AIDS Behav (2009) 13:365–374
DOI 10.1007/s10461-007-9324-6

ORIGINAL PAPER

Barriers and Facilitators to Maternal Communication with Preadolescents about Age-Relevant Sexual Topics

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Published online: 6 November 2007
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Abstract The present study examined factors that promote parent–child discussions about sex topics. A sample of 1,066 dyads of African American mothers and their 9–12-year-old children participated completing computer-administered surveys. After controlling for all other covariates, mother's sexual communication responsiveness (i.e., knowledge, comfort, skills, and confidence) was the most consistent predictor of discussions. Mothers with higher responsiveness had significantly increased odds of discussions about abstinence, puberty, and reproduction, based on both mother and child reports. In addition, child's age, pubertal development, readiness to learn about sex, and being female were positively associated with an increase in the odds of discussions in most models. Findings indicate that encouraging parents to talk with their children early may not be sufficient to promote parent–child sex discussions. Parents also need the knowledge, comfort, skills, and confidence to communicate effectively and keep them from avoiding these often difficult and emotional conversations with their children.

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Keywords Preadolescent · Parent · Sexual communication · Sexual Risk Prevention

Introduction

Sexual behaviors, such as early sexual initiation, unprotected intercourse, and sex with multiple partners, can place young people at risk for pregnancy and sexually transmitted diseases (STDs), including the human immunodeficiency virus (HIV). Of particular concern are Black youth, who are disproportionately affected by STDs (CDC 2006a) and HIV/AIDS (CDC 2007). Recent data from the Youth Risk Behavior Survey (YRBS) (CDC 2006b) a national survey of high school students, indicate that a number of youth are engaging in potentially risky sexual behaviors and that some are beginning to engage in these behaviors at an early age. Overall, 47% of high school students have ever had sexual intercourse and 6% (9% of males; 4% of females) had first intercourse by age 13. For Black students, 17% (27% of black males; 7% of black females) have initiated intercourse by age 13 (CDC 2006b).

These data indicate a need to reach youth prior to adolescence with age-relevant sexual health and sexual risk prevention information. However, there is a dearth of programs in place to guide preadolescents toward healthy and safe sexuality. For example, few elementary school health education programs provide students with information on STD (24.7%) or pregnancy prevention (18.6%), and only about half educate students about HIV (50.1%) and human sexuality more generally (57.4%) (Kann et al. 2001).

This gap in early sexuality education may be best addressed by parents. First, parents are in a unique position to engage their children in dialogues about sexuality-related issues early, before the initiation of sexual activity.

Second, unlike other information sources, parent–child discussions can be continuous, building one upon the next as the child's development and experiences change, and time-sensitive to immediately respond to the child's questions and anticipated needs rather than programmed, such as in a school curriculum. Third, parents may be better suited to engaging in discussions that are focused on their values and beliefs about sexual behavior than other information sources.

Research shows that adolescent risk behavior varies depending on the timing, frequency, and quality of parent–adolescent communication about sex. Such communication is associated with decreased sexual risk-taking behavior among adolescents (Dittus et al. 1999; Dutra et al. 1999; Karofsky et al. 2000; Kotchick et al. 1999; Leland and Barth 1993), including increased partner communication (Whitaker et al. 1999) and increased condom use, and is most effective when these discussions occur prior to sexual debut (Miller et al. 1998b). Frequent parent–adolescent communication about sex-related topics has been associated with more responsible sexual behavior, less sexual experience, and increased contraceptive use among youth (Crosby et al. 2001; DiIorio et al. 2003). In terms of quality, parent–adolescent communication that is open, receptive, and comfortable is related to less sexual experience and less risky behavior among adolescents (Dutra et al. 1999; Kotchick et al. 1999; Miller et al. 1998c; Miller et al. 1999). Discussions with mothers about sex and AIDS related issues are associated with more consistent condom use when mothers are perceived as skilled, open, and comfortable during such discussions (Whitaker et al. 1999). Additionally, the parents' communication style may also be a factor in whether the message is effectively internalized by the child (Miller et al. 1998a). When parents employ open and interactive communication styles, their children demonstrate greater sexuality knowledge (Lefkowitz et al. 2000).

