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FEASIBILITY ANALYSIS OF AN EVIDENCE-BASED POSITIVE PREVENTION INTERVENTION FOR YOUTH LIVING WITH HIV/AIDS IN KINSHASA, DEMOCRATIC REPUBLIC OF THE CONGO

L. Parker, **S. Maman**, **A. Pettifor**, **J. L. Chalachala**, **A. Edmonds**, **C. E. Golin**, **K. Moracco**, and **F. Behets for the SYMPA Study Team**

L. Parker is afiliated with Futures Group Chapel Hill, North Carolina; S. Maman, C. E. Golin, & K. Moracco are affiliated with Department of Health Behavior, Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, Chapel Hill; A. Pettifor, A. Edmonds, and F. Behets are affiliated with the Department of Epidemiology, Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, Chapel Hill; J. L. Chalachala is affiliated with Kinshasa School of Public Health, Kinshasa, Democratic Republic of the Congo; C. E. Golin and F. Behets are affiliated with the Department of Medicine, The University of North Carolina at Chapel Hill School of Medicine

Abstract

We evaluated the feasibility of a Positive Prevention intervention adapted for youth living with HIV/AIDS (YLWH) ages 15–24 in Kinshasa, Democratic Republic of the Congo. We conducted in-depth interviews and focus group discussions with intervention facilitators and YLWH participants on the following four areas of a feasibility framework: acceptability, implementation, adaptation, and limited-efficacy. The adapted intervention was suitable, satisfying, and attractive to program facilitators and participants and able to be implemented effectively. It performed well with a new population and showed preliminary efficacy. However, we identified certain aspects of the intervention that must be addressed prior to wider implementation such as: (1) including more content on navigating marriage while living with HIV and disclosure; (2) adjusting intervention timing and session length; and (3) simplifying the more complicated content. An adapted evidence-based intervention was found to be feasible and lessons learned can be applied to YLWH in other low-resource settings.

Effective HIV prevention programs for people living with HIV/AIDS (PLWH) (also called Positive Prevention) are important to reduce new infections and to ensure PLWH remain healthy (Kalichman, 2005). Positive Prevention programs focus on increasing early diagnosis of HIV; increasing the use of health care and preventive services among PLWH; improving quality of care and treatment for PLWH; improving PLWH's adherence to treatment; and helping PLWH adopt and maintain behaviors that reduce the risk of HIV and STI transmission (Kalichman, 2005). In 2009, the Global Network for People Living with HIV (GNP+) and UNAIDS developed an expanded Positive Prevention strategy entitled, "Positive Health, Dignity and Prevention," which stresses the importance of the health and prevention needs of HIV positive individuals in addition to the need to prevent the further

Address correspondence to Lisa Parker, Futures Group, 308 W. Rosemary St. Suite 203A, Chapel Hill, NC 27516. lparker@futuresgroup.com.

SYMPA Study Team: Delphine Kizungu, Alice Tabala, Clarisse Bokwala, Sammy Siwadio, Jeanne Ngwele, Odette Daiku, Faustin Kitetele, and Jean Lusiama, all of the Kinshasa School of Public Health, Kinshasa, Democratic Republic of Congo, and Catherine Akele, Kalembe Lembe Pediatric Hospital, Kinshasa, Democratic Republic of the Congo.

spread of the disease, within a human rights framework (Global Network of People Living with HIV & UNAIDS, 2009).

Behavioral measures to prevent the sexual transmission of the virus play an important role in combination prevention strategies (Montague, Vuylsteke, & Buve, 2011). Recent findings that early initiation of antiretroviral (ARV) treatment by PLWH can prevent the spread of HIV to their sexual partners are promising (Cohen et al., 2011), but will be effective only if the PLWH are adherent to their medications and if their viral loads remain undetectable. Positive Prevention behavioral interventions can reach PLWH before they are eligible for treatment, and can also help keep individuals engaged once they are receiving treatment (Walensky, 2009).

