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EVALUATION OF A U.S. EVIDENCE-BASED PARENTING INTERVENTION IN RURAL WESTERN KENYA: FROM PARENTS MATTER! TO FAMILIES MATTER!

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We evaluated Families Matter! Program (FMP), an intervention designed to improve parent-child communication about sexual risk reduction and parenting skills. Parents of 10- to 12-year-olds were recruited in western Kenya. We aimed to assess community acceptability and FMP's effect on parenting practices and effective parent-child communication. Data were collected from parents and their children at baseline and 1 year postintervention. The intervention's effect was measured on six parenting and parent-child communication composite scores reported separately for parents and children. Of 375 parents, 351 (94%) attended all five intervention sessions. Parents' attitudes regarding sexuality education changed positively. Five of the six composite parenting scores reported by parents, and six of six reported by children, increased significantly at 1 year postintervention. Through careful adaptation of this U.S. intervention, FMP was well accepted in rural Kenya and enhanced parenting skills and parent-child sexuality communication. Parents are in a unique position to deliver primary prevention to youth before their sexual debut as shown in this Kenyan program.

Half of all new HIV infections in sub-Saharan Africa occur among young people aged 15-24 years. In order to prevent new cases of HIV infection and work toward

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the realization of an HIV-free generation, strategic development and timing of interventions that assist youth in shaping healthy behaviors and achieving positive health outcomes are needed.

Early adolescence (ages 10-14) can be a period of intense transition. With the onset of puberty, youth in some societies progress from being perceived as children to being perceived as old enough to support their families, begin sexual relations, and enter into marriage and childbearing (Population Council, 2006). Providing HIV prevention interventions during early adolescence is critical as it is the time when healthy behaviors can be shaped and promoted. The sexual trajectories of youth begin well before onset of sexual intercourse. Findings from the few studies that explore preintercourse behaviors suggest that sexual thoughts, intentions, and precoital behaviors are precursors to intercourse debut and thus preadolescence is a critical period during which youth begin to view sexuality in a self-relevant way (Butler, Miller, Holtgrave, Forehand, & Long, 2006; O'Sullivan & Brooks-Gunn, 2005). If protecting the sexual health of youth is a public health priority, then efforts must begin early in their life course.

Many of the current HIV prevention interventions for youth primarily target older adolescents who are already engaging in high risk sexual behaviors (Lyles et al., 2007; Speizer, Magnani, & Colvin, 2003). To complement these efforts, there is a need to develop and implement evidence-based prevention interventions at the prerisk stage, prior to the initiation of sexual behaviors that put youth at risk for HIV. Research in the U.S. shows that it is easier to prevent risk behaviors before their onset than to change established behavioral patterns (Botvin, Baker, Dusenbury, Tortu, & Botvin, 1990). This prerisk approach has been embraced in a number of public health efforts to prevent smoking, obesity, drug use, partner violence, and car accidents and deaths (Baker, Chen, & Li, 2007; Caballero et al., 2003; Cohen & Rice, 1995; Curry et al., 2003; Freedman, Khan, Diets et al., 2001; Lucas & Sampson, 2006; Pentz et al., 1989; Whitaker et al., 2006). In addition, research examining sexual risk outcomes has found that behavior at sexual debut is an important determinant of subsequent behavior (Miller, Levin, Whitaker, & Xu, 1998). This suggests that during the prerisk stage there is not only an opportunity to reduce HIV risk during the initial acts of sexual behaviors but also one to help youth establish lifelong patterns of safe, healthy sexual behaviors.

Although there are many challenges to reaching preteens with sexual risk reduction information, one noncontroversial strategy is to engage parents as partners in public health prevention efforts. Many parents and guardians need support to effectively parent, convey values and expectations about sexual behavior, and communicate important sexual risk prevention messages to their children. Giving parents tools to enhance healthy parenting and promote communication about sexuality and sexual risk reduction with their children prior to sexual debut may help youth acquire the necessary skills to develop healthy behaviors and make positive life choices.

