Social Cognitive Factors Associated with Mother–Adolescent Communication About Sex[1]

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DiIorio C, Resnicow K, Dudley WN, Thomas S, Wang DT, Van Marter DF, Manteuffel B, Lipana J. (2000). Social cognitive factors associated with mother-adolescent communication about sex. *JHealth Commun*, *5*(1), 41-51.

Abstract:

To better understand why some mothers talk to their children about sex and others do not, we examined the role of two social cognitive variables- self-efficacy and outcome expectancies- in explaining sex-based communication. The present study was part of a larger study to test the efficacy of two HIV prevention programs for mothers and their adolescents. Mothers and their adolescents were recruited from a large community organization that serves youth who live in disadvantaged circumstances. The sample for the present study included 486 mothers who averaged 38.4 years of age (SD = 6.73). The majority were African American (97.7%), not married (66.7%), and had a high school degree (89.5%). Their adolescents ranged in age from 11 through 14 years of age and most were male (61.3%). The results of the analysis revealed that mothers who expressed higher levels of self-efficacy and more favorable outcomes associated with talking to their children about sex were more likely to do so. In a regression analysis, we learned that the mother's degree of efficacy beliefs, along with her expected outcomes associated with talking about sex, the importance of religious beliefs to her, and the age and sex of her adolescents were important factors associated with talking with them about sex.

Article:

Parental involvement in educating adolescents about sex has taken on a new sense of purpose in the era of AIDS. Although studies are not comprehensive and their results tend to be mixed, there is evidence to suggest that adolescents who talk to their parents about sex are likely to initiate sexual intercourse later than their peers (Leland & Barth, 1993; DiIorio, Kelley, & Hockenberry-Eaton, 1999), and are more likely to use condoms and contraception when they become sexually active (Holtzman & Rubinson, 1995; Kotva & Schneider, 1990; Miller, Levin, Whitaker, & Xu, 1998). Each of these outcomes is also associated with HIV prevention efforts. That is, adolescents who delay the initiation of sexual intercourse or use condoms

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This work was funded by the National Institute of Mental Health] R0] MH 557]0-03.

reduce their risk of contracting HIV. Because parent-adolescent sex-based communication is now being considered a primary mode for HIV and pregnancy prevention for young people (Holtzmann & Rubinson, 1995; Leland & Barth, 1993), it is important to examine factors that are associated with this communication. Although the content and pattern of parent-adolescent sex-based communication have received considerable attention in the literature (Miller, Kotchick, Dorsey, Forehand, & Ham, 1998; Nolin & Peterson, 1992; Tucker, 1989), there has been little study of parental factors that might foster such communication. In order to better understand why some parents talk to their children about sex and others do not, we examined the role of two social cognitive variables in predicting sex-based communication. We wanted to determine if parents who express more confidence in their ability to communicate about sex and more positive outcomes would report more sex-based communication with their adolescents.

BACKGROUND

As noted above, research on parent-adolescent sex-based communication has focused primarily on describing the content and pattern of discussions. Briefly, sex- based communication includes both the transmission of facts and values (Hepburn, 1983). Parents often present factual information to their children including explanations of physiological events such as conception and menstruation. Values can be transmitted as well either through discussions about behaviors and events occurring among friends and relatives (i.e., a teen friend's pregnancy or the divorce of an uncle) or the discussion of societal issues such as abortion, unwed parenthood, and promiscuity (DiIorio, Hockenberry-Eaton, Maibach, Rivero, & Miller, 1996; Hepburn, 1983; Nolin & Peterson, 1992). With respect to the pattern of communication, mothers are more likely than fathers to talk with their children about sex, and, as might be expected, mothers talk more to daughters than to sons, and fathers talk more to sons than to daughters (DiIorio et al., 1999; DiIorio et al., 1996; Nolin & Peterson, 1992; Warren & Neer, 1986). Same-sex (e.g., mother-daughter) communication is likely to include both factual and value-based information, whereas cross-sex (e.g., father-daughter) communication is often about transmission of values instead of facts (Nolin & Peterson, 1992). Because mothers are more likely to transmit information to their children and because mothers are more likely to talk with their daughters than with their sons, it is not surprising that findings of studies show that daughters are more often the recipients of sexual instruction within the family than are sons (DiIorio et al., 1996; Fox & Inazu,1980).