HIV AND YOUTH SEXUAL BEHAVIOR IN THE DEMOCRATIC REPUBLIC OF THE CONGO

In the Democratic Republic of Congo (DRC), over 60% of the population is under 20 years of age and the prevalence of HIV among youth 15 to 24 years old is 0.8% overall and 1.4% in the capital of Kinshasa (Ministry of Planning Democratic Republic of the Congo, 2007). Research has shown that over half of the young women living with HIV ages 14–24 and a quarter of the young men ages 14–24 living with HIV in Kinshasa already had sexual intercourse, with only 53% of young women and 67% of young men reporting using a condom at their most recent sexual act (Behets & Pettifor, 2008). Therefore, this population is at risk of transmitting the virus to their partners through unprotected sex (Morin et al., 2007).

POSITIVE PREVENTION INTERVENTIONS

There are few Positive Prevention interventions that have been implemented and evaluated for Youth Living with HIV/AIDS (YLWH) in sub-Saharan Africa (SSA). To our knowledge, only one Centers for Disease Control and Prevention (CDC) Evidence Based Intervention (EBI) has been adapted and implemented in SSA for YLWH (Lightfoot, Kasirye, Comulada, & Rotheram-Borus, 2007). We evaluated the feasibility of an evidence-based, Positive Prevention intervention adapted specifically for YLWH ages 15–24 in Kinshasa, DRC, anticipating that lessons learned would be relevant in other SSA countries where the HIV incidence among youth is the highest in the world (Joint United Nations Programme on HIV/AIDS, 2010).

FRAMEWORK FOR FEASIBILITY STUDY ANALYSIS

A recent examination of the feasibility of public health interventions led to the development of guidelines to help evaluate and prioritize those interventions deemed feasible and that have the greatest likelihood of being efficacious (Bowen et al., 2009). These guidelines, hereafter referred to as the Bowen Feasibility Framework, served as the framework for the analysis of study data. The Bowen Feasibility Framework identifies eight possible areas of focus that can be chosen based on the specific goals and objectives established by the researchers: acceptability, demand, implementation, practicality, adaptation, integration, expansion, and limited-efficacy testing. Four of the eight possible areas of interest were chosen for this study: acceptability, implementation, adaptation, and limited-efficacy testing (see Table 3). The goal of this analysis was to examine if the adapted Positive Prevention intervention was feasible and is therefore appropriate for wider implementation and evaluation.

METHODS

STUDY OVERVIEW, STUDY SITE, AND RECRUITMENT AND ELIGIBILITY

This research was part of a larger study to develop a Positive Prevention program for YLWH ages 15–24 in the DRC that addresses the youths' developmental needs and helps them cope with HIV in the context of their emerging independence and sexuality. This paper will focus on the feasibility analysis of the adapted intervention. A family-centered HIV care and treatment program at a pediatric hospital in Kinshasa was the site of this study. The program provides comprehensive HIV medical care (including ARV treatment following World Health Organization guidelines) and psychosocial support to children and their parents and guardians, as well as other household members. As of April 2012, the program had served more than 2,146 HIV-positive patients including 191 YLWH aged 15–24. To be eligible for participation in the pilot intervention, YLWH had to: (1) know their HIV-positive status; (2) be a patient at the study clinic; (3) be 15–24 years of age; (4) agree to participate in digitally recorded focus group discussions (FGDs); (5) be mentally competent and healthy enough to participate; and (6) be willing to attend six intervention sessions. After parental or guardian informed consent was obtained for youth aged 15–17, these youth provided their assent to participate. Written informed consent was obtained from YLWH aged 18–24. All study procedures were approved by the UNC Institutional Review Board and by the Kinshasa, DRC School of Public Health Ethics Committee.

ADAPTED INTERVENTION

The intervention, Supporting Youth and Motivating Positive Action or SYMPA, is a six-session risk reduction intervention targeted for YLWH in Kinshasa, DRC, adapted from the Healthy Living Project (The Healthy Living Project Team, 2007; Table 1). Three major adaptations were made to the original intervention: (1) reduction of sessions from 15 to 6 (this was done through combining similar sessions and eliminating content not directly relevant for the target population); (2) change from an individual adult format to a single-sex youth group format; and (3) the addition of a "Very Important Person" (VIP) social support component. Details of the adaptation process are available elsewhere (Parker et al., 2013). The Kinshasa-based study coordinator and the four intervention facilitators participated in a training in which each session was reviewed in detail and practiced as a group. Each session was planned to last approximately 90 minutes and scheduled over a period of six weeks, with one session each week.