Worldwide, family plays a key role in promoting the health and well-being of adolescents (World Health Organization, 1999). Extensive research from Western countries highlights the influence parents have on their children's sexual risk-taking behavior, demonstrating a strong link between parenting practices such as parental monitoring, positive reinforcement, and effective parent-child communication about sexual issues and decreased adolescent sexual risk behavior (see DiIorio, Pluhar, & Belcher, 2003; Dittus, Miller, Kotchick, & Forehand, 2004; Kotchick, Shaffer, Forehand, & Miller, 2001). Parent-child communication about sexuality and sexual risk

reduction is most effective when conducted in a skilled, open and receptive manner (Dutra, Miller, & Forehand, 1999; Fasula, & Miller, 2006; Kotchick, Dorsey, Miller, & Forehand, 1999; Whitaker, Miller, May, & Levin, 1999). This quality of being skilled, comfortable, and confident in communication has been defined in the scientific literature as '"parental responsiveness" (Miller et al., 2009).

Similar data are emerging from other regions of the world, including Africa (Babalola, Oleko Tambashe, & Vondrasek, 2005; Blum & Mmari, 2005; Kumi-Kyereme, Awusabo-Asare, Biddlecome, & Tanle, 2007). In 2002, a review of research in 53 countries across five continents—including five countries in sub-Saharan Africa—found a consistent and significant relationship between positive parent-child relationships and delayed sexual debut (World Health Organization, 2002). A study examining nationally representative surveys among unmarried 15- to 19-year-olds in four African countries found a positive relationship between the level of parental monitoring and abstinence in the past year (in all countries for males; and in three out of four countries for females) (Biddlecom, Awusabo-Asare, & Bankole, 2009).

Encouraging and empowering parent-child communication about sexuality is a relatively novel approach in sub-Saharan Africa (World Health Organization, 2007a,b). In western Kenya, as in many parts of sub-Saharan Africa, adolescents have traditionally received sex information during rites of passage into adulthood or from an extended family member of the same gender, not from their parents. As in other East African countries, these traditions have largely disintegrated in Kenya, leaving a gap in children's sex education (Fuglesang, 1997; Mbugua, 2007; Muyinda, Nakuya, Whitworth & Pool, 2004). The AIDS epidemic has led to the integration of sex education into school curricula to address HIV/AIDS and other sexually transmitted infections (STIs). Traditional channels of communication have also been utilized for HIV prevention efforts (Erulkar, Ettyang, Onoka, Nyagah, & Muyonga, 2004; Muyinda et al., 2004; Muyinda, Nakuya, Pool, & Whitworth, 2003). However, significantly involving families in efforts to reduce adolescent sexual risk is uncommon.

In Nyanza Province in western Kenya, a cross-sectional survey conducted in 2003 to 2004 among adolescents aged 15-19 years in Asembo showed an overall HIV prevalence of 8.6% among females and 0.7% among males; by age 19 years, one in five girls was infected. Among never-married female adolescents, 12% were pregnant (Amornkul et al., 2009; Vandenhoudt et al., 2004). Youth in Nyanza Province identified a lack of communication with parents as a barrier to understanding how to prevent HIV infection (Vandenhoudt, Njue, Remes, & Buvé et al, 2001). To help parents overcome barriers to talking to their children about sex topics, the Parents Matter! Program (PMP), an evidence-based intervention (EBI) (Forehand et al., 2008) that includes both parenting strategies and skills to increase effective parent-child communication was identified, culturally adapted, implemented, and evaluated in the Asembo community of Nyanza Province. The current article describes the results from the evaluation of implementing the PMP in Asembo.

The goal of PMP is to provide parents of preteens (aged 9-12) with protective parenting skills and the knowledge, skills, comfort, and confidence to communicate with their children about sexual risk prevention before the onset of sexual risk behaviors. PMP is delivered by trained facilitators to small groups of parents in five weekly sessions using participatory learning strategies. In the fifth session, children are invited to participate in a guided communication exercise (for a more in-depth description see Dittus et al., 2004; Long et al., 2004). Prior to implementing PMP, the program was culturally adapted using a systematic adaptation process and re-

named the Families Matter! Program (FMP). (For a detailed description of the adaptation of PMP, see Poulsen et al., this issue.)

In this report, we examine if after being culturally adapted a U.S. EBI would be accepted in a rural Kenyan setting and if key parenting constructs changed over time after receiving the parenting intervention. Results are examined from both the parent and child perspective.

We hypothesized the following.

