

## **CULTURAL ADAPTATION OF A U.S. EVIDENCE-BASED PARENTING INTERVENTION FOR RURAL WESTERN KENYA: FROM PARENTS MATTER! TO FAMILIES MATTER!**

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Evidence-based interventions (EBIs) are critical for effective HIV prevention, but time and resources required to develop and evaluate new interventions are limited. Alternatively, existing EBIs can be adapted for new settings if core elements remain intact. We describe the process of adapting the Parents Matter! Program, an EBI originally developed for African American parents to promote effective parent-child communication about sexual risk reduction and parenting skills, for use in rural Kenya. A systematic process was used to assess the community's needs, identify potential EBIs, identify and make adaptations, pilot-test the adapted intervention, and implement and monitor the adapted EBI. Evaluation results showed the adapted EBI retained its effectiveness, successfully increasing parent-child sexual communication and parenting skills. Our experience suggests an EBI can be successfully adapted for a new context if it is relevant to local needs, the process is led by a multidisciplinary team with community representation, and pilot-testing and early implementation are well monitored.

The need for effective interventions to prevent HIV transmission is urgent. With 2.7 million new infections occurring worldwide in 2007 (UNAIDS, 2008), transmission of HIV continues to outpace substantial efforts to scale-up AIDS treatment, particularly in sub-Saharan Africa, where two thirds of the HIV-infected population lives (UNAIDS, 2008). To maximize the effectiveness of HIV prevention efforts, evidence-based interventions (EBIs)—that is, those shown to be effective through rigorous evaluation—are needed. Developing new EBIs requires rigorous program evaluation, which is complex, expensive, time-consuming, and thus often unrealistic in the face of an HIV/AIDS epidemic whose magnitude calls for immediate action (Fitzgerald

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et al., 1999). Alternatively, adapting existing EBIs by tailoring them to new cultural settings allows for rapid implementation of interventions already known to be effective. The adaptation and dissemination of effective HIV prevention interventions is a priority for the President's Emergency Plan for AIDS Relief (U.S. State Department, 2009) and also forms the basis for the Center for Disease Control and Prevention's (CDC's) "Diffusion of Effective Behavioral Interventions" efforts (Dworkin, Pinto, Hunter, Rapkin, & Remien, 2008). This article describes the process of adapting an existing EBI to prevent HIV infection among youth for a new cultural context.

Replicating an EBI with a new target population is most likely to be successful at achieving the intended outcomes if it is implemented with fidelity—that is, when all activities are implemented as designed and with a similar population in the same type of settings as in the research trial (Kirby, Laris, & Roller, 2007; Solomon, Card, & Malow, 2006). Understandably, there is reluctance to replicate EBIs in new cultural settings owing to concerns about interventions' cultural appropriateness for different target populations (Fitzgerald et al., 1999; Miller, 2001). In addition, communities are more likely to adopt, participate in, and sustain an intervention if they feel a sense of ownership of it (Castro, Barrera, & Martinez, 2004), which is generally achieved through community participation in designing the intervention. Considering interventions are most successful when they are both based on science *and* culturally relevant (Castro et al., 2004), and considering the resources needed to develop and evaluate a new intervention, neither the exact replication of existing EBIs nor the development of new, culturally sensitive EBIs offers a sustainable solution. In light of this tension, the systematic, cultural adaptation of EBIs for new target populations and settings presents a way forward.

A large body of literature validates the adaptation of HIV prevention EBIs for new target populations within the United States and evidence is emerging to show that behavior change EBIs from the United States can be adapted for Africa (e.g. Baptiste et al., 2006; Fitzgerald et al., 1999; Lightfoot, Kasirye, Comulada, & Rotheram-Borus, 2007; Saleh-Onoya et al., 2008). The promising results from these evaluations provide support for adapting HIV prevention programs developed, implemented, and evaluated in Western settings for use in other cultural settings.

Certain principles and processes are beginning to emerge that promote successful program adaptation (Solomon et al., 2006), but there is little information about *how* EBIs have been systematically and effectively adapted for international settings. The purpose of this article is to contribute to the knowledge base around cultural adaptation by describing how the Parents Matter! Program, an EBI developed in the United States to help African American parents develop skills to prevent their children from engaging in sexual risk behaviors (Dittus, Miller, Kotchick, & Forehand, 2004), was successfully adapted for use in rural Kenya, as validated by positive evaluation results and high levels of satisfaction with the program among participants. We use the lessons learned from our adaptation process to suggest several key themes that should be considered when adapting an EBI for a new cultural setting.

## BACKGROUND

### PARENTS MATTER! PROGRAM

Scientifically and theoretically grounded, the Parents Matter! Program (PMP) is a community-based program designed to give parents of preteens the necessary skills to help their children avoid sexual risks and develop healthy sexual behaviors.

