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Authors	Miller, Kim S.;Lin, Carol Y.;Poulsen, Melissa N.;Fasula, Amy;Wyckoff, Sarah C.;Long, Nicholas;Armistead, Lisa
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## ENHANCING HIV COMMUNICATION BETWEEN PARENTS AND CHILDREN: EFFICACY OF THE PARENTS MATTER! PROGRAM

Kim S. Miller, Carol Y. Lin, Melissa N. Poulsen, Amy Fasula,  
Sarah C. Wyckoff, Rex Forehand, Nicholas Long,  
and Lisa Armistead

We examine efficacy of the Parents Matter! Program (PMP), a program to teach African-American parents of preadolescents sexual communication and HIV-prevention skills, through a multicenter, randomized control trial. A total of 1115 parent-child participants were randomized to one of three intervention arms (enhanced, brief, control). Percentages and 95% confidence intervals compare parents' perception of child readiness to learn about sexual issues, communication effectiveness, and dyad concordance from baseline to 12 months postintervention. Wilcoxon rank sum tests compare the changes in scores measuring communication content in HIV/AIDS, abstinence, and condom use. Compared to control, parents in the enhanced arm increased perception of child readiness to learn about sex (16% vs. 29%;  $p < .001$ ), and a greater proportion of parent-child dyads reported concordant responses on communication topics: HIV/AIDS (15%, 95% CI = 8-21%;  $p < .001$ ), abstinence (13%, 95% CI = 7-20%;  $p < .001$ ), condoms (15%, 95% CI = 9-22%;  $p < .001$ ). Increases in communication scores in HIV/AIDS, abstinence, and condom use were greater in the enhanced arm than control ( $p < 0.01$ ). We conclude that the enhanced PMP can help parents educate children about HIV and prepare children to avoid sexual risk.

Adolescents and young adults (aged 13-29) have the highest proportion of new HIV infections of any age group in the United States (Hall et al., 2008). HIV infection also disproportionately affects minority groups, particularly African Americans. Blacks (including African Americans) make up approximately 13% of the U.S. population

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Kim S. Miller and Melissa N. Poulsen are with the Division of Global AIDS, Center for Global Health, Centers for Disease Control and Prevention (CDC), Atlanta, GA. Carol Y. Lin is with the Division of STD Prevention and Amy Fasula is with the Division of HIV/AIDS Prevention, NCHHSTP, CDC, Atlanta, GA. Sarah C. Wyckoff is with the University of North Carolina, Chapel Hill. Rex Forehand is with the University of Vermont, Burlington. Nicholas Long is with the University of Arkansas Medical Sciences Center, Little Rock. Lisa Armistead is with Georgia State University, Atlanta.

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Address correspondence to Dr. Kim Miller, Centers for Disease Control and Prevention, Center for Global Health, Division of Global HIV/AIDS, 1600 Clifton Rd., NE, Mailstop E-04, Atlanta, GA 30333; e-mail: kmiller@cdc.gov

but account for almost half of the people who are infected with HIV (Centers for Disease Control and Prevention, 2007). As a result of the high HIV infection rate, AIDS is a leading cause of death for young African American adults (ages 25-34) (U.S. Department of Health and Human Services, 2007). Given the life expectancy estimates following HIV diagnosis—which have increased from approximately 10 years in 1996 to over 20 years in 2005 (Harrison, Song, & Zhang, 2010)—and trends that show about 40% of people diagnosed with AIDS had their first HIV test less than 12 months before their AIDS diagnosis (CDC, 2007), the majority of young adults who die as a result of AIDS were likely infected while adolescents. There is clearly a need for HIV prevention efforts among African American youth.

In addition, African American adolescents are more likely than adolescents from other racial/ethnic groups to engage in sexual activities that place them at risk for HIV and other sexually transmitted infections (STIs) (CDC, 2008). Approximately two thirds (66.5%) of African American high school students have engaged in sexual intercourse, and 27.6% have had sexual intercourse with four or more partners (compared with 47.8% and 14.9% for all high school students, respectively). Early age of sexual debut is also a significant concern. Overall, 7.1% of students report having had sexual intercourse before age 13 years, whereas the percentage for African American high school students is 16.3% (26.2% for African American males, 6.9% for African American females). Furthermore, findings from a nationally representative sample of young adults (aged 18-26) suggest that owing to high prevalence sexual networks, even normative sexual behaviors can put African American young adults at high risk for STIs/HIV (Hallfors, Iritani, Miller, & Bauer, 2007). Thus, although African American high school students reported the highest rates of condom use at most recent sexual intercourse among sexually active students, it is concerning that approximately one third (32.7%) reported not using a condom during their most recent act of sexual intercourse (CDC, 2008).