Both parents and teenagers want and value good communication about sexuality (Kirby 1999), and preadolescents prefer to receive information about sex from their parents rather than from other sources (Kaiser Family Foundation 1999). However, even when parents think that early parent–child sex discussions are important, they do not always engage their children in such discussions (Jaccard et al. 2000).

Research that identifies barriers and facilitators to parent–child sex discussions is limited, particularly for preadolescent African-American populations. Although African American youth are at disproportionate risk for negative sexual health outcomes, the majority of studies have been conducted with predominantly White samples. In addition, research in this area almost exclusively focuses on parents of youth ages 13 and older, after many youth have already become sexually active.

In this study we took steps to address these gaps in the literature. We used multivariate logistic regression to identify predictors of mother–child discussions for a sample of 1,066 African American mother–preadolescent (ages 9–12) dyads. Furthermore, the topics of sex discussions we explored were selected specifically for their relevance for preadolescents: abstinence, puberty, and reproduction. The findings from this study will provide critical information for developing culturally relevant interventions that effectively promote early parent–child sex discussions for African American families.

Previous research consistently shows a positive association between parents' sexual communication knowledge, skill, and confidence and the likelihood, frequency, and number of topics covered in parent–child sex discussions (DiIorio et al. 1996, 2000; Dutra et al. 1999; Jaccard et al. 2000; Miller et al. 1998a; Pluhar et al. 2006). These findings are consistent with social cognitive theory (SCT) (Bandura 1989), which predicts that knowledge, skill, and confidence (or behavioral capability and self-efficacy) for engaging in a behavior increases the likelihood that a person will in fact engage in the behavior. In addition, parents' embarrassment and lack of comfort in talking to their children about sexual topics is a barrier to such discussions (DiIorio et al. 1996, 2000; Dutra et al. 1999; Jaccard et al. 2000; Miller et al. 1998a; Pluhar et al. 2006). This constellation of knowledge, comfort, skills, and confidence has been referred to as parental responsiveness in communicating (Dutra et al. 1999; Fasula and Miller 2006; Kotchick et al. 1999; Whitaker et al. 1999).

In addition to parental attributes, SCT predicts that environmental cues affect parents' sexual discussion behaviors with their children (Bandura 1989). Relevant environmental cues for parent–child sex discussions include a child's age (DiIorio et al. 1996, 2000; White et al. 1995), pubertal development (DiIorio et al. 1996; Lehr et al. 2005; Pluhar et al. 2006), and sexual or dating behavior (DiIorio et al. 2003; Rosenthal et al. 1998; White et al. 1995). In addition, mothers, more than fathers, are the primary sexual socializers in the family and that mothers are more likely to talk to daughters, are more comfortable talking with daughters, (DiIorio et al. 1996) and talk about a wider range of topics with daughters than with sons (for a review see DiIorio et al. 2003).

Based on this theoretical and empirical literature, we made three hypotheses. First, mothers' responsiveness will be positively associated with mother–child sex discussions. Second, sexual development cues such as age, pubertal development, and readiness to learn about sex will be positively associated with mother–child sex discussions. Third, a child's gender will affect the likelihood of mother–child sex discussions such that mothers will be more likely to have discussions with daughters than with sons.

Methods

The data reported here are drawn from Parents Matter!, a larger longitudinal study focused on preventing risky sexual behavior among African American adolescents by enhancing parent–child communication about sexuality and sexual risk reduction (Forehand et al. 2004). The multi-site project spans rural and urban environments: Athens, GA, and surrounding counties; Little Rock, AR, and Atlanta, GA. During the study, parents' and children's sexual attitudes and beliefs, communication, and risk behaviors were measured before and immediately after intervention and at 6, 12, 24, and 36-month follow-ups (for a more in-depth review of the methods, see (Ball et al. 2004)). Our results are based on the baseline data for primary female caregivers and their children. Longitudinal data could not be used, as families were randomized to different interventions after baseline.