PMP raises parents' awareness of adolescent sexual risk behavior and offers parents guidance for parenting practices that have been shown in the literature to reduce sexual risk behavior among adolescents, including the use of positive reinforcement, monitoring, and effective parent-child communication (Dittus et al., 2004). PMP helps parents develop communication skills to effectively convey their values and expectations about sexual behavior, as well as critical messages about HIV, sexually transmitted infections (STIs), and pregnancy prevention, to their children prior to the onset of sexual activity.

PMP was evaluated through a randomized controlled trial with 1,115 African American parents of preteen aged 9-12 years (Forehand et al., 2007). At 6 months and 1 year after the program, compared with parents in the control group, parents in PMP had significantly increased the number of sex topics they discussed with their preteen and increased their knowledge, comfort, skills, and confidence in communicating about these sex topics, as reported separately by parents and children. In addition, despite time and resource constraints, 86% of parents attended at least four of the five program sessions and 90% parents rated the program as very important.

### YOUTH AT RISK IN KENYA

Kenyan youth living in Nyanza Province are at disproportionately high risk for HIV. With an HIV prevalence of 14.9%, Nyanza Province is the region most affected by HIV in Kenya (Ministry of Health Kenya, 2009). A 2003-4 survey of adolescents aged 15-19 years from the Asembo community of Nyanza Province showed an HIV prevalence of 8.6% among females and 0.7% among males (Amornkul et al., 2009), and 14% of adolescents had initiated sex before age 13, indicating the critical need for early HIV prevention efforts with youth (Vandenhoudt et al., 2004). Through the cultural adaptation process described in this article, further assessment among youth living in Asembo showed a need for a parent-level HIV prevention intervention and PMP was identified as an EBI that could potentially help meet the HIV prevention needs of Asembo's youth.

### CONCEPTUAL APPROACH

Within the prevention research field, there appears to be consensus that adaptation of EBIs is acceptable so long as fidelity is maintained to a program's causal mechanism (Bauman, Stein, & Ireys, 1991). Thus the challenge is to strike a balance between maintaining fidelity to the established components of an intervention and adapting it to meet the cultural and structural characteristics of a new setting. Kelly and colleagues (2000) have posited that an intervention is defined by its *core elements*—key features in the intervention's content, pedagogy, and implementation that are responsible for effectiveness. By identifying and maintaining fidelity to an EBI's core elements, the intervention's effectiveness is more likely to remain unaltered.

The core elements of PMP were defined by the theoretical framework on which the program is based and through experience with implementation. PMP's core *content* elements include the provision of information and skill-building to enhance parent-child communication, positive parenting, and child monitoring. Example core *pedagogical* elements include the sharing of relatable scenarios to personalize risk, role-plays with peers, and guided communication practice with children to build communication skills and confidence. Example core *implementation* elements include the delivery of program sessions once weekly over a 5-week period, with

children attending the final session, and delivery of the sessions by two trained and qualified facilitators. (For more information on PMP's core elements, see Long et al., 2004.) The core elements were not altered during the adaptation process so as to retain the intervention's effectiveness.

At the time that PMP was transferred to Kenya, little, if any, work had been published on the process of adapting EBIs to new cultural contexts. Therefore the team used a process they deemed logical based on their own experience with program implementation. This deficit in published descriptions of effective adaptation processes no longer exists. In reviewing the literature, it became evident that the process that had been undertaken to adapt PMP for Kenya closely aligns with CDC's Map of Adaptation Process (MAP) for adapting evidence-based behavioral interventions (McKelroy et al., 2006). To enrich the scientific discussion on effective adaptation processes, the organization of this article follows the CDC's MAP framework (briefly outlined in Table 1), and in the discussion we compare the process used to adapt PMP with CDC's MAP.

## ADAPTATION PROCESS

Through collaboration involving the Institute of Tropical Medicine (ITM), the Kenya Medical Research Institute (KEMRI), and the U.S. CDC, the Parents Matter! Program was culturally adapted for the rural Kenyan context. This section describes the adaptation process used, which began in mid-2003 and concluded with the completion of the outcome evaluation in 2006. See Figure 1 for a visual representation of the adaptation process.

### STEP 1: ASSESS

The first step in adapting an EBI for Kenya involved assessing the HIV prevention needs and behavioral trends of the target population, potential EBIs to meet these needs and their relevance to the target population, agency capacity to implement the intervention, and potential stakeholders.

*Target Population.* To gain an understanding of the causes underlying the sexual and reproductive health problems of youth in Kenya, ITM conducted a needs assessment in Nyanza Province, Kenya, in 2001. Focus group discussions with in-school and out-of-school youth aged 10-24 years revealed that insufficient knowledge about STIs, AIDS, and sexuality in general was one factor contributing to adolescent health issues. Youth repeatedly reported a lack of communication with adults about sexual issues and called upon adults and parents to become more communicative and participate in HIV prevention efforts. This information highlighted the need for a parent-focused intervention to enable communication with youth about sexual health issues.