Based on such epidemiological data, HIV prevention efforts need to target youth early, prior to onset of sexual activity which, for many African American youth, begins prior to age 13. Unfortunately, most sexual risk prevention interventions for youth primarily target older adolescents, many of whom are likely already engaging in sexual risk behaviors (Lyles et al., 2007). For example, school-based prevention programs typically target youth in junior high or high school, and these programs generally provide a limited range of information (Armistead, Kotchick, & Forehand, 2004). Given that youth who receive prevention information prior to sexual debut are less likely to engage in sexual risk behaviors (K.S. Miller, Whitaker, & Xu, 1998), prevention programs are needed to provide preadolescent children with age-relevant sexual health and sexual risk prevention information. Parents are uniquely positioned to fill this role, as they are in an ideal position to be the most effective early sexual health educators for their preadolescent children. Parents are able to provide information that incorporates their values, discuss issues before their children initiate sexual activity, and be an ongoing and continuous source of information for their children throughout their youth.

Parents play a critical role in shaping adolescent sexual behavior through their parenting practices and parent-child communication about sex. With respect to the latter, parent-adolescent communication about sex is associated with less risky sexual behavior (DiClemente et al., 2001; Dittus, Jaccard, & Gordon, 1999; Dutra, Miller, & Forehand, 1999; Karofsky, Zeng, & Kosorok, 2001; Kotchick, Dorsey, Miller, & Forehand, 1999; Leland & Barth, 1993; B. Miller, Benson, & Galbraith, 2001), including increased partner communication (Whitaker, Miller, May, & Levin,

1999), increased condom use (K.S. Miller, Levin, Xu, & Whitaker, 1998), and later age of sexual initiation (Hutchinson & Cooney, 1998). Moreover, both parents and adolescents want and value good communication about sexuality (Kirby, 1999), and preadolescents and young teens consider parents not only to be one of their preferred sources of information about sex but also to have the most influence on their decisions regarding sex (Albert, 2009; Kaiser Family Foundation, 1999).

Developed to enhance effective parent-child sexuality communication, the Parents Matter! Program (PMP) encourages parents to discuss sexual risk reduction with their children and promotes positive parenting skills associated with decreased adolescent sexual risk. The program, based on a collection of social and behavioral theories (Dittus, Miller, Kotchick, & Forehand, 2004), is a five-session, pre-risk intervention aimed at parents of children aged 9-12. The results of a randomized control trial with 1,115 African American parents suggested that compared with parents in comparison conditions, parents participating in PMP significantly increased the range of sex topics they discussed with their preadolescents and increased their knowledge, comfort, skills, and confidence in communication about sex topics generally (Forehand et al., 2007). In the current study, we examine whether PMP is also effective specifically as an *HIV prevention* parent-child communication program (P-CCP).

An effective HIV prevention P-CCP results in three important outcomes. First, it increases parents' risk awareness regarding the sexual threats that youth face at an early age. Research shows that mothers avoid talking to their children about sexual issues because they perceive that their children are not ready to discuss such issues (Rosenthal, Feldman, & Edwards, 1998). However, mothers frequently underestimate their adolescents' sexual activity (Jaccard, Dittus, & Gordon, 1998; Yang et al., 2006) and often are inaccurate in predicting their adolescents' age of sexual debut (Marhefka, Mellins, Brackis-Cott, Dolezal, & Ehrhardt, 2009), suggesting that parents delay talking about sexual issues at a time when their children would benefit from information about risk reduction. By raising risk awareness, parents will be more likely to communicate sexuality information earlier. Second, an effective HIV prevention P-CCP increases the likelihood of parents delivering instructive information specifically about the prevention of HIV, including information about how HIV is transmitted and how to prevent transmission by abstaining from sex and/or using condoms during sexual activity. Third, an effective HIV prevention P-CCP enhances parents' ability to communicate effectively so that their children hear their messages. No matter how frequently parents talk to their children about sexuality or how many topics they cover, if they do not communicate in such a way that children report hearing their messages, the communication is, in effect, fruitless.

