HEALTH EDUCATION RESEARCH
Theory & Practice

Vol.18 no.3 2003
Pages 341–351

No sex or safe sex? Mothers' and adolescents' discussions about sexuality and AIDS/HIV

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Abstract

The authors examined in this study whether mothers and adolescents discussed abstinence and safer sex, and how these discussions relate to demographic characteristics. Fifty mother–adolescent dyads (25 girls and 25 boys, aged 11–15) participated in videotaped conversations about two topics: (1) dating and sexuality, and (2) AIDS/HIV. These conversations were coded for specific topics. Both discussions of abstinence and safer sex occurred relatively infrequently during both conversations, although they were more common during AIDS than sexuality conversations and more for mothers than adolescents. The two topics were related—dyads who discussed one were more likely to discuss the other. Adolescents who discussed safer sex with their mothers tended to be older, less religious and have more educated mothers than those who did not. Using observational rather than self-report measures, this study revealed that the extent to which mothers and adolescents discuss abstinence and safer sex can depend on individual (age, gender, socioeconomic status and religious involvement) and contextual (conversational topic) factors.

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Introduction

> Before you know it, your kids are grown up, and on their own. The right time to talk to them about sex and other tough issues, is sooner than you think. (*Growing UP Fast*, TV Public Service Announcement, from www.talkingwithkids.org, 2001).

Public service announcements (PSAs) that target parent–child communication about sex or HIV/AIDS often convey the general message that parents should talk to their children about 'sex', without telling parents what specific topics to discuss. For instance, the *Talking to Kids about Tough Issues* campaign, co-sponsored by Children Now and the Kaiser Foundation, has aired several 30-s PSAs like the one just described. However, motivated by concerns for their children's health, most parents already know they need to talk. What they need goes beyond friendly nudging—they need to know how.

From a health-protective standpoint, the most important messages are perhaps about abstinence and/or safer sex in order to prevent the transmission of HIV, other sexually transmitted infections (STIs) and pregnancy. How may these messages actually be conveyed in parent–adolescent conversations? The current study examines which individual and contextual (conversation topic) factors are associated with more talk about abstinence and safer sex. Specifically, we focused on how frequently the topics of abstinence before marriage and/or safer sex occurred during mother–adolescent conversations about sexuality and AIDS/HIV, and how characteristics such as age, socioeconomic

doi: 10.1093/her/cyf015

status (SES) and religious involvement are associated with specific topics discussed. Unlike previous studies, the current study used observational rather than self-report measures.

Mother–adolescent conversations about abstinence and safer sex

Studies that have examined the association between communication about sex-related topics and adolescent sexual behavior have generally relied on single-item measures of sex-related communication or have summed across a number of items. Although these studies suggest that parent–adolescent communication about sex-related topics predicts adolescent sexual behavior, they have not identified what specific conversational topics do so [see (Jaccard *et al.*, 2002) for a review]. Within the broader field of adolescent health promotion, two specific areas have been identified as important: abstinence and safer sex (DiClemente, 1998; Jemmott *et al.*, 1998). In the current study, we were therefore particularly interested in mother–adolescent communication about abstinence and safer sex.

Our first goal was to examine how frequently abstinence and/or safer sex were discussed during conversations about sexuality and AIDS/HIV. Most studies of parent–adolescent communication have relied on self-report measures [e.g. (Fisher, 1986; Jaccard *et al.*, 1998; Raffaelli *et al.*, 1998; DiIorio *et al.*, 1999; Rosenthal and Feldman, 1999; Feldman and Rosenthal, 2000)]. Some have used scales that included items concerning abstinence and/or safer sex. Based on these studies, 41–75% of mothers and adolescents have discussed abstinence-relevant topics, whereas 27–77% have discussed safer sex-relevant topics (Pistella and Bonati, 1998; Raffaelli *et al.*, 1998; DiIorio *et al.*, 1999). Although many mothers and adolescents have talked about abstinence and safer sex at some point in their lives, they report having done so only once or twice in their lifetime (Rosenthal and Feldman, 1999). But what are the contexts in which these topics make their rare appearances? These contexts have important implications for prevention strategies including PSAs. For instance, if parents and adolescents discuss abstinence during conversations about AIDS/HIV more often than during conversations about sex, then programs interested in promoting abstinence should target conversations about AIDS/HIV. In this study, by asking mothers and adolescents to discuss sexuality and AIDS in two separate conversations and videotaping them, we could code how often these conversations included discussion about abstinence and safer sex. Thus, we could compare whether these topics were discussed more during conversations about sex or AIDS and which occurred more frequently—discussing abstinence or discussing safer sex. We also examined whether dyads who discussed abstinence were less likely to discuss safer sex than those who did not.