More broadly, results from the assessment showed the need for a comprehensive approach that would address adolescent sexual health needs at the individual, family, and community levels. This led to the formation of the multitiered Youth Intervention Program (YIP) (World Health Organization, 2007). This article focuses on the family-level component of the YIP.

Within Nyanza Province, the community of Asembo was chosen as the YIP implementation site because of its lack of youth activities and because Asembo is part of an ongoing demographic surveillance project that provided population data

TABLE 1. The Five Action Steps in the Center for Disease Control and Prevention's Map of Adaptation Process

1. Assess	Assess the target population's risk factors and behavioral determinants, potential EBIs, stakeholders input, and organizational capacity to implement the intervention.
2. Select	Select an intervention and determine whether or not adaptation is necessary.
3. Prepare	Make changes to the intervention, prepare the organization for implementation, and pre-test intervention materials.
4. Pilot	Create an implementation plan and conduct an exploratory pilot test.
5. Implement	Implement the adapted intervention with systematic monitoring and evaluation.

*Note.* From "Adapting Evidence-Based Behavioral Interventions for New Settings and Target Populations," by V.S. McKelroy et al., 2006, *AIDS Education and Prevention*, 18(Suppl. A), .

needed for program evaluation. Asembo is a rural subsistence farming and fishing community located on the shores of Lake Victoria, and is inhabited mainly by ethnic Luos.

*Potential Interventions.* From the needs assessment it was clear that a parent-focused intervention was needed to enhance parent-child communication about sexual health issues. Although a strong research base illuminated the importance of early and open parent-child sexuality communication for increasing safer sex behavior among adolescents, at the time that the YIP was being developed in Asembo, information about EBIs that involved parents or caregivers was only beginning to emerge. Thus, the team relied mainly on consultations with experts in the area of adolescent HIV prevention to identify an appropriate intervention that would meet the needs of the YIP. In this way, PMP was identified as an intervention that could potentially be adapted to Kenya in order to fill the gap in youth sexuality education. Several criteria pointed toward PMP's suitability for inclusion in the YIP over other interventions. First, PMP provided a pre-risk strategy that would reach children at an early age, prior to their engagement in sexual risk behaviors, thus helping to meet the critical need in Nyanza Province for early HIV prevention efforts among youth. Second, it would meet the needs identified by youth during the needs assessment and would provide the family-level component of the YIP by focusing on parents as the intervention's target audience rather than simply including parent activities as part of an adolescent-targeted intervention. Third, an EBI was desired, and preliminary results from the randomized controlled trial demonstrated PMP's effectiveness. Similarly, as a curriculum-based group-level intervention, its effect on parent-child communication could be more easily evaluated than some other intervention types, such as a mass media campaign. Fourth, it was a community-based program, which was felt to be most appropriate for a rural population of fishers and farmers (compared with a setting such as a worksite intervention). Finally, the PMP curriculum was made freely available to the YIP team and one of the program developers from the CDC was available to provide technical assistance throughout the adaptation, implementation, and evaluation process, two factors which enabled the adaptation process to proceed smoothly.

To gain a full understanding of PMP's theoretical foundations, core elements, and resource requirements, the YIP team consulted a CDC program developer who described the program's theoretical underpinnings, shared experiences implementing the program in the United States and provided program materials. Through careful review of the PMP program materials and logic model, the YIP team determined