- Hypothesis 1: Parents in the Nyanza Province of Kenya would accept a program to help them parent and communicate more effectively with their preteen children as measured by high retention rates and high levels of satisfaction after participating in the adapted EBI FMP as well as parents' reports of more positive attitudes toward sexuality education of preteens and their role in this process.
- Hypothesis 2: After participating in the adapted EBI FMP, parents and their children would separately report more positive relationships with their children/parents, greater use of parental positive reinforcement, and higher levels of parental monitoring.
- Hypothesis 3: After participating in the adapted EBI FMP, parents and their children would report more frequent communication about sexuality and sexual risk reduction topics and report greater parental knowledge, comfort, skill and confidence (parental responsiveness) when discussing sex topics.

PROCEDURES AND METHODS

LOCATION

FMP was delivered to families residing in Asembo, in Bondo district, Nyanza Province, Kenya, a rural subsistence fishing and farming community on the shores of Lake Victoria.

PARTICIPANTS

Participant recruitment efforts were conducted with the support of the Ministry of Education. Parents and other primary caregivers (collectively referred to as "parents") of 10- to 12-year-olds and their preteens were invited by village reporters to a meeting at 13 selected schools. The community liaison officer briefed interested parents and children about the intervention and the evaluation. Interested parents and preteens were separately screened for eligibility.

To be eligible to participate, a parent must have been: the preteen's primary caregiver at the time of the first assessment; living with the preteen continuously for at least the past 3 years; spending most nights in the same compound; an Asembo resident with no intention of moving during the next 24 months; capable in Dholuo, the local language that was used during the intervention and assessments; available to attend 5 sessions of program over 5 weeks; and both parent and child had to be present for assessments. Only one parent from each household was allowed to participate in the intervention sessions; parents determined who from their household would attend.

TABLE 1. Measures Used to Assess Parental Attitudes, Parenting Practices and Sexuality Communication

Measures for parental attitudes about sexuality education

Response category: true or false

I think if I talk to my child about sex issues I will encourage him/her to have sex.
I think my child is still too young to learn about sex issues.
I think my child is ready to learn about sex issues.
I think my child should learn about sex issues before he/she initiates sexual behaviors.
Teaching children about condoms & birth control is giving them permission to have sex.
Teaching children about condoms & birth control will make them want to have sex.
It is my duty to make sure my child knows about sex.

Construct parenting measures

Parent-child relationship

8 items (parent $\alpha = .81$) (child $\alpha = .75$)
Scale: 0 = never to 3 = all the time Range of score = 0-24

My child loves me.
I trust my child.
I understand my child.
My child and I can talk about almost anything.
My child listens to what I say
I like talking to my child
I am happy with how my child and I get along
I feel like I am important to my child

Positive Reinforcement

3 items (parent $\alpha = .70$) (child $\alpha = .61$)
Scale: 0 = never to 3 = all the time Range of score = 0-9

When your child behaves or does a good thing, how often do you reward her/him?
When your child behaves or does a good thing, how often do you praise her/him?
When your child behaves or does a good thing, how often do you prepare her/his favorite meal or thank her/him?

Parental Monitoring

4 items (parent $\alpha = .76$) (child $\alpha = .73$)
Scale: 0 = Never to 3 = All the time Range of score = 0-12

How often do you know about where your child goes when s/he is not at home?
How often do you know about what your child does when s/he is not at home?
How often do you know about who your child is with when s/he is not at home?
How often do you know about what time your child will be home when s/he is out?

Sexuality education communication topics

6 items (parent $\alpha = .88$) (child $\alpha = .77$)
Scale: 0 = no, never to 2 = yes, more than once Range of score = 0-12

Have you ever talked to your child about visiting or friendships between a boy and a girl?
Have you ever talked to your child about how his/her body changes as he/she grows up? This is called puberty.
Have you ever talked to your child about when a girl gets her period or monthly cycle? This is called menstruation.
Have you ever talked to your child about what sex is?
Have you ever talked to your child about how babies are made or where babies come from? This is called reproduction.
Have you ever talked to your child about when s/he is mature enough to have sex?

Sexual risk reduction communication topics

6 items (parent $\alpha = .83$) (child $\alpha = .74$)
Scale: 0 = no, never to 2 = yes, more than once Range of score = 0-12

Have you ever talked to your child about postponing sex?
Have you ever talked to your child about family planning?