In this study, we used observational data to address a puzzle in the research literature. Several studies have included both mother and child reports of communication about sex, and have found that mothers report more frequent communication about sexual topics than do adolescents (Kotva and Schneider, 1990; Jaccard *et al.*, 1998; Feldman and Rosenthal, 2000; Lefkowitz *et al.*, 2002). These differences have generally been attributed to reporting biases or differing perceptions. However, it is possible that they actually reflect true differences in the conversations. Some questionnaires may prompt individuals to focus on how much they have been the active speaker when discussing these topics, rather than thinking about all conversations in which they have participated. Lefkowitz *et al.* found that when discussing sexuality, mothers talk more than their adolescent children do (Lefkowitz *et al.*, 2002). Thus, self-reported differences may reflect true differences between mothers and adolescents. A second goal of this study was to examine whether mothers and adolescents differ in how much they each discuss abstinence and safer sex. This difference has potential implications for the effectiveness of communication because research suggests that adolescents learn more when they are more active during such conversations [e.g. (Lefkowitz *et al.*, 1998)].

Relations between communication about sexual topics and demographic factors

To tailor interventions to the needs of different populations, it is important to understand how demographic characteristics relate to discussions of abstinence and safer sex. Therefore, the second goal of the current study was to examine these relations. Girls tend to report more frequent communication with their mothers about sexual topics than do boys, including the specific topics of abstinence, safe sex and condoms (Fisher, 1987; Raffaelli *et al.*, 1998; DiIorio *et al.*, 1999; Feldman and Rosenthal, 2000; Lefkowitz *et al.*, 2002). Thus, we predicted that mothers and daughters would discuss both abstinence and safer sex more frequently than would mothers and sons.

Some researchers have found that older adolescents talk to their mothers more about sexual topics than do younger adolescents (White *et al.*, 1995; Lefkowitz *et al.*, 2000a), whereas others have found no relation (Fisher, 1986; Pistella and Bonati, 1998; Raffaelli *et al.*, 1998). These conflicting findings may in part be due to differences in the topics included in questionnaires. Mothers may find certain topics more appropriate for younger adolescents (e.g. abstinence) and others for older adolescents (e.g. safer sex). The number of topics mothers and their children report discussing may depend on what topics are listed in the questionnaires. It is therefore important to go beyond asking 'how many topics' and ask instead 'what topics?'. We predicted that mothers and younger adolescents would be more likely to discuss abstinence, and mothers and older adolescents would be more likely to discuss safer sex.

Relatively little is known about the relation between SES and parent–adolescent communication about sexual topics. Lefkowitz *et al.* (Lefkowitz *et al.*, 2000a) found that higher SES related to more frequent sexuality communication, whereas Raffaelli *et al.* (Raffaelli *et al.*, 1998) found no association between amount of sexuality communication and mother's education or employment. In this study, we took another look at this issue. Because mothers of higher SES tend to be more knowledgeable about AIDS/HIV (Sweat and Levin, 1995; Lefkowitz *et al.*, 2000a), we expected these mothers to have a better understanding of the risks of teenage sexual behavior. Thus, we expected that mothers of higher SES would be more likely to discuss abstinence and safer sex with their children than would mothers of lower SES.