The affective component of sex-based communication has also been investigated. Studies show that both parents and their adolescents report varying degrees of comfort with talking about sex. Mothers report more comfort than daughters (Fox & Inazu, 1980), and there is evidence that the communication of factual information is less difficult than the discussion of more personal issues such as when it is alright for a teen to have sex (Nolin & Peterson, 1992). The findings of studies also suggest that comfort might be associated with frequency of conversations; research shows that the more parents converse about sex issues, the less discomfort they feel (DiIorio et al., 1996). Likewise, discussion of sexual issues increases when communication between the parent and the adolescent is considered more open (Miller, Kotchick et al., 1998).

Incorporation of parent-adolescent communication about sex into HIV prevention programs can be facilitated by understanding factors associated with such discussion. Unfortunately, little research has been conducted in this area. Fisher (1990) is one of the few researchers who has explored the topic. In a study of college students, Fisher (1990) found that the extent to which

sex was discussed by mothers was related to openness in general family communication, the extent to which the mother's own mother had discussed sex with her, and the sex of the child. Mothers who were more likely to discuss sex with their children perceived greater openness in general family communication and reported more communication about sex with their own mothers. Mothers were also more likely to talk with their daughters than their sons. The present study was conducted to extend those findings by examining other factors that might be related to the willingness of mothers to discuss sex with their adolescents.

The study was guided by a set of propositions derived from social cognitive theory that proposes that individuals who are confident in the performance of a particular behavior and envision positive outcomes associated with that behavior are more likely to perform the behavior than those who are not confident or expect negative outcomes (Bandura, 1997). In this study, we focused on sex-based communication as the behavior and evaluated the association between two social cognitive constructs (self-efficacy and outcome expectancies) and the mother's self-reported level of communication with her adolescent about sex.

METHOD

Procedures

The present study was part of a larger research project that tested the efficacy of two community-based HIV prevention programs for adolescents. The project, called Keepin' it R.E.A.L.! consisted of two separate programs, both of which included adolescents and their mothers in the intervention and assessment components of the study. In both programs, adolescents learned information and skills to reduce their risk of contracting HIV, and mothers were taught information and skills to enhance their ability to assist adolescents in making appropriate decisions about sexual health. Eligibility criteria for enrollment in the study were: (1) a stable mother- adolescent relationship- defined as living together for the past year (women who were not biological mothers must have served in the mothering role for the past year); (2) an adolescent between 11 and 14 years of age at the time of the baseline interview; and (3) both mother and adolescent willing to participate.

Keepin' it R.E.A.L.! was a collaborative project conducted in close cooperation with a large community organization dedicated to providing support and education for children living under disadvantaged circumstances. Eleven of the organization's 17 sites in a large southeastern metropolitan area were included in the study. Before it began, the study was approved by the human investigation committee at the researchers' institution and by officials of the community organization. Using lists of adolescent members, project recruiters called mothers on the telephone to determine eligibility and invite them to participate in the project. Enrollment required that both the adolescent and mother participate. Mothers and adolescents who agreed to participate first completed a baseline interview. Before the interview, informed consent was obtained from the mother for both herself and her adolescent, and assent was obtained from the adolescent. Mothers and adolescents each received $20 for completing the baseline interview. Because mothers could have more than one adolescent between 11 and 14 years of age in the study, they completed a separate interview for each child in the study. The present analysis was limited to the responses of mothers for the first adolescent who participated in the study.

Sample

The sample for the present study included 486 mother-adolescent dyads. The mean age of the mothers was 38.4 (SD = 6.73). The majority of the mothers were African American (97.7%) and not married (66.7%) (Table 1). In terms of education, most of the mothers had participated in schooling beyond the 12th grade (55.6%), and only 10.5% did not have a high school degree. The overwhelming majority of the mothers considered religion as either "quite" or "very important" (94.3%) and 46.9% attended religious services "about once a week or more." As a criterion for participation into the larger study, adolescents ranged in age from 11 to 14. Most adolescents were age 11 (32.7%),12 (25.7%), or 13 (25.1%), and male (61.3%).