Have you ever talked to your child about peer pressure? Peer pressure is when peers try to talk others into doing something that they might not want to do.	Have you ever talked to your child about HIV or AIDS?
Have you ever talked to your child about condoms?	Have you ever talked to your child about diseases you can get when you have sex?
Responsiveness	
12 items (parent α = .75) (child α = .75)	
Scale: 0 = False 1 = True Range of score = 0-12	
If my child asked me a question about a sex issue I would respond.	I have enough information about sex issues to talk to my child.
If my child asked me a question about a sex issue I would try to answer her/his question with the information s/he needed.	I know how to talk to my child about sex issues.
My child can ask me the questions about sex s/he really wants to know.	I can answer the questions my child has about sex issues.
If my child asked me a question about a sex issue I would be embarrassed.	When I talk to my child about sex issues I tell him/her about the bad things that come from sex.
I would be comfortable if my child asked me a question about a sex issue.	When I talk to my child about sex issues I discuss and explain the things that my child needs to know about sex.
I am free talking to my child about sex issues.	When I talk to my child about sex issues, I also give him/her time to ask questions and give his/her opinion.

Note. α = Cronbach's alpha; parent α ≥ .70 considered acceptable for this analysis. [a]Questions reframed for child questionnaire.

EVALUATION PROCEDURES

The protocol for program evaluation was approved by the institutional review boards at all participating institutions: the U.S. Centers for Disease Control and Prevention, the Kenya Medical Research Institute, and the Institute of Tropical Medicine in Antwerp, Belgium. Written informed consent from the parent and assent from the preteen were obtained for the evaluation.

Research assistants provided parents and children with tutorials on how to complete the audio computer-assisted self-interview (ACASI). Baseline interviews were then administered in community centers, with parent-child dyads completing the interviews simultaneously, but in separate areas to ensure confidentiality.

Baseline assessment of families took place between December 2004 and February 2005. The intervention was delivered to parents within 4 weeks of baseline assessment. Postintervention assessments were conducted three months after the delivery of the fifth intervention session, and at 12 and 24 months post intervention assessment. We report data comparing baseline and one year postintervention assessment results.

MEASURES

To test hypothesis 1, we documented intervention participation and retention rates. In addition, we examined parental attitudes toward sexuality education and whether children had ever asked their parents about a sex issue (see Table 1 for measures). At the 1-year postintervention assessment, parents were asked about their level of satisfaction with the intervention. To test hypothesis 2, three measures assessing parenting practices, including parent-child relationship (quality of relationship), positive reinforcement (use of praise and rewards to reinforce good behavior), and parental monitoring (knowing where children are, whom they are with, and when they will be back) were examined. To test hypothesis 3, parent-child communication about sexuality and sexual risk reduction, and parental responsiveness (defined by parents' skill, comfort, and confidence communicating about sexuality with their children) was examined. Cronbach's alpha coefficients were calculated at baseline to assess internal consistency of the items in each of the measures (see Table 1 for the items that constituted each parenting measure.) Information on the six parenting measures was collected from each parent-child dyad. Questions administered to parents were reframed to allow preteens to report on the same measures.

Numerous steps were taken to ensure that the questions used in the evaluation were reliable, valid, age appropriate, and culturally relevant. Questions used in the U.S. evaluation of PMP *(*Ball, Pelton, Forehand, Long, & Wallace, 2004) were pretested in Asembo. All questions that elicited inconsistent answers were reviewed by focus groups, program staff, and community members for comprehension and cultural relevance. Questions were then refined, translated, back-translated, and pilot-tested.

SAMPLE SIZE

Sample size calculation was based on both practical and statistical considerations. We determined that enrolling 239 dyads would allow us to measure a difference of 1.0 (based on an alpha of 0.05 and power of 0.8) between the baseline and postintervention communication scores about sexual risk. Allowing for missing values and an estimated 25% loss to follow up over the assessment period, we aimed for a sample size of 400 parent-child dyads

ANALYSIS

Data were analyzed using SAS 9.1. Changes in parental attitudes regarding sexuality education between baseline and postintervention assessment were assessed by applying McNemar's test. Parent and child reports of parenting constructs are represented by median scores and interquartile ranges [Q1-Q3] at baseline and postintervention. The mean score differences between baseline and postintervention were calculated for each measure, as well as the proportion of subjects whose postintervention scores increased from baseline. To examine the intervention effect, the nonparametric paired signed rank test was applied to account for the nonnormal distribution of the scores. *P* values are presented for all statistical tests and results are considered significant if the one-sided *p* value is less than the bonferroni correction factor, adjusting for multiple comparisons within each parenting measure.