Similarly, few studies have examined how sexual communication varies as a function of religiosity. Some researchers have found that adolescents from more religious families tend to talk more with their mothers about sexual topics than those from less religious families (Fox and Inazu, 1980; White *et al.*, 1995). However, the specific topics discussed may vary depending on religious commitment. Fox and Inazu (Fox and Inazu, 1980) posited that more frequent sexuality communication among religious families reflects conservatism, with discussions focusing on morality and precaution. Thus, we predicted that more religious adolescents would be more likely to discuss abstinence and less likely to discuss safer sex with their mothers than less religious adolescents. In summary, we had the following goals:

(1) To understand the extent to which mothers and adolescents discuss abstinence and safer sex when talking about sexuality versus AIDS/HIV.
(2) To examine whether mothers and adolescents differ in how much they each discuss abstinence and safer sex.
(3) To examine how demographic characteristics are associated with discussions of abstinence and safer sex.

Method

Participants

Fifty mothers responded to flyers distributed at their children's schools describing a study designed to provide mothers with training for improving their communication with their children. Only data from the pre-test assessment are used in the current analyses. Dyads were paid $20 for this visit. Mothers and not fathers were included because

research suggests that mothers talk to their children about sexuality more frequently than do fathers (Fisher, 1986; Rosenthal and Feldman, 1999).

There were 25 daughters and 25 sons, ranging in age from 10.7 to 14.9 years (mean 12.7). Household incomes ranged from under $10 000 per year to more than $100 000, with a median annual income of $40–60 000. All mothers had graduated from high school and 68% had a college degree. Fifty percent of the mothers were married to the child's father, 46% were never married, divorced, separated or widowed and 4% were remarried.

The ethnic composition of the mothers in the study was as follows: 46% Caucasian (European-American, European, Persian or Middle Eastern), 18% Latino-American, 16% Black (African-American or African), 14% Asian or Pacific Islander and 6% mixed ethnicity. Thirty-six percent of the mothers were Protestant, 26% Catholic, 18% Jewish, 6% reported other religions, 12% reported no religion and 2% did not answer the question.

Procedures

The experimenter explained the procedures, and invited mothers and adolescents to give written consent and assent. Dyads were asked to engage in conversations while being videotaped. Only the mother and adolescent were present in the room during the conversations.

There were four 7-min conversations. The first conversation was always about everyday issues (a warm-up task) and was not used for the current analyses. The order of the remaining three conversations was randomized and counterbalanced across dyads. One of these conversations was about conflict issues, which was not used in the current analyses. The remaining two conversations were about dating and sexuality, and about AIDS/HIV. The exact instructions for these two conversations were, 'for the next 7 minutes, I'd like you to talk about dating and sexuality' and 'for the next 7 minutes, I'd like you to talk about AIDS'. 'AIDS' rather than 'HIV' was chosen because pilot testing suggested that mothers and adolescents were more familiar with the term 'AIDS' than 'HIV', and that they used the term 'AIDS' to include both the virus (HIV) and the disease (AIDS). Dyads were told that they could say whatever they would like about these topics. The instructions were intentionally broad because we wanted to discover what mothers and adolescents would choose to discuss during general conversations about sexuality and AIDS/HIV. We did not ask them to talk about safer sex and abstinence specifically because we were interested in learning whether mothers and adolescents would bring up these topics without prompting.

Measures

Demographic factors

Mothers and adolescents were asked to report on their age, ethnicity, religion and church attendance. Mothers also were asked about their family income, educational background and marital status. We used mother's years of education and household income as measures of SES.

Discussions of abstinence and safer sex

There were two phases of coding. During the first phase, three coders rated the number of seconds that dyads spent discussing *sex* during both conversations and the number of seconds spent discussing AIDS/HIV-related topics that did not pertain to sex (*AIDS-not sex*) during the AIDS conversation. The topic of *sex* included intercourse, other sexual activity, kissing, birth control, semen/vaginal fluids and puberty/physical development. The topic of *AIDS-not sex* included drug use, blood transfusions, giving blood, people they know who are HIV-positive or have AIDS, celebrities who are HIV-positive or have AIDS and whether AIDS can be transmitted through casual contact such as hugging or touching. Coders were trained until they reached a criterion reliability level of 0.75. Thirty-five percent of all tapes were coded by all coders; based on these dyads, intraclass correlations ranged from 0.73 to 0.97 ($x = 0.83$).