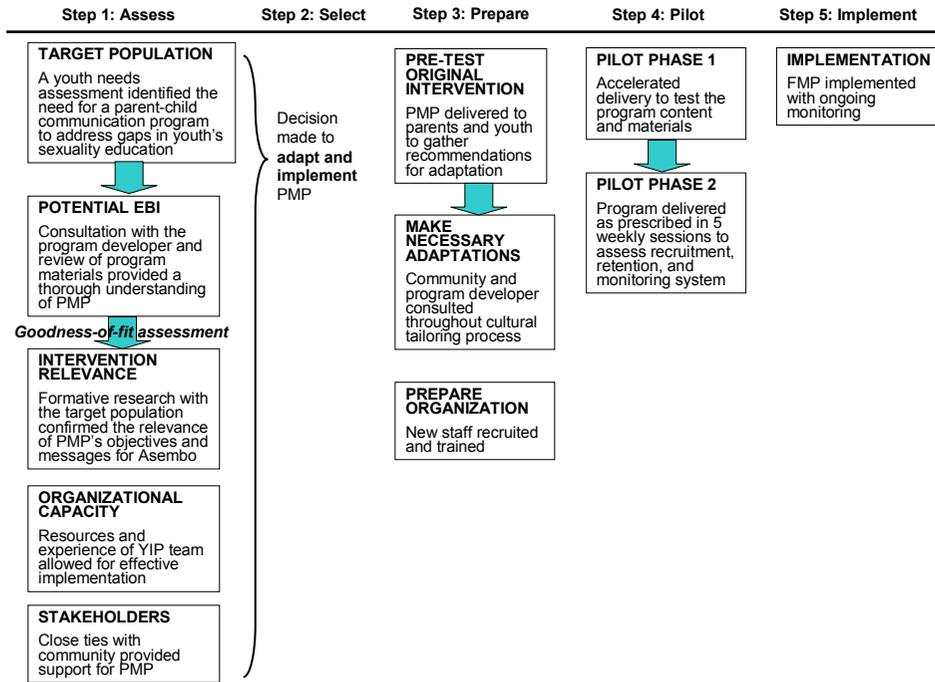


FIGURE 1. Procedural Map of Adapting the Parents Matter! Program (PMP) to Rural Kenya.

Note. EBI - evidence-based intervention; PMP - Parents Matter! Program; YIP - Youth Intervention Program.

that PMP could potentially address the community's risk behaviors and need for a parent-focused intervention.

*Intervention Relevance.* In 2003, the YIP team conducted extensive formative research with the Asembo community to assess the relevance of PMP. Workshops and small-group discussions were held with parents, teachers, community leaders such as village chiefs and religious leaders, and adolescents to fully understand the changing context of sexuality education, the role of parents in sexuality education in Luo society, and whether there was a need and desire for a parent-focused HIV prevention intervention in the community. During the small-group discussions participants also reviewed the major concepts presented in PMP.

Through the formative research, it became clear that a gap had emerged in youth sexuality education among the Luo. Participants reported that it is culturally taboo for Luo parents to discuss sexuality with their own children; traditionally, this was the role of grandparents. However, owing to shifting cultural norms, elders no longer play a major role in communicating with youth about sexuality. Participants in the group discussions acknowledged this gap in children's sexuality education and recognized the need for parents to protect their children from the dangers of early sexuality. However, parents reported a lack of knowledge, skills, and confidence to undertake this role. The groups acknowledged the relevance and acceptability of PMP's core elements and felt that a family-based intervention was timely.

*Organizational Capacity.* The collaboration between KEMRI, U.S. CDC, and ITM afforded the YIP the necessary resources and experience to adapt and implement PMP. An epidemiologist from ITM with extensive experience in HIV prevention work in sub-Saharan Africa coordinated the project with local staff, including two social workers and an anthropologist. A CDC program developer was available to provide ongoing technical assistance.

*Stakeholders.* One of the most important aspects of the team's capacity to implement PMP was a strong relationship with the target community, which they had established through previous activities related to the YIP. Establishing a link with the school system provided access to PMP's target population—parents of preteen. The YIP team had also set up local youth committees and later established a community advisory board (CAB) with representation from churches, local administration, the health and education sector, social services, parents, and youth, providing an avenue for soliciting community support for the new intervention.

#### STEP 2: SELECT

Based on the youth needs assessment and ensuing formative work, it was clear that PMP could address the needs of the target population. The community saw a clear need for a parent-child communication program to help fill the gap in children's sexuality education and parents were willing to participate in such a program. PMP would provide the information and skills parents needed to communicate with their children about sexuality and reproductive health. Thus the decision was made to adapt PMP using community input to inform the modifications.

#### STEP 3: PREPARE

The third step involved pretesting the original intervention materials, making the necessary adaptations to the intervention, and preparing the organization for implementation.

*Pretesting Original Intervention.* An independent facilitator assisted in pretesting PMP with parents, guardians, and youth in Asembo. Older youth (aged 15-19 years) were included to better understand the type of information they would have liked their parents to have shared during their pre-teen years. After each session, YIP staff used a discussion guide to capture participants' feedback on the relevance of the program's goals, the comprehensibility of the content and materials, and the replicability of delivery methods.

The results of the pretest once again validated the relevance of the intervention's goals and key messages for the Kenyan setting. Participants' feedback allowed the YIP team to identify areas in which adaptation was required, including modifications to the program delivery and cultural tailoring of the program's content.

In terms of program delivery, participants' recommendations reflected the logistical realities of implementing a program in a rural African setting. For example, PMP uses videos to provide example scenarios to spark discussion; because of resource constraints, participants suggested that videos be replaced by audiotapes, which can be played using battery-operated equipment. Also, owing to low literacy rates among local adults, drawings were used to illustrate messages that were originally conveyed through text on posters and handouts.