RESULTS

FMP was delivered to groups of 12 to 16 parents in five weekly 3-hour sessions, conducted in community venues by two trained local facilitators. Preteens attended part of the fifth session. Of the 403 parent-child dyads that were recruited and completed baseline surveys, 375 parents (93%) participated in the intervention. Of these, 321 parent-child dyads (86%) completed the 12 months postintervention assessment. Data presented here are only from these 321 dyads.

Table 2 presents sociodemographic data for parents and children. The majority of parents (90%) were female. Among the preteens who participated in the evaluation, 50% were girls. Nearly all (99%) preteens were attending school and the majority (67%) had reached class four (roughly equivalent to fourth grade). These data did not differ from parent-child dyads that only completed the baseline assessment.

Assessments were conducted only if both the parent and child were present. Among the 54 parent-child dyads who did not participate in the 12 months postintervention assessment, reasons for nonparticipation included death or sickness, attending school outside Asembo, temporary or permanent migration out of the intervention area, and unexplained reasons.

HYPOTHESIS 1: WAS FMP ACCEPTED BY THE COMMUNITY?

Of all parent-child dyads invited to participate in the baseline survey and found eligible, none refused. However, 28 parents (7%) did not participate in the intervention. Reasons given for nonparticipation were observing funeral rites, giving birth, being ill, temporarily migrating out of the study area, and being too busy to attend the intervention during the daytime. Of the 375 parents who participated in the intervention, 351 (94%) attended all five sessions and 14 (4%) attended four sessions, indicating high acceptance of the program both in enrollment and retention. Table 3 shows the changes that occurred in parental attitudes regarding sexuality education postintervention. Attitudes that potentially prevent sexual communication with children decreased whereas attitudes regarding the appropriateness of talking to children about sex improved. Parents reported very high levels of satisfaction with the intervention at the postintervention assessment. Ninety six percent of parents found that FMP was very helpful in talking to their child about sexuality and 89% felt very confident to use the information learned in FMP. Overall, 87% of parents reported that they had shared this information with persons other than their child too, mainly with adults in the family, neighbors and children from other families.

TABLE 2. Sociodemographic Characteristics of Parents and Children (N = 321)

A. Characteristics Parents	*n*	%	B. Characteristics Children	*n*	%
Gender			**Gender**		
Male	31	9,7	Male	160	49,8
Female	290	90,3	Female	161	50,2
Highest level of education			Age		
Never attended school	46	14,3	10	74	23,1
Primary education incomplete	80	24,9	11	86	26,8
Primary education complete	131	40,8	12	161	50,2
Secondary education	64	19,9	Currently in School		
Current marital status			Yes	318	99,1
Never Married	3	0,9	No	3	0,9
Widowed	75	23,4	Orphanhood[a]	319	
Married	243	75,7	Both Biological Parents Alive	204	63,9
polygamous marriage	243		Father Died	62	19,4
Yes	80	32,9	Mother Died	14	4,4
No	163	67,1	Both Biological Parents Deceased	39	12,2
Relationship to child					
Biological parent	252	78,5			
Grand parent	31	9,7			
Step parent	17	5,3			
Adopted parent	11	3,4			
Sibling	5	1,6			
Aunt/Uncle	3	0,9			
Other	2	0,6			
Occupation					
Farmer	246	76,6			
Self-Employed	49	15,3			
Salaried Worker	8	2,5			
Casual Worker	7	2,2			
Fisherman	6	1,9			
Home Maker	5	1,6			

[a]Data missing on two children.

TABLE 3. Attitudes of Parents Regarding Sexuality Education (N = 321)

	Preintervention Assessment *n* (%)	12 Months Postintervention Assessment *n* (%)	McNemar's Test *p* Value
Talking to my child will encourage sex	122 (38)	92 (29)	.008
My child is too young to hear about sex	186 (58)	130 (40)	<.001*
My child is ready to learn about sex	179 (56)	207 (64)	.013
My child should learn about sex before he/she starts sexual behaviors	257 (80)	275 (86)	.05
Teaching children about condoms & birth control is giving them permission to have sex	140 (44)	96 (30)	<.001*
Teaching children about condoms & birth control will make them want to have sex	151 (47)	97 (30)	<.001*
It is my duty to make sure my child knows about sex	210 (65)	246 (77)	<.001*

*Results were considered significant if one-sided p value was less than the Bonferroni correction: .0071.