STUDY PARTICIPANTS

Two single-sex groups with six boys in the male group and seven girls in the female group were recruited with ages ranging from 15 to 20. Among the six male participants one was 15, one was 16, two were 18, and two were 19. Among the seven female participants two were 15, one was 16, one was 17, two were 18, and one was 20. One participant had completed secondary school and all the other participants had attended some years of secondary school. All youth recruited spoke Lingala. One male and one female health care provider facilitated the male group and two female health care providers facilitated the female group. Of the four intervention facilitators three were nurses and one was a counselor, all currently working at the study site.

DATA COLLECTION

Data were collected from multiple sources including: (1) demographic questionnaires with YLWH participants; (2) in-depth interviews (IDIs) with facilitators; (3) evaluation reports completed by the facilitators after each session; (4) FGD with facilitators; (5) single-sex FGDs with YLWH participants conducted after each session; and (6) activity sheets

completed by YLWH participants (see Table 2). All IDIs and FGDs were digitally recorded, transcribed verbatim, and simultaneously translated from Lingala to French when necessary by trained local transcribers/translators and linked within Atlas-ti version 5.2. There were two FGD leaders, one was the Kinshasa-based study coordinator, a physician, and the other was a licensed nutritionist working at the clinic. The Kinshasa-based study coordinator conducted the facilitator IDIs and FGD as well.

FEASIBILITY FRAMEWORK AND DATA SOURCES

Table 3, adapted from the Bowen Feasibility Framework, describes the four key areas of focus for this feasibility analysis, the questions that were asked, the outcomes of interest, and the data sources used to answer the questions and assess the outcomes of interest (Bowen et al., 2009).

DATA ANALYSIS

The first author conducted qualitative content analysis and followed five interrelated steps: reading, coding, displaying, reducing, and interpreting (Miles & Huberman, 1994; Ulin, Robinson, & Tolley, 2005). A codebook was developed based on the IDI and FGD guides as well as topical and emergent codes identified from the review of transcripts. Codes were applied to the data and code reports produced. Code summaries were developed from the code reports and these summaries were coded based on the four areas of focus within the feasibility framework in order to examine the evidence supporting these sub-themes. Data were synthesized as key themes formed and essential concepts and relationships between the different themes were triangulated based on the data sources.

RESULTS

ACCEPTABILITY

Program Participants

Satisfaction: YLWH overwhelmingly reported being satisfied with the SYMPA intervention, and felt the intervention addressed their needs. YLWH described enjoying their participation in the SYMPA intervention because of three key aspects: (1) open discussion of sexual health and behavior; (2) development of knowledge and skills; and (3) mechanisms to increase social support. Youth described feeling free to talk about issues of sexuality, a topic that traditionally is considered taboo within this cultural context, in front of their peers and facilitators.

> Before, I considered myself as a child and so I thought that questions related to sex didn't concern us. But, I was surprised to see them speaking with us, like friends. This really touched me because these are subjects that no one in our families dares to bring up. (Male participant, 18 years old)

Perceived Appropriateness: YLWH felt the intervention filled an important gap in their education. Specifically, youth mentioned that they enjoyed learning about risk behaviors, including determining where specific behaviors fall on a risk gradient, and how to identify triggers to high risk sexual behavior. Youth liked learning how to develop their problem-solving capacity, improving communication with family members and sexual partners, learning negotiation strategies with sexual partners, learning condom use skills, and improving their ability to set positive goals for the future. Youth also described enjoying activities to identify different types of social support and learning how to expand their social support network.

> Lots of important things like informational support, because we, youth, we really love to learn because one day we will be adults and faced with lots of problems. If I'm not prepared, I won't know how to respond. (Male participant, 18 years old)

However, youth identified two ways in which the intervention could be made more applicable to their specific context: (1) including content to address their concerns related to disclosure of their HIV status and (2) incorporating more in-depth information related to marriage in the context of living with HIV. Both young men and women mentioned their apprehension about disclosing their status to friends and family because of fear that those persons would tell others or that they would be stigmatized. This was especially relevant when youth were asked to bring in someone from their social network to serve in a social support role for the last session. Those who did not have someone already aware of their status to bring to the session expressed concerns about disclosing their status. Youth pointed out that this was contradictory to how they had been previously counseled on the topic.