Regarding cultural tailoring of the content, translating the program materials into the local language was a clear necessity, and local statistics on HIV, STIs, and

unplanned pregnancies were also incorporated to help illustrate the specific problems youth face in Asembo. Participants also recommended incorporating local proverbs and songs to help build a sense of connectedness among program participants. Another important recommendation was to rename the program. In rural Kenya it is the broader family that helps raise and socialize children, and so it was felt that the name of the program should indicate inclusiveness of other caretakers beyond parents. Hence the name of the intervention was changed from "Parents Matter!" to "Families Matter!"

*Making Necessary Modifications.* In 2004 the YIP team led the process of making modifications to PMP, which was an iterative process involving the CDC program developers and the Asembo community. Having a team mostly comprised of local staff helped ensure the cultural appropriateness of adaptations since the team could draw upon its familiarity with the culture and preferences of the target population. Consulting the program developers ensured that the internal logic and core elements of the program remained intact and provided a forum for technical discussion throughout the course of adaptation. Involving the community in the adaptation process ensured that the program reflected local needs and preferences and also enhanced the community's sense of ownership of the program.

Community members were heavily involved in the development of the new program materials. For example, local youth created drawings and took photographs that were used in developing key message posters and participated in a contest to design a new logo; volunteer parents rewrote role-plays and audio scripts to incorporate culturally relevant scenarios; and parents and youth assisted in recording the audios. Members of the CAB reviewed reports from the pretest of PMP to verify recommendations given by community members. As the adaptation process progressed, the CAB was often consulted regarding suggested adaptations and ultimately reviewed and approved the final materials for the adapted program.

*Organization Preparation.* With strong linkages to the community in place, the primary area needing additional capacity was staffing. New staff members, including facilitators to deliver the program and a community liaison to coordinate field activities, were recruited from the local community and trained by two PMP consultants from the United States. Facilitators received general training on facilitation skills followed by a 1-week training course during which they gained in-depth knowledge about the theoretical underpinnings of the Families Matter! Program (FMP) and demonstrated facilitation of many of the activities. Four research assistants trained in the social sciences with prior experience in HIV prevention programming and research in Kenya were hired to supervise facilitators and conduct the program evaluation.

#### STEP 4: PILOT

The fourth step involved creating an implementation plan, which outlined participant recruitment, program delivery procedures, and a plan for monitoring and evaluation, and conducting an exploratory pilot test with a small number of participants receiving the adapted intervention.

The YIP team conducted the pilot test in two phases. In the first phase, an accelerated version of the program was delivered to parents and guardians of 9-12-year-old children with participants receiving the five sessions in five consecutive days to assess program delivery and content. During the second phase of the pilot, facilita-

tors delivered the intervention in the prescribed five weeks (one session per week) to fully assess implementation, participant recruitment and retention, and the monitoring and evaluation system. In both phases target children participated in the last session. Participating parents/guardians and children, facilitators, and observing research assistants made recommendations on how to improve implementation of the intervention. The pilot test allowed facilitators to improve their facilitation skills, such as cofacilitation, encouraging full participation, generating enthusiasm within the group, time management, and managing sensitive group discussions. It also informed further refinements of the program materials, implementation plan, participant recruitment and retention procedures, and monitoring and evaluation plan.

#### STEP 5: IMPLEMENT

The final step was to implement and evaluate the adapted intervention. During implementation, research assistants provided routine ongoing supervision, using a checklist to assess fidelity to the curriculum and the quality of delivery.

An outcome evaluation of FMP was conducted with a nonrandom sample of 375 parents and their 9-12-year-old children between 2004 and 2006 using a pre/post design. Similar to the results seen in the PMP randomized controlled trial, at 15 months after attending the program, parents in FMP had significantly increased their positive parenting skills, discussion of sexual topics with their children, and their knowledge, skills, comfort, and confidence to address sexuality with their children, as reported by parents and children separately. Parents' attitudes regarding sexuality education also positively changed. Retention rates were high, with 98% of parents attending at least four out of five sessions, and parents reported high satisfaction with the intervention. A description of the data collection process and the full results from this evaluation are presented elsewhere (Vandenhoudt et al., this issue).

With the evaluation results indicating that the adapted program had retained the effectiveness of the original program and that it was highly accepted by the community, the intervention was expanded to reach all eligible families in Asembo. By the end of 2007, over 75% of families with 9-12-year-old children in Asembo had participated in FMP. The success and acknowledged importance of the program encouraged further expansion, and in 2007 a system of scale-up through 27 additional nongovernmental organizations began. The program is currently being delivered in seven of Kenya's eight provinces and continues to expand. By October 2009, more than 45,000 Kenyan families have participated in FMP.