HYPOTHESIS 2: DID POSITIVE PARENTING PRACTICES INCREASE AFTER FMP?

Table 4 shows the positive effect the intervention had on each of the parenting measures (reported separately by children and their parents). Parents and their children indeed reported greater use of parental positive reinforcement and higher levels of parental monitoring. Children reported an improvement of the relationship with their parents. The only parenting measure that did not show significant improvement was parents' report of the parent-child relationship. Parental monitoring showed the most improvement with the majority of parents (61%) and children (62%) reporting increased monitoring.

HYPOTHESIS 3: DID FREQUENCY OF PARENT-CHILD COMMUNICATION ABOUT SEXUAL ISSUES INCREASE? DID PARENTAL RESPONSIVENESS IMPROVE?

Between baseline and 12 months postintervention assessment significant improvements were seen in all three measures (see Table 4). The largest changes were seen in sexual risk reduction communication (mean score differences on a 12- point scale were 4.3 among parents and 4.7 among children) and sexuality education communication (mean score differences on a 12- point scale were 5.4 among parents and 3.3 among children).

Further validating the improvements in sexuality communication, the proportion of children who reported that they had ever asked their parent a question about a sexual issue increased significantly from 17% to 38% between baseline and 12 months postintervention assessment. At the postintervention assessment, 50% of parents reported that their child had asked them about a sexual topic versus 14% at baseline.

DISCUSSION

As hypothesized, the data presented demonstrate that FMP was well accepted. High retention and satisfaction rates reflect the feasibility of delivering such an intervention to parents in a rural, low-resource setting, and suggest that it is filling a need in the community for the involvement of parents in primary HIV prevention among youth. The evaluation indicates that the intervention changed parents' attitudes regarding sexuality education, a known communication barrier. Many parents learned that having open conversations with their children at an early age does not encourage sexual activity. This is important since the success of FMP is largely determined by parents' willingness to communicate with their children about sexuality in the children's presexual years.

The parent- and child-reported data also support that FMP was able to positively change parenting skills and increase incidence of parent-child communication about sexuality and sexual risk reduction, factors that have been demonstrated through the aforementioned research to decrease adolescent sexual risk behaviors. Changes in scores from baseline to postintervention were significant for all parenting measures except parents' report of the parent-child relationship; the scores for this measure were high at baseline and had little room for increase. Because children in the evaluation were not directly involved in the intervention, and no information was given to them about the specific objectives of the intervention, we believe that changes in children's perception of their parents' parenting practices, communica-

TABLE 4. Parenting Measures Reported by Children and Parents Separately (N = 321)

	Preintervention Score	12 Months Postintervention Assessment Score	Score Difference	Number of Subjects with Improvement	One-Sided Sign Rank Test
Composite Measures	**Median (Q1, Q3)**	**Median (Q1,Q3)**	**Mean (95% CI)**	**(%)**	***P* Value**
Parent-Child Relationship					
Child	18 (15,21)	19 (16,22)	1.4 (.8, 1.9)	168 (52)	<.001*
Parent	19 (17,22)	20 (17,22)	.4 (.0, .9)	144 (45)	0,087
Positive Reinforcement					
Child	6 (4, 7)	7 (5, 9)	.7 (.4, 1.0)	157 (49)	<.001*
Parent	5 (3, 8)	6 (5, 8)	.4 (.2, .7)	132 (41)	.001*
Parental Monitoring					
Child	5 (3, 8)	8 (4,11)	1.9 (1.4, 2.4)	198 (62)	<.001*
Parent	7 (4,10)	9 (6,12)	1.5 (1.1, 2.0)	195 (61)	<.001*
Sexuality Education Communication					
Child	2 (0, 5)	7 (2,12)	3.3 (2.8, 3.9)	209 (65)	<.001*
Parent	2 (0, 8)	10 (8,12)	5.4 (4.9, 5.9)	265 (83)	<.001*
Sexual Risk Reduction Communication					
Child	1 (0, 4)	7 (3,12)	4.7 (4.2, 5.2)	250 (78)	<.001*
Parent	5 (2, 8)	10 (8,12)	4.3 (3.9, 4.7)	262 (82)	<.001*
Responsiveness					
Child	5 (3, 7)	9 (5,10)	2.0 (1.7, 2.4)	204 (64)	<.001*
Parent	9 (8,10)	9 (9,10)	.9 (.7, 1.1)	157 (49)	<.001*

*Results were considered significant if one-sided p value was less than the Bonferroni correction (.0083).

tion, and communication responsiveness are reflective of true changes in parents' behavior.

