJ. Predictors of early initiation of sexual intercourse among high-risk adolescents. *The Journal of Early Adolescence*. 2003; 23(3):295–315.
- Gerard, AB. Parent-Child Relationship Inventory (PCRI): Manual. Western Psychological Services; Los Angeles: 1994.
- Gonzalez, N.; Dodge, KA. Family and peer influences on adolescent behavior and risk-taking. Unpublished paper submitted to the National Research Council and Institute of Medicine's Board on Children, Youth, and Families. 2010. Retrieved August 8, 2013 from http://www.BCYF.org/dodge_gonzales_paper.pdf
- Guzmán BL, Schlehofer-Sutton MM, Villanueva CM, Stritto MED, Casad BJ, Feria A. Let's talk about sex: How comfortable discussions about sex impact teen sexual behavior. *Journal of Health Communication*. 2003; 8(6):583–598. [PubMed: 14690890]
- Harper GW, Gannon C, Watson SE, Catania JA, Dolcini MM. The role of close friends in African American adolescents' dating and sexual behavior. *The Journal of Sex Research*. 2004; 41:351–362.
- Heinze MC, Grisso T. Review of instruments assessing parenting competencies used in child custody evaluations. *Behavioral Sciences & the Law*. 1996; 14:293–313.
- Henrich CC, Brookmeyer KA, Shrier LA, Shahar G. Supportive relationships and sexual risk behavior in adolescence: An ecological–transactional approach. *Journal of Pediatric Psychology*. 2006; 31:286–297. [PubMed: 15827352]
- Hutchinson MK. The Parent-teen sexual risk communication scale (PTSRC-III): Instrument development and psychometrics. *Nursing Research*. 2007; 56:1–8. [PubMed: 17179868]
- Hutchinson MK, Cederbaum JA. Talking to daddy's little girl about sex: Daughters' reports of sexual communication and support from fathers. *Journal of Family Issues*. 2011; 32:550–572.
- Hutchinson MK, Montgomery AJ. Parent communication and sexual risk among African Americans. *Western Journal of Nursing Research*. 2007; 29(6):691–707. [PubMed: 17563402]
- Hutchinson M, Kahwa E, Waldron N, Hepburn Brown C, Hamilton PI, Hewitt HH, et al. Jamaican mothers' influences of adolescent girls' sexual beliefs and behaviors. *Journal of Nursing Scholarship*. 2012; 44(1):27–35. [PubMed: 22339731]
- Jaccard J, Dittus PJ. Adolescent perceptions of maternal approval of birth control and sexual risk behavior. *American Journal of Public Health*. 2000; 90:1426–1430. [PubMed: 10983201]
- Jöreskog, KG.; Sörbom, D. Lisrel 8: Structured equation modeling with the Simplis command language. Scientific Software International; Iowa: 1993.
- Kapungu CT, Baptiste D, Holmbeck G, McBride C, Robinson B, Sturdivant A, et al. Beyond the “birds and the bees”: Gender differences in sex related communication among Urban African American Adolescents. *Family process*. 2010; 49(2):251–264. [PubMed: 20594210]
- Killoren S, Updegraff K, Christopher F. Family and cultural correlates of mexican-origin youths' sexual intentions. *Journal of Youth and Adolescence*. 2011; 40(6):707–718. [PubMed: 20835919]
- Kinsman SB, Romer D, Furstenberg FF, Schwarz DF. Early sexual initiation: The role of peer norms. *Pediatrics*. 1998; 102(5):1185–1192. [PubMed: 9794952]
- Kline, RB. Principles and practice of structural equation modeling. Guilford Press; New York: 2004.
- Li X, Feigelman S, Stanton B. Perceived parental monitoring and health risk behaviors among urban low-income African-American children and adolescents. *Journal of Adolescent Health*. 2000; 27:43–48. [PubMed: 10867351]
- MacPhee D, Fritz J, Miller-Heyl J. Ethnic variations in personal social networks and parenting. *Child Development*. 1996; 67:3278–3295.