Participants

A community sample of 1,127 African American parent–child pairs constituted the initial sample. To be eligible to participate, the parent must have been the biological parent or the legal guardian of the child and have lived continuously with the child for at least 3 years before the first assessment. The child was required to be in grade 4 or 5 at the time of baseline assessment and aged 9–12. The parent had to self-identify as African American; both parent and child had to speak English.

From the original 1,127 participants, 12 were excluded because they failed to meet the eligibility criteria and 10 were missing all data for the mother or child. Additionally, 33 male caregivers were excluded from these analyses because of small numbers and likely differences between mothers and fathers in communication about sex (Dittus et al. 1997). We also excluded six dyads where the mother believed their child to be sexually active because of small numbers and likely differences in communication patterns for mothers who believe their child is sexually active and those that do not. (We did not exclude the 15 children who reported ever engaging in intercourse because the environmental cues are based on the mother's perceptions.) Thus, the sample of female caregivers (referred to hereafter as mothers) for these study analyses was 1,066, although multiple logistic regression analyses were performed with fewer numbers (between 1,004 dyads and 1,021 dyads) because data on some variables were missing. The missing data were sporadic and were not systematic in nature. The analysis of child responses was based on the matched sample of the children of these mothers ($n = 1{,}066$).

Measures

The three outcome variables were mother–child communication about abstinence, puberty, and reproduction. The covariates included the three primary study predictors: mother's responsiveness, sexual development cues (child's age, pubertal development, and readiness to learn about sex), and child's gender. In addition, because abstinence is a value-based topic (compared with the information-based topics of reproduction and puberty) mother's abstinence attitude was included in the analyses pertaining to abstinence communication. We also included indicators for socioeconomic status (family income and mother's education attainment) as control variables.

To maximize reliability, validity, sensitivity, age appropriateness, and cultural relevance, measures were selected, whenever possible, on the basis of their prior use with samples similar to the population in this study (e.g., African American families with school-aged children). Because of the relative dearth of such instruments, however, several measures were used that had not been validated with this population.

All measures were reviewed by focus groups of African Americans, who provided feedback concerning the sensitivity and ease of comprehension of each measure. In addition, 4th and 5th grade teachers provided feedback on the clarity of the child measures. Pilot testing was conducted to further corroborate the appropriateness of each measure.

Demographic Information

Mothers provided information on their marital status (coded as married or not married), family income (coded as \$0–199, \$200–499, \$500–999, \$1,000–1,999, \$2,000–2,999, \$3,000–3,999, and \$4,000 or more per month), and education level (coded as no high school, some high school, high school diploma or GED, some college, college or advanced degree). They also reported their child's age and gender. Participants were determined to live in an urban or rural setting based on the location of the study site (Rural = Athens, Georgia; Urban = Atlanta, Georgia and Little Rock, Arkansas).

Mother's Responsiveness

Mothers' perception of their responsiveness in communicating with their child about sex was measured by five items that assess knowledge, skills, comfort, and confidence in communicating with their child about sex. Questions were based on measures from the Family

Adolescent Risk Behavior and Communication Study (FARBCS) (Miller et al. 2000). The items were: 1) "If my son/daughter asked me a question about a sex topic, I would be glad s/he asked;" 2) If my son/daughter asked me a question about a sex topic, I would answer his/her question;" 3) "I feel comfortable talking to my son/daughter about sex topics;" 4) "I know how to talk to my child about sex topics" And 5) "I feel prepared to talk with my son/daughter about sex topics as s/he grows up." Response options ranged from 1 (*not at all true*) to 3 (*very true*). Responses to the five items were summed to create the responsiveness measure (possible range from 5 to 15). Coefficient alpha for the scale was 0.801.

Mother's Abstinence Attitude

The mother's abstinence attitude was measured with a single item, "I think my child should wait until s/he is married to have sex." Responses ranged from 1 (*not at all true*) to 3 *(very true)*.

Child's Readiness to Learn About Sex

Mother's perception of her child's readiness to learn about sex was measured with a single item, "My child is ready to begin learning about sex topics." Responses ranged from 1 (*not at all true*) to 3 (*very true*).