Research with parents and adolescents shows that parents are more likely than youth to report that communication about a sexuality topic has occurred (e.g., DiIorio, Kelley, & Hockenberry-Eaton, 1999; Feldman & Rosenthal, 2000; Jaccard et al., 1998; Pick & Palos, 1995), which suggests differing perceptions of parental communication between adolescents and their parents. Several factors may cause this discrepancy in concordance. Parents' reports may be reflective of all communication efforts with the child, whereas adolescents may be biased to those communications they judge as important (Jaccard et al., 1998). Additionally, parents' communication style may also be a factor (K.S. Miller, Kotchick, Dorsey, Forehand, & Ham, 1998) as youth demonstrate greater sexuality knowledge when their parents utilize open and interactive communication styles (Lefkowitz, Romo, Corona, Au, & Sigman, 2000).

The purpose of the current study is to specifically examine whether PMP's effectiveness extends beyond improving general sexuality communication as previously demonstrated (Forehand et al., 2007), by assessing its effectiveness as an HIV prevention P-CCP. This is a critical question as it is important to identify whether programs designed to enhance parent-child sexuality communication generally also enhance communication specifically about HIV prevention. If not, specific programs tailored to HIV prevention will need to be developed. To assess HIV communication effectiveness, we measured changes from baseline to 12-month postintervention in parents' perceptions of child readiness to learn about sex, frequency of communication about HIV prevention topics, and affirmative concordance between parent and child reports of these communications (i.e., agreement that communication had occurred).

## METHODS

### PARTICIPANTS

Parent-preadolescent dyads were recruited at three study sites between 2001 and 2004 in the southern United States (Athens and Atlanta, Georgia; Little Rock, Arkansas). Each site and the CDC received institutional review board approval. The participant recruitment strategy is discussed in previous articles (Armistead, Clark et al., 2004; Ball, Pelton, Forehand, Long, & Wallace, 2004; Forehand et al., 2007; Secrest et al., 2004). From 1,545 inquiries, 1,115 African American parent-preadolescent dyads were enrolled. To be eligible to participate, the preadolescent had to be in the fourth or fifth grade and aged 9-12 years at baseline assessment; the parent had to be the legal guardian of the preadolescent, have lived continuously with him/her for the past 3 years, and self-identify as African American or Black; and the parent and preadolescent had to be fluent in English.

### STUDY PERSONNEL

All key study personnel who interacted with participants were African American, residents of the same communities as participants, and underwent extensive and ongoing training on issues of diversity, ethics, and project procedures (Ball et al., 2004).

### INTERVENTIONS

All three intervention arms—enhanced, brief, and control—were administered to parents in a group format. Each session lasted 2½ hours. The enhanced intervention, which involved five sessions, focused on: raising parents' awareness of adolescent sexual risk behavior and teaching parents how they can help their preadolescents avoid such risks; enhancing parenting skills known to reduce sexual risk behavior among adolescents, including the use of positive reinforcement, monitoring, and effective parent-child communication; and increasing parents' communication about sexual topics and their confidence, comfort, and responsiveness in communicating with their preadolescents about sexual behavior. The enhanced intervention used multiple teaching strategies, including structured learning experiences, discussion, videotapes, overhead projections, modeling, role-playing, group exercises, and homework assignments. Preadolescents attended part of the fifth session so that parents could practice and receive feedback on their communication

skills. Communication practice exercises were not related to any of the communication topics being measured.

The single-session brief intervention covered the same topics as the enhanced intervention but in a single session that was primarily a lecture format with visual aids but no opportunity to practice skills. The control intervention consisted of a single session focused on general health issues and emphasized how parents can help their preadolescents establish long-term health habits that reduce the risk of obesity, diabetes, cardiovascular disease, and hypertension. Preadolescents did not attend the brief or control interventions (Long et al., 2004). Sessions for all three interventions were co-led by two African American facilitators ( $n = 17$  facilitators). Each facilitator co-led all three intervention arms.

### PROCEDURES

One parent and one preadolescent per family were enrolled in the study. If there was more than one eligible preadolescent per family, the older one was selected for participation. If the dyad met eligibility criteria and agreed to participate, then they completed the baseline assessment and were randomly assigned to return to one of the three intervention arms. Compensation for childcare and transportation was provided.