In the second phase of coding, the three raters coded the segments that were already coded as *sex* for specific abstinence and safer sex topics. Originally, only the topics of abstinence and safer

Table I. *Descriptions and examples of categories coded during conversations*

Category	Description	Examples
Abstinence	Not having sex until marriage	Son: It's a sin if you do it before because you made a covenant with God that, that, you have, you have to do it when you're married.
	Not having sex at all	—
		Son: And I think it's not good for people to do it before their time.
		Mother: Do what before their time? Ok, what, when you say before their time, what is their time?
		Son: Their time to get married. It's not good for them to do it before their time.
Safer sex	Using condoms	Daughter: So the moral is, safe sex.
	Having partner tested for HIV	Mother: What does it, do you know what that means?
	Having sex with 'virgins'	Daughter: use a condom.
	Limiting number of sexual partners	Mother: that's it?
	Not having sex with individuals known to be HIV-positive	Daughter: yes.
	Not having sex with prostitutes	—
		Mother: When you're sexually active and then you have a lot of different partners, that's a big no-no.
		—
		Mother: What about if you're going to have relations with a girl, why don't you pay $50 to get a blood test to see if she's HIV?
		Son: $50 for a blood test!
Protection	Reference to 'protection' or 'safe sex' without elaboration	Mother: Well so, I think part of what we're doing here today and what you learned in school is that once you become sexually active you have to be real careful because viruses and things do exist that are communicable.
Deferring sexual activity	Plan to wait until they are older	Mother: Well actually, you know, the truth is, I don't think you have to wait until you get married, but I think you should be in love with someone first, maybe like in college or something, that's just what I think.
	Wait until I am *X* years old	—
		Mother: Are you trying to tell me that you are going to have sex when you date somebody?
		Daughter: No, I told you like later, like 50 million years later.

sex were included. During training, however, the coders noticed two other recurring categories: mention of protection, being careful or safer sex without specifying what it meant and mention of the adolescent deferring sexual activity until a later age. Given our interest to discover what mothers and adolescents discussed, we decided to add these topics to the coding system (see Table I for descriptions and examples of these categories).

Raters recorded each time one of the four topics occurred, the speaker (mother or adolescent), the time it began and the time it stopped. The total number of seconds on a particular topic by a particular person tended to be relatively low. For instance, discussing safer sex during the conversation about AIDS was the most common of topics, but it was discussed for an average of 6.2 s (range = 0–47 s). As a result, we chose not to use the

duration data for analyses. Instead, we coded whether each individual discussed a particular topic in a particular conversation. Kappas were performed for each pair of the three coders. The overall mean κ across all pairs of coders, topics, conversations and speakers was 0.72. The mean across the three pairs of raters for any particular variable ranged from 0.83 to 0.58, which is considered to be in the acceptable range (Bakeman *et al.*, 1997). In instances that coders disagreed, all coders reviewed the conversation and discussed the content until mutual agreement was reached.

Results

The nature of discussions about abstinence and safer sex

How much do mothers and adolescents discuss sexual topics when talking about sexuality versus AIDS/HIV? The amount of time spent talking about sex did not differ between these two conversations [$M = 71.4$, SD = 65.2 during sexuality conversation, $M = 59.6$, SD = 53.4 during AIDS conversation, $t(48) = 1.06$, $P > 0.05$]. Dyads spent more time discussing non-sexual AIDS topics ($M = 193.1$, SD = 86.0) than sexual topics during the AIDS conversation, $t(48) = 8.30$, $P < 0.001$. When discussing AIDS, dyads brought up topics (other than abstinence and safer sex) such as people they knew personally who were HIV-positive, HIV-positive celebrities, and whether HIV can be transmitted through behaviors such as drug use, giving blood, blood transfusions and casual contact. Topics (other than abstinence and safer sex) that were discussed during the conversations about dating and sexuality included types of sexual activity (e.g. kissing, petting, 'making out'), puberty and physical development, sexual orientation, dating, romance, relationships, and love.

To compare the extent to which topics were discussed during conversations about AIDS versus conversations about sexuality, we performed within-subjects *t*-tests on the four topics coded (see Table II). Three of the four were significant and the remaining one revealed a trend. More dyads discussed safer sex when talking about AIDS (42% of dyads) than when talking about sexuality (6%). Similarly, more dyads discussed abstinence and used terms such as 'protection' when talking about AIDS than when talking about sex. In contrast, marginally more dyads talked about deferring sexual activity when discussing sexuality than when talking about AIDS.