Child's Physical Development

Mother's assessment of her child's physical maturity was measured by three items for girls and four items for boys, all of which were based on a modified version of the Pubertal Developmental Scale (Petersen et al. 1988). Individual items were standardized within gender, averaged to form a scale, and then standardized to form a single measure of physical development for boys and girls. Two items—one referring to the growth spurt and one referring to the growth of body hair—were responded to by mothers of boys and girls; one item—breast development—was responded to by mothers of girls only; and two items—one about deepening of the voice and the other about the growth of facial hair—were responded to by mothers of boys only.

Communication About Sex Topics

Maternal communication was measured by one item for each of the three topics: abstinence or waiting to have sex, puberty or physical development, and reproduction or how babies are made. Questions were based on measures from FARBCS (Miller et al. 2000). Responses indicate whether mothers had ever discussed a given topic with their child. Children's reports of whether their mothers had ever talked with them about specific sex topics were measured by three parallel items covering the same topics as those in the parent measure.

Procedures

Families were recruited through community leaders and agencies (e.g., schools, churches, recreation programs). A community liaison, responsible for recruiting participants, developed partnerships with persons in the community who were affiliated with potential recruitment sites (e.g., staff members at a housing authority, principal of an elementary school). Using these contacts, the community liaison generated lists of potential participants to be contacted. Additional recruitment was achieved through community advertising, appearances at community events (e.g., health fairs, Parent–Teacher Association meetings), and participant referrals.

Prospective participants were screened for eligibility. The standardized screening form included a description of the program and questions regarding demographic status, program eligibility, and contact information. If the prospective participant family met the eligibility requirements and agreed to participate, an appointment was scheduled for formal consent and the baseline assessment.

Children signed an assent form and mothers signed their child's assent form as well as their own consent form prior to their participation. Each participant was then escorted to a computer to complete the assessment. To ensure confidentiality of responses and comfort during the assessment, mothers and children were situated at opposite ends of a room or in different rooms.

All questions were delivered visually on the computer screen and orally by a computerized voice over headphones. To further ensure confidentiality, interviews were completed individually and under the anonymity of an identification number instead of the participant's name. The assessment was designed to last approximately 45 min for mothers and 30 min for children, with allowance for individual variations. After completing the survey, each participant was debriefed. Families were paid $25 to cover expenses (e.g., transportation), and their time.

Data Analyses

A set of bivariate logistic regression analyses was conducted to determine the covariates to be included in all

subsequent multivariate logistic regression analyses. Mothers' reports of abstinence communication served as the dependent variable in the bivariate logistic regression analyses and variables with a *P*-value less than 0.25 were selected for the multivariable model, per recommendations made by Mickey and Greenland (1989). For ease of interpretation, the same set of covariates will be used in all analyses of mother and child data, except for mothers' abstinence attitude, which was included only in the analyses for abstinence communication.

The main study hypotheses were tested by two sets of multivariate logistic regression analyses—one set for mothers' reports of communication (about abstinence, about puberty, and about reproduction) and one set for children's reports of communication. Odds ratios from multivariable analyses were adjusted for all other covariates included in the analyses.

Results

Summary statistics for the sample are reported in Table 1. Table 2 provides frequencies and percentages for each of the six dependent variables. A high number of mothers reported talking to their child about sex topics, ranging from 70.3% to 78.2%, depending on the topic. Children's reports of communication about sex topics were typically lower than mothers' reports, and ranged from 60.9% to 83.6%, depending on the topic. Table 2 also summarizes the agreement rates for mother and child reports of communication, with 66.0–75.5% of the dyads agreeing that communication about a topic had or had not taken place.

Bivariate logistic regression analyses indicated the following covariates should be included in the multiple logistic regression models: urban verses rural setting, child's age, gender, physical development, and readiness to learn about sex, and mother's family income, abstinence attitude, and responsiveness. Multiple logistic regression analyses were performed, regressing mother's reports (Table 3) and child's reports (Table 4) of parent–child communication about abstinence, puberty, and reproduction onto each of these covariates (excluding mother's abstinence attitude from puberty and reproduction models).