Measures

Sex-based communication was defined as the mother's self-reported discussions about sexual issues with her adolescent and was measured by a 20-item scale. The items on the scale were selected from a review of the literature of previous studies that have assessed parent-adolescent sex-based communication as well as information obtained from focus groups conducted by the investigators and their previous experience in this area. The items were designed to assess communication about factual information such as menstrual cycle and birth control pills and value-based communication addressing topics such as the benefits of not having sex until one is older and what the mother thinks about teens having sex. For each of the 20 items, participants indicate whether or not they had ever discussed the topic with their adolescent. Each item begins with the stem, "Have you ever talked with your adolescent about ...." To ensure that the responses of the mother are related to the adolescent in the study, the interviewer substitutes the name of the mother's adolescent for the term your adolescent in the stem. Responses are recorded as yes or no, and yes responses are summed to yield a total score. Higher scores correspond with a greater number of sex-based topics discussed. An earlier version of the scale consisting of 18 items used in a previous study had a reliability coefficient of .80. The reliability coefficient as measured by the coefficient alpha for the present sample of responses was .90, indicating a relatively high level of internal consistency reliability.

Self-efficacy, defined as confidence in the mother's ability to discuss sexual issues with her adolescent, was measured by a 16-item scale. The items, developed for the scale based on the definition of self-efficacy presented by Bandura (1986), were selected from a review of the literature, focus group data, and previous experience by the investigators. Items were written to reflect confidence in providing factual information and confidence in transmitting values. Items were reviewed by a panel of experts familiar with social cognitive theory, and, based on their recommen-

TABLE 1 Demographic Characteristics of Mothers and Their Adolescents ($N = 486$)

Characteristic	Frequency	Percent
Mother's age		
<35	161	33.1
35–39	161	33.1
40–44	97	20.0
45 and older	67	13.8
Race		
African American	469	97.7
White	9	1.9
Hispanic	2	.4
Marital status		
Not married	324	66.7
Married	162	33.3
Education		
<12th grade	51	10.5
12th grade	164	33.9
>12th grade	269	55.6
Religious service attendance		
Never	28	5.8
Rarely	75	15.5
Once or twice a month	154	31.8
About once a week or more	227	46.9
Religious beliefs		
Not at all important	3	.6
Slightly important	7	1.4
Moderately important	18	3.7
Quite important	44	9.1
Very important	413	85.2
Adolescent's age		
11	159	32.7
12	125	25.7
13	122	25.1
14	80	16.5
Adolescent's sex		
Male	298	61.3
Female	188	38.7

dations, slight changes were made in the wording of several items. Each item is rated on a 10-point scale ranging from 1 not sure at all to 10 completely sure, and each item is preceded by the stem, "You can always explain to your adolescent ...."When reading the stem, the interviewer substitutes the name of the adolescent for the term your adolescent. An example of an item is, "You can always explain to your adolescent what is happening when a girl (or she) has her period." Total possible scores for the scale range from 16 to 112 with higher scores indicating

higher self- efficacy for talking to their adolescents about sex. Cronbach's alpha for responses of the present sample for the scale was .87, indicating an acceptable level of internal consistency.

Beliefs about the outcomes associated with talking to one's teen about sexual issues were assessed using the outcome expectancy scale. Using social cognitive theory as the basis for scale development, items were selected from a review of the literature, focus group data, and discussions with investigators familiar with social cognitive theory and parent--adolescent sex-based communication. Items were reviewed by a panel of experts in social cognitive theory and instrument development. The 15 items were each rated on a 5-point scale from 1 strongly disagree to 5 strongly agree. Each item begins with the stem, "If you talk to your adolescent about sex (including topics such as waiting to have sex until he or she is older, birth control, physical changes of puberty, menstruation/wet dreams and HIV/AIDS). ..."When reading the stem, the interviewer substitutes the name of the adolescent for the term your adolescent and used the appropriate pronoun (i.e., he or she). An example of an item is, "If you talk to your adolescent about sex (...), you will be embarrassed." Total scores are found by summing responses to each item. Items are recorded so that higher scores correspond to more positive outcome expectancies toward talking to adolescents about sex. Cronbach's alpha for responses for the present sample of participants was .84.