- Martin, JA.; Hamilton, BE.; Ventura, SJ.; Osterman, MJK.; Mathews, TJ. Births: Final data for 2011. National Center for Health Statistics; Hyattsville: 2013. Retrieved July 2, 2013, from http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_01.pdf
- Martin KA, Luke K. Gender differences in the ABC's of the birds and the bees: What mothers teach young children about sexuality and reproduction? *Sex Roles*. 2010; 62(3-4):278-291.
- Meier AM. Adolescents' transition to first intercourse, religiosity, and attitudes about sex. *Social Forces*. 2003; 81:1031-1052.
- Mellins CA, Dolezal C, Brackis-Cott E, Nicholson O, Warne P, Meyer-Bahlburg HFL. Predicting the onset of sexual and drug risk behaviors in HIV-negative youths with HIV-positive mothers: The role of contextual, self-regulation, and social-interaction factors. *Journal of Youth and Adolescence*. 2007; 36:265-278.
- Miller BC, Benson B, Galbraith KA. Family relationships and adolescent pregnancy risk: A research synthesis. *Developmental Review*. 2001; 21:1-38.
- O'Sullivan LF, Jaramillo BM, Moreau D, Meyer-Bahlburg HF. Mother-daughter communication about sexuality in a clinical sample of Hispanic adolescent girls. *Hispanic Journal of Behavioral Sciences*. 1999; 21(4):447-469.
- Overton, WF. Life-span development: Concepts and issues. John Wiley & Sons Inc.; Hoboken: 2010.
- Perrino T, González-Soldevilla A, Pantin H, Szapocznik J. The role of families in adolescent HIV prevention: A review. *Clinical Child and Family Psychology Review*. 2000; 3(2):81-96. [PubMed: 11227063]
- Pilowsky DJ, Zybert PA, Hsieh PW, Vlahov D, Susser E. Children of HIV-positive drug-using parents. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2003; 42(8):950-956. [PubMed: 12874497]
- Pluhar EI, DiIorio CK, McCarty F. Correlates of sexuality communication among mothers and 6-12-year-old children. *Child: Care, Health and Development*. 2008; 34(3):283-290.
- Shew ML, Remafedi GJ, Bearinger LH, Faulkner PL, Taylor BA, Potthoff SJ, et al. The validity of self-reported condom use among adolescents. *Sexually Transmitted Diseases*. 1997; 24:503-510. [PubMed: 9339967]
- Sieving RE, Eisenberg ME, Pettingell S, Skay C. Friend's influence on adolescents' first sexual intercourse. *Perspectives on Sexual and Reproductive Health*. 2006; 38(1):13-19. [PubMed: 16554267]
- Stein JA, Milburn NG, Zane JI, Rotheram-Borus MJ. Paternal and maternal influences on problem behaviors among homeless and runaway youth. *American Journal of Orthopsychiatry*. 2009; 79:39-50. [PubMed: 19290724]
- Upchurch DM, Aneshensel CS, Sucoff CA, Levy-Storms L. Neighborhood and family contexts of adolescent sexual activity. *Journal of Marriage and the Family*. 1999:920-933.
- Waldron NK, Hutchinson MK, Hewitt HH, Hamilton PI. Cross-cultural psychometric assessment of the parent-teen sexual risk communication (PTSRC-III) scale in Jamaica. *Open Journal of Preventive Medicine*. 2012; 2:205.
- Whitaker DJ, Miller KS. Parent-adolescent discussions about sex and condoms impact on peer influences of sexual risk behavior. *Journal of Adolescent Research*. 2000; 15(2):251-273.
- Wilson EK, Dalberth BT, Koo HP, Gard JC. Parents' perspectives on talking to preteenage children about sex. *Perspect Sex Reprod Health*. 2010; 42:56-63. [PubMed: 20415887]
- Windle M, Brener N, Cuccaro P, Dittus P, Kanouse DE, Murray N, et al. Parenting predictors of early-adolescents' health behaviors: Simultaneous group comparisons across sex and ethnic groups. *Journal of Youth and Adolescence*. 2010; 39(6):594-606. [PubMed: 20422349]
- Wyckoff SC, Miller KS, Forehand R, Bau JJ, Fasula A, Long N, et al. Patterns of sexuality communication between preadolescents and their mothers and fathers. *Journal of Child and Family Studies*. 2008; 17(5):649-662.
- Zimmer-Gembeck MJ, Helfand M. Ten years of longitudinal research on U.S. Adolescent sexual behavior: Developmental correlates of sexual intercourse, and the importance of age, gender, and ethnic background. *Developmental Review*. 2008; 28:153-224. doi:10.1016/jr.dr.2007.06.001.