The multiple logistic regression results support hypothesis one, namely that mother's responsiveness is positively

Table 1 Sample characteristics

	Frequency	Percentage
Mother currently married	391	36.71
Family monthly income		
$0–199	47	4.55
$200–499	150	14.51
$500–999	225	21.76
$1,000–1,999	310	29.98
$2,000–2,999	172	16.63
$3,000–3,999	80	7.74
$4,000 to or more	50	4.84
Setting		
Rural	310	29.08
Urban	756	70.92
Mother's education		
No high school	23	2.16
Some high school	238	22.37
High school or GED	314	29.51
Some college	224	21.05
College or advanced degree	265	24.91
Child gender		
Females	596	55.91
Males	470	44.09

	Mean	Standard error	Range
Child's age	10.53	0.03	
Child's physical development	0.22	0.02	−1.22, 2.62
Child's readiness to learn about sex	2.19	0.02	1, 3
Mother's age	36.65	0.26	22, 90
Mother's responsiveness	12.84	0.07	3, 15
Mother's abstinence attitude	2.74	0.02	1, 3

Note: Due to sporadic missing values, sample sizes will vary

Table 2 Dependent variable frequencies and rates of agreement between mother and child report of communication about abstinence, puberty, and reproduction

	Abstinence frequency (%)	Puberty frequency (%)	Reproduction frequency (%)
Talked			
Mother	737 (70.3)	829 (78.2)	751 (71.1)
Child	648 (60.9)	891 (83.6)	742 (69.7)
Mother–child agreement rates			
Agreed talked	515 (49.1)	729 (68.8)	564 (53.5)
Agreed did not talk	189 (18.0)	71 (6.7)	132 (12.5)
Total	704 (67.1)	800 (75.5)	696 (66.0)

Note: Due to sporadic missing values, sample sizes will vary

Table 3 Multivariate logistic regression analysis of mother's report of communication with their child about abstinence, puberty, and reproduction

Predictor	Wald χ^2	Adjusted odds ratio	95% Wald CI	
			Lower	Upper
Abstinence ($N = 1{,}004$)				
Income (Type III test)[a]	24.29**			
$0–199	1.57	1.62	0.76	3.46
$200–499	9.05**	2.09	1.29	3.39
$500–999	8.58**	1.85	1.23	2.80
$2,000–2,999	18.30**	2.81	1.75	4.51
$3,000–3,999	1.75	1.49	0.83	2.68
$4,000+	0.05	1.08	0.54	2.16
Urban/rural setting[b]	3.63	1.37	0.99	1.90
Child's age	15.34**	1.46	1.21	1.77
Child's gender[c]	11.00**	1.66	1.23	2.24
Child's physical development	5.10*	1.38	1.04	1.82
Child's readiness to learn about sex	5.63*	1.29	1.05	1.59
Mother's abstinence attitude	0.03	1.02	0.78	1.34
Mother's responsiveness	62.17**	1.34	1.25	1.44
Puberty ($N = 1{,}017$)				
Income (Type III test)[a]	7.73			
$0–199	0.07	1.12	0.48	2.59
$200–499	4.25*	1.87	1.03	3.39
$500–999	0.06	0.94	0.59	1.51
$2,000–2,999	2.11	1.49	0.87	2.55
$3,000–3,999	0.00	0.99	0.49	2.01
$4,000+	0.29	0.79	0.34	1.84
Urban/rural setting[b]	0.72	0.85	0.58	1.24
Child's age	5.00*	1.28	1.03	1.60
Child's gender[c]	103.50**	7.32	4.99	10.74
Child's physical development	8.10**	1.64	1.17	2.30
Child's readiness to learn about sex	1.36	1.16	0.90	1.49
Mother's responsiveness	81.04**	1.47	1.35	1.59
Reproduction ($N = 1{,}014$)				
Income (Type III test)[a]	23.76**			
$0–199	0.03	0.94	0.46	1.94
$200–499	5.19*	1.79	1.09	2.95
$500–999	0.03	1.04	0.69	1.56
$2,000–2,999	16.08**	2.81	1.69	4.64
$3,000–3,999	0.69	0.78	0.44	1.39
$4,000+	0.59	1.36	0.62	2.98
Urban/rural setting[b]	0.08	0.95	0.68	1.34
Child's age	3.35	1.20	0.99	1.45
Child's gender[c]	6.50*	1.49	1.10	2.02
Child's physical development	17.53**	1.85	1.39	2.46
Child's readiness to learn about sex	8.29**	1.37	1.11	1.69
Mother's responsiveness	88.84**	1.44	1.34	1.56