Information was collected from mothers on their age, race, marital status, education, frequency of attendance at religious services, and importance of religious beliefs. Religious service attendance was measured by response to the item, "How often do you attend religious services?"Four options were provided ranging from never to about once a week or more. Importance of religious beliefs was measured by response to the item, "How important are your religious beliefs to you?"Five options were provided ranging from not at all important to very important. From the adolescent's interview, we obtained data on the adolescent's age and sex.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences, Windows Version 8.0 (SPSS 1998). Prior to regression analysis, we evaluated the data for adherence to the assumptions underlying multiple regression- normality, homoscedasticity of residuals, and lack of multicollinearity (Kleinbaum, Kupper, & Muller, 1988). The first step in the analysis was to assess the correlations among the variables in the study (Table 2). Briefly, sex-based communication was correlated significantly with outcome expectancies ($r = .369$, $p < .001$), self-efficacy ($r = .351$, $p < .001$), adolescent's age ($r = .274$, $p < .001$), adolescent's sex ($r = .226$, $p < .001$), and importance of religious beliefs ($r = .127$, $p < .01$). Thus, mothers who expressed more positive outcome expectancy, greater self-efficacy, and greater importance of religious beliefs reported discussing a greater number of topics with their adolescents. Mothers tended to talk more with daughters, and the number of topics discussed increased with the age of the adolescent. The results also showed that self-efficacy was positively associated with outcome expectancies ($r = .450$, $p < .001$).

Hierarchical multiple regression analysis was employed to test the hypotheses for this study (Cohen & Cohen, 1983). Background variables of mother's age, marital status, education, importance of religious beliefs, and frequency of atten.

TABLE 2 Correlations Among Study Variables

Item	1	2	3	4	5	6	7	8	9	10
1. Sex-based communication	–	.351**	.369**	−.017	−.029	.022	−.016	.127**	.274**	.226**
2. Communication self-efficacy		–	.450**	−.061	.015	.079	−.036	.025	.054	.165**
3. Communication outcome expectancies			–	−.011	.035	.123**	.044	.068	.049	.095*
4. Mother's age				–	.085	.033	.118**	.116*	.126**	.056
5. Marital status					–	.169**	.190**	.080	.022	.039
6. Education						–	.178**	.016	−.008	.046
7. Religious service attendance							–	.382**	−.044	−.032
8. Religious beliefs								–	−.031	−.009
9. Adolescent's age									–	.004
10. Adolescent's sex										–

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

TABLE 3 Summary of Hierarchical Regression Analysis for Variables Predicting Mother–Adolescent Communication

	B	*SE B*	*β*	*p*
Model 1				
Age	−.003	.002	−.073	.092
Martial status	.024	.025	−.040	.353
Education	.006	.008	.035	.422
Frequency of religious service attendance	−.014	.014	−.046	.330
Religious beliefs	.074	.020	.172	.000
Adolescent's age	.073	.011	.294	.000
Adolescent's sex	.127	.024	.225	.000
Model 2				
Age	−.002	.002	−.051	.204
Martial status	−.026	.023	−.044	.268
Education	−.001	.007	−.007	.866
Frequency of religious service attendance	−.011	.013	−.037	.392
Religious beliefs	.062	.018	.144	.001
Adolescent's age	.067	.010	.268	.000
Adolescent's sex	.099	.022	.174	.000
Communication self-efficacy	.151	.026	.250	.000
Communication outcome expectancies	.056	.013	.188	.000

Note. $R^2 = .158$ for Model 1; $R^2 = .292$ for Model 2.

dance at religious services along with adolescent's age and sex were entered into the analysis first followed by self-efficacy and outcome expectancies. As shown in Table 3, the background variables entered in Model 1 explained almost 16% of variance, and Model 2, which included the background variables and the social cognitive variables, explained 29% of the variance, an increase of 13% over Model 1. This increase was significant ($F = 2,471) = 44.58$, $p < .001$. The variables that were significant in Model 2- final model- were self-efficacy, outcome expectancies, adolescent's age, and importance of religious beliefs. Because the amount and type of communication has been found to differ by the sex of the adolescent (DiIorio et al., 1999; Nolin & Peterson, 1992), we conducted two additional regression analyses- one for male adolescents and one for female adolescents. For males, the final model explained almost 23% of the variance. In this model, self-efficacy, outcome expectancies, age of the adolescent, and importance of religious beliefs of the mother were significant. For females, almost 35% of variance was explained, and the variables that were significant were the same as those for the males.