> The activity that I didn't like was the one about disclosing our HIV status. I don't feel like that activity had its place. You have always told us that our HIV status is a secret between me and my doctor. You are contradicting yourselves now and telling us to disclose this information. I don't agree and I don't see the utility of it. (Female participant, 17 years old)

It is important to note that youth were not pressured to disclose to others if they felt uncomfortable; indeed, a few chose to bring a staff person from the clinic to serve in this specific social support role. Interestingly, although youth initially reported being uncomfortable with this topic, many expressed their contentment in having disclosed their status to family members due to their participation in the intervention and reported feeling more confident in their ability to negotiate the complexities of the disclosure process. Many youth designated disclosing to a family member as their specific goal for the session on their post-session activity sheets. While youth raised some concerns related to disclosure to friends and family members, most youth reported great interest in learning strategies for how to disclose their status to their sexual partners.

> It's good to know the HIV status of our partners because I can believe that a man I am living with is healthy but actually it might be him that is worse. It's important for us to know their status but it's not easy. Since we know our status it is for us to look for strategies to inform them, like that they can feel called upon to respond and can perhaps open up to us and be honest with us. (Female participant, 20 years old)

During the FGDs held after the first two sessions most female youth mentioned wanting specific information about marriage, becoming engaged, couple testing, and specific strategies for informing sexual partners of their status. Female YLWH wanted more details from facilitators on whether and how young women living with HIV can engage in relationships and get married.

> I would have liked for them to explain…[if] we are sick should we get married or not? How should we behave with our sexual partners? Because we also have needs, we have desires. Me I have a sexual partner but he doesn't know my status that's why I really would have liked to talk about this subject so that it can help me and give the courage to disclose my status. (Female participant, 17 years old)

While much of the information about marriage was discussed during sessions four and five, youth wanted this information introduced earlier or reassurance that this information would be covered.

Intent to Continue Use of Intervention: Youth reported enjoying the intervention and many stated their interest in participating in the intervention a second time if that was permitted. Some youth also described wanting others in the community to be able to benefit from this program as well.

> We have learned a lot. We have gained access to information that we don't get in our families or from our friends. The time that we have passed here has permitted us to access information that is fundamental for our future lives. Unfortunately there were only six sessions, if they were to do it again so that we could learn more, then we would agree. (Male participant, 15 years old)

Thus, youth were highly interested in continuing to participate in the intervention if it were available.

Program Facilitators

Satisfaction of Program Facilitators and Program Participants: Overall, SYMPA facilitators were eager to implement the program, further develop their competence in facilitation, and expand their skill set in relation to Positive Prevention. Program facilitators also reported being satisfied with the intervention content and felt it addressed specific gaps in the services they were providing to youth.

> All the more reason, as we are in charge of the support groups for the children and the adolescents. So there were certain concerns that arose during these meetings and that we were able to find solutions to during this study. Our youth don't know that they should have a goal in life—that helps the youth to aim for these goals and to know how to make decisions when faced with a problem. (Facilitator)

Perceived Appropriateness: The facilitators reported feeling encouraged that this intervention provided youth with the necessary skills needed to face the numerous challenges related to living with HIV.

> So what I liked the most was first we gave the youth a chance to express themselves, not only to express themselves but to reflect and to reflect in a positive way. Because these youth are often faced with problems they face them indiscriminately, without a plan. But with this study I was really happy to notice that the youth have acquired a certain autonomy, a certain way of facing their problems. (Facilitator)

Many of the facilitators stressed the extent to which their own understanding of YLWH needs were expanded through their participation in the intervention.

> Sexuality, condoms, it's taboo. They are still children, we can't talk about sex, but during this session, we understood that this was a need that the children had that we, the health care providers, ignore. We couldn't have believed that this could interest them. And curiously, we understood that the youth have begun to be sexually active but they don't know how to use a condom. It's really a new notion for us and it is really interesting. (Facilitator)

While youth described their frustration with not having extensive information early on about relationships and marriage, program facilitators described the importance of building trust over the first three sessions so that when the more sensitive topics were introduced in the fourth session youth would be comfortable sharing their experiences.

Intent to Continue Use of Intervention: Facilitators expressed an interest in continuing to deliver this intervention so that youth are able to benefit from the intervention and so that they can remain implicated in the care of these youth.