Note: * $P < .05$, ** $P < .01$

[a] The income range of $1,000–1,999 is the reference group

[b] Rural location is the reference group

[c] Males are the reference group

associated with mother–child discussions about sexual topics. Mothers with higher responsiveness possessed greater odds of discussing each topic with their child for reports of communication from both mother (Abstinence: Wald $\chi^2(1) = 62.17$, $P < 0.01$; Puberty: Wald $\chi^2(1) = 81.04$, $P < 0.01$; Reproduction: Wald $\chi^2(1) = 88.84$, $P < 0.01$) and from child (Abstinence: Wald $\chi^2(1) = 5.93$, $P < 0.05$; Puberty: Wald $\chi^2(1) = 11.21$, $P < 0.01$;

Table 4 Multivariate logistic regression analysis of child's report of communication with their mother about abstinence, puberty, and reproduction

Predictor	Wald χ^2	Adjusted odds ratio	95% Wald CI	
			Lower	Upper
Abstinence ($N = 1{,}014$)				
Income (Type III test, DF = 6)[a]	12.50			
$0–199	0.50	1.27	0.65	2.47
$200–499	8.27**	1.89	1.22	2.91
$500–999	1.61	1.27	0.88	1.83
$2,000–2,999	1.46	1.28	0.86	1.91
$3,000–3,999	0.08	0.93	0.55	1.56
$4,000+	1.00	0.73	0.39	1.36
Urban/rural setting[b]	0.34	1.09	0.82	1.46
Child's age	15.79**	1.40	1.19	1.66
Child's gender[c]	19.37**	1.82	1.39	2.37
Child's physical development	2.10	1.20	0.94	1.52
Child's readiness to learn about sex	6.11*	1.27	1.05	1.53
Mother's abstinence attitude	0.66	0.90	0.71	1.16
Mother's responsiveness	5.93*	1.08	1.02	1.15
Puberty ($N = 1{,}021$)				
Income (Type III test, DF = 6)[a]	8.97			
$0–199	3.86*	0.47	0.22	1.00
$200–499	0.79	1.31	0.72	2.37
$500–999	0.40	0.86	0.53	1.39
$2,000–2,999	2.33	0.68	0.41	1.12
$3,000–3,999	0.17	1.17	0.55	2.49
$4,000+	0.41	0.76	0.33	1.77
Urban/rural setting[b]	0.91	0.83	0.56	1.22
Child's age	7.19**	1.35	1.08	1.67
Child's gender[c]	19.13**	2.18	1.54	3.08
Child's physical development	6.66**	1.53	1.11	2.12
Child's readiness to learn about sex	0.32	1.07	0.84	1.37
Mother's responsiveness	11.21**	1.14	1.06	1.23
Reproduction ($N = 1{,}020$)				
Income (Type III test, DF = 6)[a]	6.65			
$0–199	0.15	1.15	0.57	2.30
$200–499	3.53	1.55	0.98	2.44
$500–999	1.85	1.31	0.89	1.93
$2,000–2,999	0.00	1.00	0.66	1.50
$3,000–3,999	0.04	1.06	0.61	1.83
$4,000+	0.66	0.77	0.40	1.46
Urban/rural setting[b]	4.63*	1.38	1.03	1.86
Child's age	4.08*	1.19	1.01	1.42
Child's gender[c]	1.96	1.22	0.93	1.60
Child's physical development	6.31*	1.38	1.07	1.78
Child's readiness to learn about sex	0.40	1.07	0.88	1.30
Mother's responsiveness	8.39**	1.10	1.03	1.17