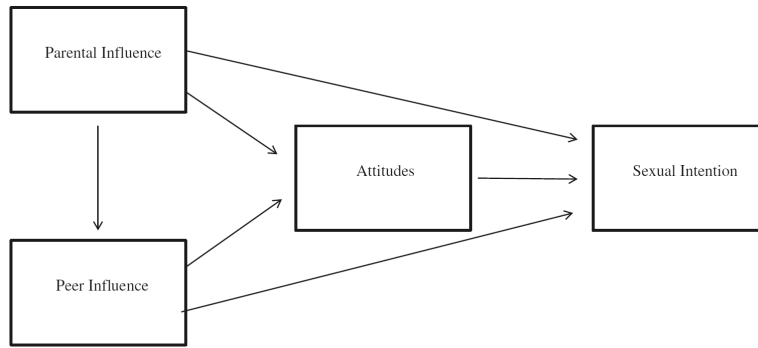


Fig. 1.
Hypothesized relationships between study variables

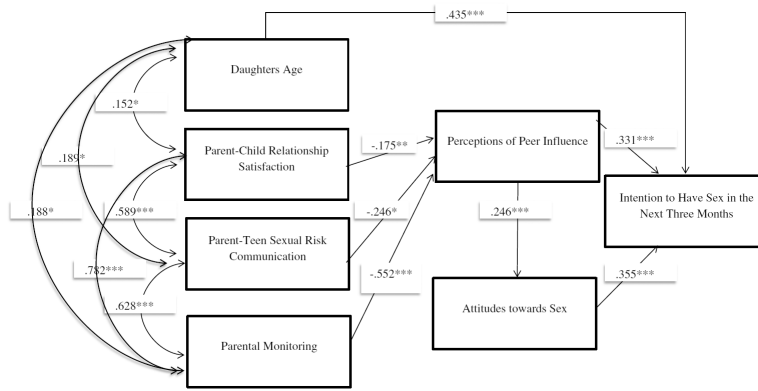


Fig. 2. Significant regression paths depicting associations with sexual intention (*p < .05, **p < .01, ***p < .001)

Table 1

Study sample characteristics

Variable	M	Range
Age	15.8	14–18
	N	%
Grade level		
8	28	17.5
9	37	23.1
10	41	25.6
11	24	15
12	23	14.4
More than high school	7	4.4
Not in school	16	9
Race (Black)	147	87.5

Table 2

Descriptive statistics of study variables

Variable	Min	Max	M	SD
Attitudes toward teen sex	3	9	5.28	1.44
Parent–child relationship satisfaction	10	50	38.82	10.23
Parent–child sexual risk communication	7	40	25.61	10.43
Parental monitoring	0	30	16.41	12.43
Perceptions of peer influence	5	17	8.29	3.0
Intentions to have sex during next 3 months	1	5	2.32	1.24

Table 3

Correlations among study variables

Variable	1	2	3	4	5	6
1. Intentions to have sex during next 3 months						
2. Attitudes toward teen sex	.44**					
3. Parent-child relationship satisfaction	-.21**	-.08				
4. Parental monitoring	-.26**	-.21**	.20**			
5. Perceptions of peer influence	.38**	.21**	-.20**	-.46**		
6. Parent-child sexual risk communication	-.18*	-.19*	.30**	.78**	-.29**	
7. Age	.22**	.10	.12	.18*	-.09	.18*

* $p < .05$,** $p < .01$