#### DISCUSSION

Using the process described in this article, a U.S. parent-level EBI designed to provide parents with the tools they need to enhance healthy parenting and promote communication about sexuality and sexual risk reduction with their preteen children was successfully adapted for the rural Kenyan context. The core elements of the program remained intact during adaptation while other characteristics of the program were tailored to fit the cultural context. The positive results of the outcome evaluation confirm that the adapted intervention remained effective, and despite cultural norms that discourage discussion of sexual issues between parents and children, participation and satisfaction rates were high.

Our experience provides support for the CDC's Map of Adaptation Process as an effective model. Although the model was not published at the time PMP was

being adapted for Kenya, the process we describe in this article appears to closely mirror the CDC's MAP. Noteworthy differences occurred in the *assess* and *prepare* steps. In the *assess* step, the YIP team conducted extensive formative research to assess PMP's relevance for the target population, an activity that is not specifically delineated in the CDC's MAP. In the *prepare* step, the YIP team pretested the *original* intervention with community members to collect more detailed recommendations to inform adaptations. Unlike the CDC's MAP process, the *adapted* materials were not pretested, although the CAB was heavily involved in reviewing the final materials and a two-phase pilot-test provided a similar forum for testing the adapted materials. These differences may point to limitations in the CDC's MAP, as we found that both the formative research and pretesting of the original intervention were important for giving the community a voice in determining whether or not the intervention was a good fit and what modifications were needed to ensure the intervention resonated with the target community.

The adaptation process described in this article also had its limitations. First, because parent-targeted EBIs for adolescent HIV prevention were only beginning to emerge, a systematic literature search was not conducted to identify multiple EBIs for consideration during the *assess* step. If others repeat the described adaptation process, we recommend conducting a literature review, searching relevant clearing-houses, and consulting content experts to identify several EBIs from which the most relevant can be chosen. Similarly, an African-grown EBI was not identified that would meet the intervention needs. Utilizing an African EBI would have been more desirable than using a U.S. intervention because the adaptation needs would likely have been fewer. A second limitation was the workload; because of the newness of this process for the YIP team and a desire to do a thorough job—particularly considering that implementing a program that encouraged parent-child communication about sexual issues would challenge cultural norms that discourage such communication—an excessive amount of work was done during a few of the steps. For example, during the assessment of the intervention's relevance, formative research was done that included three group discussions with 86 participants and 12 workshops with 360 participants. The same information could have been obtained using just one of these methodologies and involving fewer participants. Similarly, the pretesting of the materials could have been accomplished more expediently by only presenting areas of concern rather than going through the entire intervention, and the community could have been involved in the materials development at this point rather than reengaging them at a separate time point. There were several limitations with the evaluation design; these are described elsewhere (Vandenhoudt et al., this issue).

Excellent guidance on program adaptation principles and procedures is emerging in the literature (Devieux et al., 2005; McKelroy et al., 2006; Solomon et al., 2006; Tortolero et al., 2005); however, most of this guidance is based on the adaptation of HIV prevention programs for new populations within the United States. Based on our experience with the adaptation of a U.S. EBI for sub-Saharan Africa, several key themes emerged that were particularly important to our success and may be useful for future efforts in international adaptation of EBIs.

1. To best match an intervention to the needs of the community and foster the community's receptiveness to the intervention, conduct a community needs assessment. Communities are more receptive to projects brought from the "outside" when they see a need for intervention and a benefit to their community (Freier et al., 2005). Conducting a community needs assessment helps determine whether

the community perceives a need for the intervention and whether they will be willing to participate in it. Numerous researchers also cite the utility of conducting a community needs assessment to understand how to tailor an EBI's content, methodologies, and implementation processes to the needs and preferences of the target population (Devieux et al., 2005; Kelly et al., 2000; Tortolero et al., 2005). Our experience validated these recommendations for international adaptation: the rapid youth needs assessment and formative research helped inform the necessary modifications to adapt PMP for Kenya and, equally important, validated the fact that the community felt a need and desire for an intervention to improve parent-child communication about sexual issues.