DISCUSSION

The primary purpose of this study was to assess the role of social cognitive variables in fostering sex-based communication between mothers and their adolescents. With respect to factors associated with talking about sexual issues with adolescents, the present study extends previous studies by examining the influences of the mother's self-efficacy and outcome expectancies on sex-based communication. Correlation analyses reveal that both self-efficacy and outcome

expectancies are significantly associated with sex-based communication, and in regression analysis, self-efficacy and outcome expectancies along with the importance of religious beliefs of the mother and the age and sex of the adolescent are important in explaining mother-adolescent sex-based communication. Mothers who report more confidence in their ability to talk with their sons and daughters about sexual issues are more likely to do so, as are mothers who report more positive outcomes associated with talking about sex.

The findings of the present study are similar to those of other studies that have assessed the self-efficacy and outcome expectancies links to behavior. Previous studies assessing the role of self-efficacy and outcome expectancies in the enactment of health behaviors have examined a wide range of health behaviors in both adults and adolescents. Studies have addressed behaviors such as exercise (Garcia et al., 1995), smoking cessation (Chung & Elias, 1996), health promotion (Parcel et al., 1995; Resnicow et al., 1997), and self-management (DiIorio, Faherty, & Manteuffel, 1994). Those studies have generally found that participants who are more confident that they can perform a particular behavior are likely to do so. Moreover, the greater their belief that the outcomes of performing the behavior are positive, the more likely they are to perform the behavior. The findings of the present study then adds to this growing list of health behavior studies whose findings support major propositions derived from social cognitive theory (Bandura, 1986, 1997). The cumulative findings verify the usefulness of social cognitive theory as a framework for developing health promotion programs.

The findings of this study also extend the research of Fisher (1990), who first explored factors associated with parent-adolescent sex-based communication. Fisher examined the maternal and paternal factors associated with sex-based communication and found that mothers and fathers who reported a high degree of openness in their communication with adolescents and whose own parent had discussed sex with them were more likely to discuss sexual issues with their adolescents. Although not examined in the present study, it might be possible that parents who express more open communication about general topics might feel more confident in discussing sex with their children and expect more positive outcomes as a result of the discussion. Future research could address these relationships.

Mothers in this study were more likely to discuss sex-based topics with their daughters. These findings are similar to a number of studies that have shown that same-sex parent-adolescent discussions about sex are generally more common than cross-sex discussions (DiIorio et al., 1999; Nolin & Peterson, 1992; Warren & Neer, 1986). Because mothers generally provide more sexual instruction to offspring than do fathers, there is a concern that boys might not be receiving adequate instruction, particularly as it relates to values.

The findings also show that mothers who profess that their religious beliefs are very important talk about more sex-based topics with their adolescents. Mothers who are secure in their religious beliefs may also hold firm beliefs about teenage sexuality. Thus, they may be more certain about what to say to their adolescent and when to say it. It may be that those with strong religious beliefs have a heightened sense of duty as a parent to educate their children on moral and ethical issues, including issues related to sexuality.

IMPLICATIONS

The traditional approaches to HIV and pregnancy prevention are adolescent centered, and most adolescent-centered programs are delivered through schools or community-based organizations. There is a growing trend, however, toward family-based HIV and pregnancy prevention programs. At the core of those programs is the parent who serves in the teaching role. The results of the present study suggest that parents who feel confident that they can talk about sexual issues with their adolescents and believe that the discussions will lead to positive outcomes are more likely to communicate on a wider range of sexual topics. Thus, the results suggest that family-based programs should include opportunities for parents to learn basic information about HIV, pregnancy prevention, puberty, sexual issues, and community resources so that they will feel more confident that the information that they are presenting to their children is appropriate and accurate. Programs for parents should also include the development of other skills, such as how to overcome an adolescent's resistance to talking about sex, promoting an atmosphere of trust and openness, and how to initiate talks is important as well.

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