Parents and preadolescents were assessed at postintervention and at 6 and 12 months postintervention. Parent-preadolescent dyads were considered lost to follow-up if they failed to attend at least one intervention session or missed two consecutive assessments. Assessments and intervention groups were held in the participants' community (e.g., a school, community center, or campus of a children's hospital).

All assessments were conducted via audio computer-assisted self-administered interviews (Turner et al., 1998). Parents and preadolescents were situated at computers in different areas to ensure confidentiality. Questions were delivered audibly by a computerized voice over headphones and visually on the computer screen. Preadolescent and parent assessments took approximately 30 and 45 minutes to complete, respectively. After completion of each assessment and intervention session, the dyad was given \$25 for any expenses incurred (e.g., child care or transportation).

### MEASURES

Information on the steps taken to ensure that measures were reliable, valid, age appropriate, and culturally relevant is presented in a previous article (Forehand et al., 2007).

Demographic information obtained included child's report of his or her gender and age and parent's report of his or her marital status, education level, employment status, and household income. Outcome measures included parental perceptions of child readiness to learn about sex, HIV prevention communication, and communication effectiveness, and were defined as follows.

*Parental Perceptions of Child Readiness to Learn About Sex.* To measure parents' perception of their children's readiness to learn about sex, parents reported their level of agreement with the statement, "My child is ready to begin to learning about sex topics." For the analysis, the original 3-point scale (1 = not at all true, 2 = a little true, 3 = very true) was recategorized (0 = not at all true or a little true, 1 = very true).

TABLE 1. Demographic Characteristics of Participants Enrolled in the Parents Matter! Program: Athens, GA, Atlanta, GA, Little Rock, AK, 2001-2004

	Control (N = 366)	Brief (N = 371)	Enhanced (N = 378)
Preadolescent mean age in years	10	10	10
Preadolescent sex (%)			
Female	55	55	55
Male	45	45	45
Parents Education (%)			
≤ High school degree	56	51	55
>High school degree	44	49	45
Monthly family income (%)			
≤ \$199	4	3	6
\$200-499	12	14	17
\$500-999	24	21	19
\$1,000-1999	28	31	30
\$2,000-2999	16	18	16
\$3,000-3999	10	6	8
≥ \$4,000	6	7	4
Participating parent's relationship to child (%)			
Mother	86	86	87
Other	14	14	13

*HIV Prevention Communication.* Scales were created to assess three HIV prevention communication areas: (a) ways of protecting oneself from HIV/AIDS, (b) abstinence, and (c) condom use. We measured parent-child communication about ways of protecting oneself from HIV/AIDS by asking parents three questions:

1. "Have you ever told your child how a person gets AIDS?"
2. "Have you ever told your child that she/he can protect her/himself from AIDS by not having sex?"
3. "Have you ever told your child that she/he can protect her/himself from AIDS by using a condom?"

We measured parent-child communication about abstinence by asking parents four questions:

1. "Have you ever told your child to wait until she/he is older or more grown up before having sex?"
2. "Have you ever told your child she/he should not have sex now?"
3. "Have you ever told your child she/he should wait until she/he is married before having sex?"
4. "Have you ever told your child she/he should finish school before having sex?"

We measured parent-child communication about condoms by asking parents four questions:

1. "Have you ever told your child condoms provide protection against diseases and pregnancy?"
2. "Have you ever told your child she/he should use condoms if she/he has sex?"

TABLE 2. Percentage of Parents Perceiving Their Children As Ready to Learn About Sex: Baseline and 12-Months Postintervention Reports and Change from Baseline to 12-Months Postintervention

	Control Count (%) (N = 366)		Brief Count (%) (N = 371)		Enhanced Count (%) (N = 378)		Percentage Point Difference (95% Confidence Interval) (p Value) <sup>a</sup>		
							Brief vs. Control	Enhanced vs. Control	Enhanced d vs. Brief
Baseline	151 (41)		148 (40)		139 (37)		—	—	—
12-month postintervention	209 (57)		224 (60)		248 (66)		—	—	—
Change from baseline to 12 month postintervention	58 (16)		76 (20)		109 (29)		5 (-1, 10) (p = 0.103)	13 (7, 19) (p < .001)	8 (2, 14) (p = 0.008)

Note. <sup>a</sup>Based on chi-square test.