2. Community involvement in the adaptation process is critical to the success of the adapted intervention. Our adaptation process was guided by the conviction that an intervention's success is not viable without attaining the community's "buy-in" and that the community is best placed to determine the intervention strategies that are likely to be acceptable and sustainable in their setting. Community involvement in the development or adaptation of interventions has been found to build acceptance and provide a sense of ownership of an intervention, which can aid in recruitment and retention, and in ensuring cultural relevance (Castro et al., 2004; Devieux et al., 2005; Sormanti, Pereira, El-Bassel, Witte, & Gilbert, 2001). By using the YIP team's established relationship within the community, key community members were engaged in the process and played an integral role in adapting the intervention, pretesting the materials, and piloting the intervention. Through the community needs assessment, formative research, and pretesting activities, the YIP team gained information to better understand the needs of the community and recommendations for modifications. Introducing key community members to FMP early on and involving them throughout the adaptation process facilitated community ownership of the program, ultimately contributing to high levels of participation and retention.
3. A multi-disciplinary team that includes cultural "insiders" and program experts helps ensure the intervention's appropriateness for the new population while maintaining fidelity to core elements. A multidisciplinary team brings a wide range of expertise that is critical to the success of the adaptation process. Kelly and colleagues (2000) recommended close collaboration between researchers and program implementers to help address issues of fidelity and adaptation. Similarly, in relation to intervention development, Sormanti and colleagues (2001) found that collaboration between clients (who contribute the perspective of lived experience), service providers (who bring perspective about program feasibility), and researchers (who provide knowledge to maintain the scientific integrity of a program) results in programs that are relevant, realistic, and effective. Our experience in the adaptation of PMP for Kenya confirms the importance of using a multidisciplinary team during adaptation. Similar to Sormanti and colleagues' findings, collaboration between the community (who brought intimate knowledge of the community's needs and cultural preferences), the YIP team (who provided knowledge about how to best coordinate activities and what methods of delivery would be most feasible), and the CDC program developers (who ensured that the core elements of the program were retained throughout the adaptation process) resulted in an adapted program that is relevant, realistic, and effective.

4. Monitoring the pilot test and implementation is critical to ensuring program quality and fidelity to the core elements of the EBI. The CDC's MAP emphasizes the importance of ongoing process monitoring and evaluation, routine supervision and quality assurance, and continuous monitoring to ensure fidelity to the core elements of the EBI (McKelroy et al., 2006). Similarly, we found that observation of the pilot test and, once implementation had begun, the intervention sessions, ensured that the facilitators delivered the intervention with fidelity to the curriculum and implementation plan.

Ultimately, the Kenya experience provided great insight on how to adapt FMP for other countries. Drawing upon the themes described above, FMP has been adapted in Botswana and Côte d'Ivoire using a more streamlined approach. This approach involves collaboration between in-country program implementers, the CDC program developers, and representatives from the targeted community in completing three main steps. First, a community needs assessment is conducted to ensure a need and a desire for the program. Second, a two-day adaptation workshop is held during which representatives from the community provide feedback on various components of the intervention, which informs the necessary modifications. Third, the adapted intervention is pilot-tested to fine-tune the adaptations and prepare for implementation; the pilot test is an accelerated one-week delivery of the program, similar to the first phase of Kenya's pilot test.

## CONCLUSION

Evidence-based approaches are critical to curbing the AIDS epidemic, but to be successful, intervention models must reflect the needs and cultural context of the targeted community. Adapting extant EBIs that are effective in Western settings for other cultural settings can reduce the time and resources needed to implement efficacious HIV prevention interventions. EBIs can be successfully adapted to new cultural settings if they are relevant to the needs of the community, a multidisciplinary team leads the adaptation process with heavy involvement by the community, and pilot-testing and implementation of the adapted EBI are well monitored.

## REFERENCES

- Amornkul, P. N., Vandenhoudt, H., Nasokho, P., Odhiambo, E., Mwaengo, D., Hightower, A. et al. (2009). HIV prevalence and associated risk factors among individuals aged 13-34 years in rural western Kenya. *PLoS ONE*, *4*(7), e6470.
- Baptiste, D. R., Bhaha, A., Petersen, I., McKay, M., Voisin, D., Bell, C. et al. (2006). Community collaborative youth-focused HIV/AIDS prevention in South African and Trinidad: Preliminary findings. *Journal of Pediatric Psychology*, *31*(9), 905-916.
- Bauman, L. J., Stein, R. E. K., & Ireys, H. T. (1991). Reinventing fidelity: The transfer of social technology among settings. *American Journal of Community Psychology*, *19*(4), 619-639.
- Castro, F. G., Barrera, M., & Martinez, C. R. (2004). The cultural adaptation of prevention interventions: Resolving tensions between fidelity and fit. *Prevention Science*, *5*(1), 41-45.
- Devieux, J. G., Malow, R. M., Rosenberg, R., Jean-Gilles, M., Samuels, D., Ergon-Perez, E. et al. (2005). Cultural adaptation in translational research: Field experiences. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, *82*(2, Suppl. 3), iii82-iii91.
- Dittus, P., Miller, K. S., Kotchick, B. A., & Forehand, R. (2004). Why Parents Matter!: The conceptual basis for a community-based HIV prevention program for the parents of