To compare how much mothers versus adolescents discussed a particular topic, the proportion of individuals who discussed each topic was combined across conversations and between-subject *t*-tests were performed for the four topics coded (see Table III). Significantly more mothers used terms such as 'protection' and discussed deferring sexual activity until a later age than did adolescents. There was also a trend that more mothers (40%) discussed abstinence than did adolescents (30%). The proportion of individuals discussing abstinence versus safer sex was compared in a series of within-subjects *t*-tests (four tests were performed—one for each partner and conversation combination). None of these analyses turned out to be significant, ts(48) < 2.0, Ps > 0.05.

To examine the overall likelihood of discussing abstinence and safer sex, we pooled across conversations and partners to create two variables: whether dyads discussed abstinence and whether dyads discussed safer sex. We found that those dyads who discussed abstinence were more likely to discuss safer sex (67%) than those who did not discuss abstinence (24%), $t(48) = 3.26$, $P < 0.01$. This finding actually went against our prediction.

Relation between discussions and demographic factors

We had predicted that girls would be more likely to discuss abstinence and safer sex with their mothers than would boys. However, neither topic differed by adolescent gender, χ^2s(1, $n = 50$) < 1, Ps > 0.05.

We had predicted that younger adolescents would be more likely to discuss abstinence with their mothers and older adolescents would be more likely to discuss safer sex. The second prediction was confirmed. Adolescents who discussed safer

Table II. *Within-subject comparisons of proportions who have discussed topics, by subject (AIDS/sexuality)* (n = *50)*

Topic discussed	AIDS conversation (proportion discussed)	Sexuality conversation (proportion discussed)	*t*
Abstinence	0.36	0.18	2.44[b]
Safer sex	0.42	0.06	5.25[d]
Protection	0.26	0.06	3.13[c]
Deferring sexual activity	0.14	0.28	1.85[a]

[a]$P = 0.07$; [b]$P < 0.05$; [c]$P < 0.01$; [d]$P < 0.001$.

Table III. *Within-subject comparisons of proportion who have discussed topics, by conversational partner (mother/adolescent)* (n = *50)*

Topic discussed	Mothers (proportion discussed)	Adolescents (proportion discussed)	*t*
Abstinence	0.40	0.30	1.94[a]
Safer sex	0.38	0.28	1.70
Protection	0.28	0.12	3.06[b]
Deferring sexual activity	0.36	0.22	2.82[b]

[a]$P = 0.06$; [b]$P < 0.01$.

sex (M = 13.1 years, SD = 1.0) with their mothers were on average 10 months older than those who did not (M = 12.3 years, SD = 1.1), $t(48) = 2.50$, $P < 0.05$.

We had predicted that mothers with higher SES would be more likely to discuss abstinence and safer sex with their children than would mothers of lower SES. Indeed, mothers who discussed safer sex with their adolescents (M = 16.8 years, SD = 2.3) had an average of 1.5 more years of education than those who did not (M = 15.3 years, SD = 2.2), $t(48) = 2.37$, $P < 0.05$. Results were not significant for household income, ts(48) < 1.0, Ps > 0.05.

We had predicted that more religious dyads would be more likely to discuss abstinence and less religious dyads would be more likely to discuss safer sex. We used adolescents' reports of church attendance as a proxy measure of religiosity. There was a trend in differences in church attendance as a function of whether adolescents discussed safer sex with their mothers. Adolescents who discussed safer sex reported attending church less than twice a month (M = 19.0 times a year, SD = 22.9), whereas those who did not discuss safer sex reported attending church about once a week (M = 50.7 times a year, SD = 71.7), $t(48) = 1.90$, $P = 0.06$.

Discussion

In this study, more mothers and adolescents discussed abstinence and safer sex when talking about AIDS than when talking about sexuality. Also, more mothers than adolescents discussed the sexual topics examined. Contrary to our hypothesis, dyads that discussed abstinence were more likely to discuss safer sex than those who did not. Finally, adolescents who discussed safer sex with their mothers were older, less religious and had more educated mothers than those who did not.