3. "Have you ever told your child how to obtain and use a condom?"
4. "Have you ever told your child she/he should carry condoms with her/him?"

The original 3-point scale (1 = never, 2 = once, 3 = more than once) for each response to each HIV prevention communication question was recategorized (0 = never, 1 = once or more) and summed to yield scale scores. Scales ranged from 0 to 3 for HIV/AIDS communication and 0 to 4 for abstinence and condom communication. The Cronbach's alpha coefficients for each of these scales were adequate (0.86, 0.94, and 0.76, respectively).

*Communication Effectiveness.* The effectiveness of parent-child communication was measured by asking questions to parents and their children about whether they had discussed HIV/AIDS, abstinence, and condom use with their counterpart child/parent (preadolescents were not asked the more detailed questions described above under HIV prevention communication measures). The original three option response scale (1 = never, 2 = once, 3 = more than once) was recategorized (0 = never, 1 = once or more) and "effective communication" was defined as reporting by both parent and child that a conversation had occurred. For example, effective communication about HIV/AIDS was measured by parent and child both responding affirmatively to the following questions:

Parent: Have you ever talked to your child about HIV/AIDS? (0 = never, 1 = once or more)

Child: Has your parent ever talked to you about HIV/AIDS? (0 = never, 1 = once or more)

If both the parent and child reported "yes, once or more," to these questions, then their communication about HIV/AIDS was considered effective.

### ANALYSIS

The analysis of the outcome measures was based on all randomized subjects (i.e., intent-to-treat analysis). Summary statistics of demographic variables are reported for each intervention arm. Retention rates were also tabulated. For participants who discontinued the study prematurely, the last observation prior to the discontinuation were carried forward (LOCF). For the binary measures, participants who did not respond were considered as "no discussion." Percentage of change between baseline and 12-months postintervention in parental perception of children's readiness to learn about sex and communication effectiveness (affirmative concordance in dyads' reports) is reported for the enhanced, brief, and control interventions. The differences of percentage of changes from baseline to 12-month postintervention between intervention arms, 95% confidence intervals, and *p* values based on chi-square statistics were also calculated to compare improvements of the enhanced, as well as the brief, intervention arm with the control arm. Changes in median and mean scores measuring HIV prevention communication about HIV/AIDS, abstinence, and condoms from baseline to 12-month postintervention are reported for the enhanced, brief, and control interventions. Wilcoxon rank sum tests, which do not require an assumption of normal distribution of data, were used to compare changes in scores from baseline in the enhanced and brief arms to the control arm and in the enhanced

TABLE 3. HIV Prevention Communication About HIV/AIDS, Abstinence, and Condoms: Baseline and 12-Month Postintervention Mean and Median Scores and Change in Mean Scores from Baseline to 12-Month Postintervention