Note: * $P < .05$, ** $P < .01$

[a] The income range of $1,000–1,999 is the reference group

[b] Rural location is the reference group

[c] Males are the reference group

Reproduction: Wald $\chi^2(1) = 8.39$, $P < 0.01$). The magnitude of effect was stronger for mother's reports than for child's reports of communication. For mother's reports, a one unit increase in responsiveness increased the odds of communication by 34% for abstinence (adjusted odds ratio = 1.34; 95% Wald CI 1.25–1.44), 47% for puberty (adjusted odds ratio = 1.47; 95% Wald CI 1.35–1.59), and 44% for reproduction (adjusted odds ratio = 1.44; 95%

Wald CI 1.34–1.56). For child's reports, a one unit increase in responsiveness increased the odds of communication by 8% for abstinence (adjusted odds ratio = 1.08; 95% Wald CI 1.02–1.15), 14% for puberty (adjusted odds ratio = 1.14; 95% Wald CI 1.06–1.23), and 10% for reproduction (adjusted odds ratio = 1.10; 95% Wald CI 1.03–1.17).

Hypothesis two, that sexual development cues are positively associated with discussions about sexual topics, was generally supported by the results; however, each cue did not achieve significance in all models. Child's age was significantly associated with discussions in all models (Mother's Report: Abstinence: Wald $\chi^2(1) = 15.34$, $P < 0.01$; Puberty: Wald $\chi^2(1) = 5.00$, $P < 0.05$; Child's Report: Abstinence: Wald $\chi^2(1) = 15.79$, $P < 0.01$; Puberty: Wald $\chi^2(1) = 7.19$, $P < 0.01$; Reproduction: Wald $\chi^2(1) = 4.08$, $P < 0.05$), except for mother's report of communication about reproduction in which child's age was only marginally significant (Wald $\chi^2(1) = 3.35$, $P < 0.10$). Child's physical development was significantly associated with discussions in all models (Mother's Report: Abstinence: Wald $\chi^2(1) = 5.63$, $P < 0.05$; Puberty: Wald $\chi^2(1) = 8.10$, $P < 0.01$; Reproduction: Wald $\chi^2(1) = 17.53$, $P < 0.01$; Child's Report: Puberty: Wald $\chi^2(1) = 6.66$, $P < 0.01$; Reproduction: Wald $\chi^2(1) = 6.31$, $P < 0.05$), except child's report of communication about abstinence. Child's readiness to learn about sex was significantly associated with discussions in three of the six models: mother's reports of communication about abstinence (Wald $\chi^2(1) = 5.63$, $P < 0.05$) and reproduction (Wald $\chi^2(1) = 8.29$, $P < 0.01$), and child's reports of communication about abstinence (Wald $\chi^2(1) = 6.11$, $P < 0.05$).

For most models, the results supported hypothesis three, that mothers are more likely to communicate with daughters than with sons. Female children possessed significantly greater odds of discussions than male children for all models except child's report of communication about reproduction (Mother's Report: Abstinence: Wald $\chi^2(1) = 11.00$, $P < 0.01$; Puberty: Wald $\chi^2(1) = 103.50$, $P < 0.01$; Reproduction: Wald $\chi^2(1) = 6.50$, $P < 0.05$; Child's Report: Abstinence: Wald $\chi^2(1) = 19.37$, $P < 0.01$; Puberty: Wald $\chi^2(1) = 19.13$, $P < 0.01$). This gender difference was especially evident in mother's reports of communication about puberty in which mothers had over seven times the odds of talking to a female child versus a male child (adjusted odds ratio = 7.32; 95% Wald CI 4.99–10.74).

Discussion

This study was designed to examine factors that promoted discussions about sexual topics between mothers and their preadolescent children. After controlling for all other covariates, mother's responsiveness was the most consistent predictor of early mother–child discussions about sexual topics. Having a daughter and cues related to age and puberty were generally facilitators for discussions about sexual topics. Taken together, these findings indicate that encouraging parents to talk with their children early may not be sufficient to promote these discussions, even in the face of sexual development triggers. Parents also need the knowledge, comfort, skills, and confidence to communicate effectively and keep them from avoiding these often difficult and emotional conversations with their children.