Generalization of these findings, however, requires some caution. First, with this modest sample size, failure to find differences between groups may be due to insufficient power. Second, the sample is select, consisting of mothers and

adolescents who volunteered to be videotaped discussing sexual topics. These families are probably more likely to discuss these topics than the average family. Thus, the low rates of discussing specific topics observed in our study may well turn out to be an overestimate of such discussions in the general population in everyday life.

What are mother–adolescent conversations about AIDS/HIV and sexuality like?

One of the most surprising findings was that when mothers and adolescents were directly asked to talk about AIDS and sexuality for 7 min, neither abstinence nor safer sex came up for the majority of dyads. For instance, when discussing AIDS, only 42% of mothers mentioned safer sex ever and only 36% mentioned abstinence.

The rarity of safer sex and abstinence discussion—also revealed by questionnaire data (Rosenthal and Feldman, 1999)—has implications for both research and intervention. Researchers need to be specific when asking mothers and/or adolescents self-report questions about frequency of sex communication. Using one question such as 'Have you ever discussed sex?' or one general aggregate scale across questions about different sexual topics reveals little about how much of such discussion actually focuses on topics most pertinent to adolescents' health. Worse yet, these measures could overestimate parent–adolescent communication about sexual topics, as far as pregnancy and STI prevention is concerned. Researchers also should consider examining how occurrences of specific topics or clusters of topics differ by demographic characteristics, and the association between discussing specific topics and adolescent sexual behavior. In addition, those researchers specifically interested in observing parent–child conversations about abstinence or safer sex should adopt procedures designed to elicit these relatively infrequent discussions.

These findings also have implications for parent-based interventions including PSAs that target parents. Health promotion research suggests that messages about abstinence and safer sex are important for adolescents' sexual risk behaviors (Jemmott *et al.*, 1998). However, many PSAs that target parents do not suggest to parents specific topics to discuss with their children. Our findings suggest that mothers may not equate talking about sex and AIDS with talking about ways to avoid HIV, other STIs or pregnancy. Intervention developers therefore need to consider providing more specific information about abstinence and safer sex to parents than simply telling parents to talk to their children about 'sex' or 'AIDS'.

Safer sex and abstinence, according to our findings, were more commonly discussed during AIDS than during sexuality conversations. Thus, interventions aimed at encouraging parents to talk about preventive behavior should consider focusing parents' attention specifically to the subject of AIDS/HIV.

Mothers in our study were more likely to discuss health-protective behaviors than were adolescents. Our prior observational study also revealed that mothers tend to do more talking than adolescents when discussing sexuality (Lefkowitz *et al.*, 2002). Thus, the robust finding in questionnaire research that mothers report more sex communication than do adolescents may be more than reporting bias [e.g. (Jaccard *et al.*, 1998; Feldman and Rosenthal, 2000)], as previously assumed. These differences may reflect actual differences in behavior, i.e. adolescents who do not talk during these conversations may not encode them as conversations about sex or AIDS, or may not even be listening if mothers are dominating the conversations. By contrast, mothers' more active roles in these conversations may lead them to remember such conservations more accurately than adolescents do. Mothers, more so than adolescents, may also consider vague allusions to 'protection' (e.g. 'You need to be careful') to be discussions of sexuality. Interventions need to help mothers engage their adolescents effectively to enhance adolescents' involvement in such conversations [see (Lefkowitz *et al.*, 2000b)].

Dyads who discussed abstinence, we also found, were more likely to discuss safer sex than those who did not. It seems, then, mothers are more

likely to adopt an abstinence plus focus (i.e. abstinence plus information about safer sex) than to adopt an abstinence only approach to AIDS/HIV education. Mothers who do discuss abstinence probably recognize the importance of teaching about safer sex, 'just in case'. Given that the majority of teenagers become sexually active before marriage (Centers for Disease Control, 2000), safer sex may be a more realistic message than abstinence. However, given that many parents probably prefer that their children remain abstinent before marriage, it can be useful to help parents formulate how to talk to their children about reasons for abstinence, as well as how to engage in protective behavior if the children choose to become sexually active.