	Control (N = 366)	Brief (N = 371)	Enhanced (N = 378)	P-values <sup>a</sup>	Enhanced vs. Control	Enhanced vs. Brief
<b>HIV/AIDS (scale ranged from 0 to 3)</b>						
Baseline						
Mean $\pm$ SD	1.60 $\pm$ 1.29	1.63 $\pm$ 1.61	1.65 $\pm$ 1.29	—	—	—
Median (Q1, Q3)	2 (0, 3)	2 (0, 3)	2 (0, 3)	—	—	—
<b>12-months postintervention</b>						
Mean $\pm$ SD	2.16 $\pm$ 1.16	2.25 $\pm$ 1.15	2.55 $\pm$ 0.89	—	—	—
Median (Q1, Q3)	3 (2, 3)	3 (2,3)	3 (2, 3)	—	—	—
<b>Change from baseline to 12 months postintervention</b>						
Mean $\pm$ SD	0.57 $\pm$ 0.97	0.61 $\pm$ 0.99	0.91 $\pm$ 1.14	0.466	<.001	<.001
Median (Q1, Q3)	0 (0, 1)	0 (0, 1)	0 (0, 2)	—	—	—
<b>Abstinence (scale ranged from 0 to 4)</b>						
Baseline						
Mean $\pm$ SD	2.47 $\pm$ 1.79	2.49 $\pm$ 1.75	2.54 $\pm$ 1.78	—	—	—
Median (Q1, Q3)	3 (0, 4)	3 (0, 4)	4 (0, 4)	—	—	—
<b>12-months postintervention</b>						
Mean $\pm$ SD	3.12 $\pm$ 1.50	3.18 $\pm$ 1.48	3.50 $\pm$ 1.21	—	—	—
Median (Q1, Q3)	4 (3, 4)	4 (3, 4)	4 (4, 4)	—	—	—
<b>Change from baseline to 12 months postintervention</b>						
Mean $\pm$ SD	0.67 $\pm$ 1.37	0.72 $\pm$ 1.36	0.98 $\pm$ 1.56	0.313	0.004	0.05
Median (Q1, Q3)	0 (0, 0)	0 (0, 1)	0 (0, 2)	—	—	—
<b>Condoms (scale ranged from 0 to 4)</b>						
Baseline						
Mean $\pm$ SD	0.87 $\pm$ 1.18	0.98 $\pm$ 1.21	0.82 $\pm$ 1.13	—	—	—
Median (Q1, Q3)	0 (0, 2)	0 (0, 2)	0 (0, 2)	—	—	—
<b>12-months postintervention</b>						
Mean $\pm$ SD	1.47 $\pm$ 1.32	1.61 $\pm$ 1.37	1.84 $\pm$ 1.29	—	—	—
Median (Q1, Q3)	2 (0, 2)	2 (0, 2)	2 (1, 3)	—	—	—
<b>Change from baseline to 12 months postintervention</b>						
Mean $\pm$ SD	0.61 $\pm$ 0.93	0.63 $\pm$ 0.96	1.04 $\pm$ 1.14	0.696	<.001	<.001
Median (Q1, Q3)	0 (0, 1)	0 (0, 1)	0 (0, 2)	—	—	—

Note. <sup>a</sup>Based on Wilcoxon rank sum tests.

TABLE 4. Effective Communication about HIV/AIDS, Abstinence and Condom Use as Measured by Parent/Child Affirmative Concordance: Baseline and 12-Months Postintervention Reports and Change From Baseline to 12-Months Postintervention

	Control		Brief		Enhanced		Percentage Point Difference (95% Confidence Interval)		Enhanced vs. Brief
	Count (%)	Count (%)	Count (%)	Count (%)	Brief vs. Control	Enhanced vs. Control	Enhanced vs. Brief		
HIV/AIDS	(N=366)	(N=371)	(N=378)						
Baseline	162 (44)	152 (41)	151 (40)		—	—	—	—	—
12-months postintervention	238 (65)	260 (70)	289 (76)		—	—	—	—	—
Change from baseline to 12 months postintervention	76 (21)	108 (29)	138 (36)		8 (2,15) (p=0.009)	16 (9,22) (p<.001)	7 (1,14) (p=0.03)		
Abstinence									
Baseline	176 (48)	183 (49)	168 (44)		—	—	—	—	—
12-months postintervention	249 (68)	277 (75)	297 (79)		—	—	—	—	—
Change from baseline to 12 months postintervention	73 (20)	94 (24)	129 (35)		5 (-1, 11) p=0.080	14 (8,20) (p<.001)	9 (2,15) (p=0.009)		
Condoms									
Baseline	79 (22)	77 (21)	73 (20)		—	—	—	—	—
12-months postintervention	160 (44)	179 (48)	219 (58)		—	—	—	—	—
Change from baseline to 12 months postintervention	81 (22)	102 (27)	146 (38)		5 (-1,12) (p=0.092)	16 (10, 23) (p<.001)	11 (4,18) (p=.001)		

Note. <sup>a</sup>Based on chi-square tests.

arm to the brief arm. The Wilcoxon rank sum test was also used to examine whether outcomes differed by child's gender within each treatment arm.

## RESULTS

A total of 1115 parent-child participants were randomized. Table 1 shows the demographic characteristics of participants, which were similar in the three intervention arms. More participants assigned to the enhanced arm (90%) attended at least one session compared with those assigned to the brief (76%) and control (71%) arms. Participants assigned to the enhanced arm had higher retention (84%) from baseline to postintervention than did participants in the brief (74%) or control (69%) arms. Retention at 12-month postintervention was also higher in the enhanced arm (78%) compared with the brief (65%) and control (61%) arms.