This critical role of responsiveness in promoting parent–child discussions about sexual topics contributes to literature suggesting that responsiveness is a key determinant in the effectiveness of parent–child discussions about sex to reduce adolescent sexual risk. First, responsiveness increases the concordance between mother and adolescent reports of having sex discussions, suggesting that adolescents pay more attention to sex discussions when mothers are responsive (Miller et al. 1998a). Second, parental responsiveness in parent–child discussions about sex is associated with lower levels of adolescent sexual risk (Dutra et al. 1999; Fasula and Miller 2006; Kotchick et al. 1999; Whitaker et al. 1999). In fact, the protective effect of mother–child discussions about sex on adolescent sexual risk has been found to be conditional on whether or not the mother was responsive during the discussions. Whitaker and colleagues (1999) found that mother–adolescent discussions about sex were positively associated with adolescents' communication with their sex partners and with condom use, but only when mothers were responsive in these discussions. Additionally, Fasula and Miller (2006) found that mothers with high responsiveness in parent–child discussions about sex buffered the negative effects of sexually active peers on adolescents' intentions to delay intercourse.

Parent–child communication about sexuality is a complex social process. In this study we only examined one aspect of the process—predictors of mother–preadolescent sexual discussions about three topics ever taking place. Our study findings suggest that future research in this area is warranted. First, although we hypothesized that responsiveness would increase future sex discussions, because of the cross-sectional design in this study, we were not able to test the causal direction of this association. It is possible that there is a bidirectional relationship between parent and child sex discussions and responsiveness. Such a relationship would suggest that the more parents have these discussions with their children, the more they will feel knowledgeable, comfortable, skilled, and confident in this arena, and therefore talk more to their children in the future. Longitudinal studies are needed to explore the possibility of such a bidirectional relationship.

Second, given that parents are not likely to have extensive discussions with their preadolescent children, we chose to focus our study outcome to a dichotomous measure of communication—ever talked or never talked. It is not clear from this measure, however, the frequency, content, or depth of these discussions. Additional research is needed to identify what factors affect the frequency, content, and depth of discussions and how these factors affect future parent–child discussions. In addition, there is the dearth of research on the effects of early parent–child communication on adolescent sexual risk behaviors. Additional research is needed to examine the relationship between parents ever talking to their preadolescents about topics such as abstinence, puberty, and reproduction and future sexual risk behaviors.

Third, our measurement of mother's responsiveness also is imperfect due to the narrow response metric deemed necessary by our pilot work with our population. We believe the low variability on this measure is an artifact of the response metric and not a reflection of a true ceiling effect in responsiveness in our population. Despite the limited measure we employed, we were able to find meaningful, positive associations between maternal responsiveness and communication about sex topics.

Finally, because this study used a convenience sample, the generalizability of findings to other groups is unknown. Additional research with other African American populations, as well as other racial and ethnic groups is needed. Finally, few validated scales exist for African American families with preadolescents. However, we made every effort to ensure understanding and clarity of the measures through our pilot work. Additional work is needed to identify valid measures for this study population.

Given the critical need to reach youth early with sexual risk prevention messages, overcoming communication barriers and enhancing the responsiveness of parents are essential for the promotion of HIV, STD, and pregnancy prevention. It would be particularly helpful for parents to develop responsiveness skills in conjunction with practicing having discussions about sex, and that the best time to practice these skills would be when their children are young, well before tackling the complex and emotionally charged sexual issues of adolescence.

Marketing campaigns can encourage parents to use earlier, pre-pubertal cues for the timing of age-relevant sexual discussions and to have these discussions with both sons and daughters. Furthermore, given the critical role of responsiveness in increasing the likelihood and effectiveness of parents' discussions with their children about sexual topics, more intensive programs with parents are also needed. Group interventions with parents can help them build their knowledge, comfort, skills, and confidence through role play and other interactive exercises. Such in-depth, hands-on group interventions with parents can provide them the tools and support they need to take an early and active role in guiding their children through their sexual development and helping them avoid sexual risk for HIV.

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