- African American youth *Journal of Child and Family Studies*, 13(1), 5-20.
- Dworkin, S. L., Pinto, R. M., Hunter, J., Rapkin, B., & Remien, R. H. (2008). Keeping the spirit of community partnerships alive in the scale up of HIV/AIDS prevention: Critical reflections on the roll out of DEBI (Diffusion of Effective Behavioral Interventions). *American Journal of Community Psychology*, 42, 51-59.
- Fitzgerald, A. M., Stanton, B. F., Terreri, N., Shipena, H., Li, X., Kahihuata, J. et al. (1999). Use of Western-based HIV risk-reduction interventions targeting adolescents in an African setting. *Journal of Adolescent Health*, 25, 52-61.
- Forehand, R., Armistead, L., Long, N., Wyckoff, S. C., Kotchick, B. A., Whitaker, D. et al. (2007). Efficacy of a parent-based sexual-risk prevention program for African American preadolescents. *Archives of Pediatric and Adolescent Medicine*, 161(12), 1123-1129.
- Freier, M. C., McBride, D., Hopkins, G., Babikian, T., Richardson, L., & Helm, H. (2005). The process of research in international settings: From risk assessment to program development and intervention. *Journal of Urban Health*, 82(3, Suppl. 4), iv9-iv15.
- Kelly, J. A., Heckman, T. G., Stevenson, L. Y., Williams, P. N., Ertl, T., Hays, R. B. et al. (2000). Transfer of research-based HIV prevention interventions to community service providers: Fidelity and adaptation. *AIDS Education and Prevention*, 12(Suppl. A), 87-98.
- Kirby, D. B., Laris, B. A., & Roller, L. A. (2007). Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health*, 40, 206-217.
- Lightfoot, M. A., Kasirye, R., Comulada, W. S., & Rotheram-Borus, M. J. (2007). Efficacy of a culturally adapted intervention for youth living with HIV in Uganda. *Prevention Science*, 8(4), 271-273.
- Long, N., Austin, B.-J., Gound, M. M., Kelly, A. O., Gardner, A. A., Dunn, R. et al. (2004). The Parents Matter! Program Interventions: Content and the Facilitation Process. *Journal of Child and Family Studies*, 13(1), 47-65.
- McKelroy, V. S., Galbraith, J. S., Cummings, B., Jones, P., Harshbarger, C., Collins, C. et al. (2006). Adapting evidence-based behavioral interventions for new settings and target populations. *AIDS Education and Prevention*, 18(Suppl. A), 59-73.
- Miller, R. L. (2001). Innovation in HIV prevention: Organizational and intervention characteristics affecting program adoption. *American Journal of Community Psychology*, 29(4), 621-647.
- Ministry of Health Kenya. (2009). *2007 Kenya AIDS Indicator Survey* Nairobi, Kenya: National AIDS & STI Control Programme.
- Saleh-Onoya, D., Braxton, N. D., Sifunda, S., Reddy, P., Ruiter, R., Borne, B. V. D. et al. (2008). SISTA South Africa: The adaptation of an efficacious HIV prevention trial conducted with African-American women for isiXhosa-speaking South African women. *Journal of Social Aspects of HIV/AIDS*, 5(4), 186-191.
- Solomon, J., Card, J. J., & Malow, R. M. (2006). Adapting efficacious interventions: Advancing translational research in HIV prevention. *Evaluation and the Health Professions*, 29, 162-194.
- Sormanti, M., Pereira, L., El-Bassel, N., Witte, S., & Gilbert, L. (2001). The role of community consultants in designing an HIV prevention intervention. *AIDS Education and Prevention*, 13(4), 311-328.
- Tortolero, S. R., Markham, C. M., Parcel, G. S., Peters, R. J., Escobar-Chaves, S. L., Basen-Engquist, K. et al. (2005). Using intervention mapping to adapt an effective HIV, sexually transmitted disease, and pregnancy prevention program for high-risk minority youth. *Health Promotion Practice*, 6(3), 286-298.
- UNAIDS. (2008). *2008 Report on the global AIDS epidemic*. Geneva, Switzerland: Author.
- U.S. State Department. (2009). *Accountability: Report on PEPFAR Partnerships for Prevention, Treatment and Care*. Retrieved May 11, 2009, from [http://www.pepfar.gov/press/fifth\\_annual\\_report/113726.htm](http://www.pepfar.gov/press/fifth_annual_report/113726.htm)
- Vandenhoudt, H., Amornkul, P. N., Odhiambo, F., Nasokho, P., Otwoma, N., Mwaengo, D. et al. (2004, July). *First sexual intercourse and exposure to HIV infection among young women in a high HIV prevalence area in Western Kenya*. Paper presented at the 15th International AIDS Conference, Bangkok, Thailand.
- Vandenhoudt, H., Miller, K. S., Ochura, J., Wyckoff, S. C., Obongo, C. O., Otwoma, N. J. et al. (2010). Evolution of a U.S. Evidence-based parenting intervention in rural Western Kenya: From Parents Matter! to Families Matter! *AIDS Education and Prevention* 22(4).
- World Health Organization (2007). *Summaries of projects in developing countries assisting parents of adolescents*. Geneva, Switzerland: Author.