What demographic factors relate to discussions of abstinence and safer sex?

Despite self-report data that boys and girls differ in frequency of sex communication with their mothers (Raffaelli *et al.*, 1998; DiIorio *et al.*, 1999; Feldman and Rosenthal, 2000), we found no difference in the proportion of girls and boys who discussed abstinence or safer sex. This finding could be due to the short duration of such discussion obtained in our study. It could also indicate that the differences between girls' and boys' sex communication with their mothers reflect topics other than abstinence and safer sex. For instance, discussing physical development and menstruation may be more common for mother–daughter than mother–son dyads.

We found that adolescents who talked to mothers about safer sex tended to be older than those who did not. This finding is supported by some existing self-report data (White *et al.*, 1995; Lefkowitz *et al.*, 2000a). The age differences may reflect maturational differences, in that mothers of older and more physically mature adolescents are more likely to recognize the importance of protecting their adolescents from STIs; mothers of more mature teenagers may also be less likely to believe that abstinence alone will suffice. However, discussions of abstinence did not differ by age, suggesting that discussing abstinence is not replaced by discussing safer sex. It may be that mothers supplement, rather than abandon, their focus on abstinence.

In support of earlier work (Lefkowitz *et al.*, 2000a), mothers who discussed safer sex tended to be more educated than those who did not. Individuals of lower SES tend to know less about AIDS/HIV (Sweat and Levin, 1995) and, thus, may know less about safer sex practices than more educated individuals. For interventions designed to encourage parents to talk to their children about AIDS/HIV it is particularly important to ensure that the parents know enough about HIV. Less-educated mothers may feel uncomfortable talking to their children about AIDS/HIV without first learning more about it. By 'less-educated mothers', we are not referring to only mothers of very low levels of education. After all, in our study, the mothers who did not talk to their children about safer sex, although less educated than those who did, still averaged 15.6 years of education, just short of a Bachelors degree.

Our findings contradict prior research that adolescents from more religious families tend to talk more with their mothers about sexual topics than those from less religious families (Fox and Inazu, 1980; White *et al.*, 1995). It is important to note, however, the specific topics that we examined, i.e. abstinence and safer sex, are different from the broader topics used in studies that found such self-reported differences in discussing sexual topics. It is possible that more religious families discuss topics such as sexual values and the morality of sexual activity. In contrast, as our findings suggest, safer sex is more commonly discussed among less religious families than more religious families. More religious adolescents may hence be less likely to learn from their mothers how to protect themselves from HIV infection if they become sexually active. This finding has implications for designing interventions. Intervention programs that stress discussing safer sex and condoms may make more religious mothers uncomfortable, and therefore may be less effective with these mothers. However, without intervention, adolescents from religious families who do become sexually active

may be at greater risk when it comes to health-protective behaviors. Therefore, developers of parent-based interventions need to consider their targets' religiosity to incorporate both abstinence and safer sex effectively in their parent training components.

Conclusion

Mothers who say that they talk to their children about sex or AIDS may not be teaching their children effective ways to prevent HIV infection, i.e. abstinence and safer sex. These topics seem to be more common, although still infrequent, when discussing AIDS/HIV than when discussing sexuality. PSAs and parent-based interventions that simply instruct parents to 'talk to their children about sex' may fail to provide parents with the information necessary to teach their adolescents how to protect themselves from HIV infection. Interventions designed to improve communication about these topics between parents and adolescents should consider teaching parents about HIV transmission, being clear about what topics to cover, and tailoring programs based on adolescent age, SES and religiosity.

Acknowledgements

We are grateful to Rebecca Bidwell, Jeffrey Brooke, Aída Cristina Fernández, Candice Henson, Kate Morrison, Heather Pettersen and Anna Pierce for their help with data coding, entry and checking, and to Donna Ballock for her help with manuscript preparation. We also thank the mothers and adolescents who dedicated their time to this study. This work was supported by National Institute of Mental Health grant MH54151 to M. S. and Individual National Research Service award MH11225 to E. S. L.

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Received on June 26, 2001; accepted on March 13, 2002