All sessions were audiotaped to ensure that interventions were being delivered consistently across sites and adhered to the intervention manual. Fidelity checks conducted on a random sample of sessions (i.e., 20% at each site) indicated that 95%, 93%, and 98% of the key aspects of the enhanced, single-session, and control sessions, respectively, were implemented as planned.

Participants in the enhanced arm yielded the largest improvement on all measures (i.e., parental perceptions of child readiness to learn about sex, HIV prevention communication, and communication effectiveness). The percentage of parents perceiving their child as ready to learn about sex by intervention arm is shown in Table 2. A greater proportion of parents in the enhanced arm, but not the brief arm, increased their perception that their children were ready to learn about sex by 12-months postintervention compared with the control arm. As depicted in Table 3, at 12-month postintervention, parents in the enhanced arm were more likely than those in the brief or control arms to discuss protection against HIV/AIDS, abstinence, and condoms with their children than parents in the control arm. No significant differences in topic discussion were found between participants in the brief arm as compared with the control arm. The percentage of improvement from baseline in communication effectiveness by intervention arm is shown in Table 4. Relative to both the brief and control arms, there was a greater increase in the percentage of parents and children agreeing that communication about HIV/AIDS, abstinence, and condoms had occurred for the enhanced arm at 12-month postintervention. Participants in the brief arm showed a greater increase in the percentage of parents and children agreeing communication about HIV/AIDS had occurred than the control arm; however, no significant differences were observed between brief and control arm participants in discussion about abstinence and condom use.

Analysis by gender of child did not reveal significant differences between boys and girls across all measures in the control and enhanced arms. Parents of boys in the brief arm reported slightly higher increases in discussion of condom use ( $p = .014$ ), and a higher percentage of parent-child agreement regarding reported discussions of abstinence ( $p = .027$ ).

## DISCUSSION

The results of the current study indicate that, relative to the control group, parents who participated in the enhanced sexual communication intervention perceived their

child as ready to learn about sexual topics more often, increased their communication about HIV prevention topics, and communicated in such a way that children reported hearing their messages. These findings, which build on the earlier results of PMP (Forehand et al., 2007), suggest that parents, through participation in appropriate interventions, do enhance communication about HIV/AIDS prevention with their preadolescent children when participating in a program to enhance general sexuality communication.

Parents are often hesitant to initiate conversations about sexual risk behavior and prevention of the spread of HIV/AIDS in part owing to perceptions that children are not ready to receive information about sexual issues (Rosenthal et al., 1998) and lack of knowledge, skill, comfort, and confidence (DiIorio et al., 2000; Kirkman, Rosenthal, & Feldman, 2002) to have such discussions. However, a convincing literature indicates that early communication—particularly that which occurs before sexual debut—reduces sexual risk behavior (K.S. Miller, Levin et al., 1998), potentially preventing the spread of HIV/AIDS. The current findings suggest that a multi-session intervention such as PMP can facilitate not only HIV/AIDS communication, but parents' beliefs about such communication (i.e., that preadolescent children are ready to learn about sexual topics). Equally important, such interventions can enhance parents' ability to communicate effectively so that children hear the messages about HIV prevention from parents.

In contrast, the outcomes associated with the single session intervention were significantly lower than those in the enhanced arm and differed little from the control condition, suggesting that it is not sufficient just to tell parents to talk to their children about HIV/AIDS prevention. The positive outcomes seen with the enhanced intervention likely resulted from the multiple teaching strategies employed, particularly the inclusion of skills building exercises and communication practice.

The current study had several limitations, including the use of a convenience sample, a relatively high attrition rate, reliance on a single item measure for some variables, and restriction to one geographic area of the country. The study also had several strengths, including implementing an intervention prior to adolescence with a sample that has been identified as at risk (CDC, 2008) and in need of effective HIV prevention approaches. In addition, unlike most behavioral intervention trials, participants in this study were individually randomized into groups within intervention arms, which allowed similar composition in every group. Moreover, we also developed facilitator guides to ensure appropriate and standardized implementation of this curriculum. Our analysis confirmed that no group or instructor effects were found in this study.

Parents are in a unique position to educate their children about HIV, but it is not sufficient to simply tell them to talk to their children. Multisession skills building prevention programs appear necessary to help parents communicate effectively so that their children avoid HIV now and in the future.

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