The reported increases in sexuality communication also suggest that the intervention may have helped overcome traditional cultural barriers that restrict parent-child communication about sexuality.

Through careful adaptation of the U.S. EBI we were able to effectively implement a parent-focused HIV prevention intervention. This has led to efforts to disseminate FMP throughout the Asembo region and the rest of Kenya. By March 2007, 4,105 (77%) of Asembo families with 9- to 12-year-olds had participated. By June 2009, FMP was delivered to 4,816 families in Uyoma, a neighboring community, with no prior program involvement. In 2008-9, 29 Kenyan nongovernmental organizations were trained in the planning, implementation, and monitoring of FMP. By October 2009, these organizations had reached over 42,000 families with FMP across seven provinces, and efforts continue to scale up the program in Kenya.

Most of the existing evidence about the influence of parents on adolescent behavior is derived from cross-sectional data. This evaluation provides longitudinal data on parental practices and sexuality communication as perceived by parents and their children; however, there are several limitations. First, because the evaluation is a pre/post design based on reports by participants in the intervention, social desirability is a concern; however, we applied several strategies to minimize this bias, such as using ACASI rather than face-to-face interviewing techniques and obtaining independent reports from parents and children. Second, including a control group composed of families not exposed to FMP would have greatly strengthened the plausibility of the causal relation between exposure to FMP and improved parenting practices and sexuality communication. As we were unable to apply this more rigorous study design at that time, we cannot exclude the possibility that factors outside of FMP contributed to the improvements measured. The main aim of our study was to quickly assess if an EBI adapted to a completely different cultural setting was acceptable and could produce similar intermediate outcomes. Third, although the results from this evaluation show significant changes in parenting practices and sexuality communication, the use of a nonrandom sample limits our ability to generalize the findings to other groups of parents. This sample was largely dominated by female parents, as women are usually the primary caregivers of children in the target age range. In FMP, only one parent participates from each family in order to have a broader reach across the community. However, our evaluation could have been strengthened by assessing changes in attitudes and practices among nonparticipating spouses, as was done in the PMP evaluation. Last, the assessment questions had not been previously used with this population, although extensive steps were taken to ensure that the measures used were reliable, valid, age appropriate, and culturally relevant. Further refinement and research on the validity of parenting measures is recommended for future studies.

The aim of this report was to evaluate acceptability and show that the adapted U.S. EBI retained its effectiveness to justify ongoing efforts to scale up FMP. Because FMP targets parents of preteens aged 10–12 years and the median reported age of sexual initiation is 16 years with 14% of adolescents initiating sex before age 13 (Amornkul et al., 2009, Vandenhoudt et al., 2004), large-scale multiyear longitudinal studies are needed to assess the program's effectiveness in reducing sexual risk behavior among adolescents as they grow older. Given the critical need for early prevention efforts with youth, and time and resource constraints, a larger study to examine the impact of a prerisk sexual prevention program on behavioral outcomes

was not undertaken. We plan to obtain funding for a longitudinal study to examine adolescent sexual risk outcomes associated with FMP in the near future.

CONCLUSION

Very high HIV prevalence among youth, particularly among girls, continues to occur in Nyanza Province, Kenya, despite high levels of awareness about HIV/AIDS. This indicates that new approaches to HIV prevention for young people are urgently needed. To stem the HIV epidemic, adolescents need an environment that supports the practice of safer sex, and parents have an important role to creating such an environment.

This evaluation of FMP demonstrates the viability of engaging parents to help prevent sexual risk among youth and ability to adapt and successfully implement a U.S. based EBI in a rural African setting. Parents have a unique and critical role in delivering prevention messages to youth before their sexual debut. Our data indicate that when provided the knowledge, skills, comfort, and confidence to communicate with their children about sexuality and sexual risk reduction, parents can adopt the role of sexuality educator, even in areas where cultural norms discourage such communication.

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