IMPLEMENTATION

Degree of Execution: The SYMPA intervention was fully implemented as planned and all the topics included within the six sessions successfully delivered to the YLWH participants with a very high retention of participants. Of the 13 participants, all but 2 completed all six sessions, with the 2 participants (one boy and one girl) missing one session each.

Factors Affecting Implementation Ease, Efficiency, and Quality: Two primary challenges to implementation were raised by both the participants and facilitators: (1) length/timing of sessions and (2) education/literacy level of youth. Although sessions were intended to be 90 minutes, the average length of the sessions was approximately 3.5 hours with additional time spent in the FGDs after each session. Thus, the sessions were deemed too long by facilitators and youth. Youth indicated this issue was particularly challenging because longer sessions delayed their return home and made it difficult for them to access public transportation. Program facilitators were obligated to put in longer hours and to help youth find a means to return home safely. In addition, both youth and facilitators reported that a 3.5-hour session was too long to maintain the interest of the youth.

> It's that the material took longer than the time designated. The amount of time we had didn't permit us to explain things in depth. If there was more time we could have gone into more detail, done more exercises, this would lead to a better comprehension. (Facilitator)

Although the program was implemented over six successive Saturdays afternoons to avoid interfering with youth schooling, many youth participants had difficulty arriving on time to sessions because they were required to attend school on Saturday mornings. Program facilitators felt this caused the youth to be distracted and that this was not an ideal time to hold the intervention.

> If the facilitator finds himself in front of a child who has just come from school, tired and hungry, their task becomes difficult. (Facilitator)

Both the facilitators and the youth reported that the youth participants struggled with some of the terminology in the curriculum and had trouble understanding the more complex topics, such as categorizing the different types of triggers for high risk sexual behavior and certain scientific terms related to human sexuality. While the original intervention was targeted to an adult population, the study team adapted the intervention for this age group by simplifying certain activities and incorporating role plays better targeted for a youth audience. However, the study team was not prepared for the degree to which the youth were delayed in their ability to read and write, potentially as a result of cognitive development deficiencies due to HIV. Those youth who were unable to write at even a very basic level were assisted by the facilitators and this delayed the progress of the group. This was the primary reason for the unplanned long length of the sessions.

> The main difficulty we had during this study, it was the education level of the youth. We understand that they are youth that have been sick for a long time; that they have been held back in school. The level of the youth is really very low. But to write, it's difficult for them. We had a really hard time reading what some of the youth had written. (Facilitator)

While facilitators indicated this as a challenge, youth did not raise this as an issue. This supports the reports from facilitators that the facilitators patiently took extra time explaining complex topics and worked individually with youth struggling to keep up. Thus, while there were certainly challenges to the implementation of this intervention, the facilitators and youth were able to work to overcome these challenges and deliver and participate in a high quality Positive Prevention intervention.

Resources Needed for Implementation: The facilitators worked outside of their regular working hours, putting in extensive unpaid overtime in order to facilitate the intervention on Saturdays.

> With the amount of work that we have, Saturday, outside of our visits to the sick in the clinic, we can find ourselves at the clinic from the morning until six at night… it's not easy for us. (Facilitator)

While facilitators repeatedly raised the issue of the extra burden of their participation in the intervention, they were clearly devoted to the program and went above and beyond what was required of them. In one case, at the request of an YLWH participant, a facilitator conducted a make-up session because the child had been unable to attend due to illness.

ADAPTATION

Overall, the adapted intervention was well-received by the new target population of YLWH in the DRC. There are two aspects of the adapted intervention that warrant a more detailed discussion: (1) the adaptation from an individual format to a single-sex group format; and (2) the addition of the VIP social support component. In low-resource settings such as Kinshasa, having multiple, individual sessions was not thought to be feasible; therefore, the intervention was adapted to be delivered in a group format. In this setting YLWH already had the experience of meeting monthly in educational sessions with their peers, and the youth expressed in formative research that they wanted to be in such groups. Likewise, as study staff reported that in Congolese society sexuality is not traditionally discussed in mixed gender groups, it was decided that the groups would be separated by sex so that participants would be comfortable discussing sensitive issues. While we were confident that peer support groups were successful with this target population, we were not sure how this specific intervention would fare in this format. The group format was an aspect of the intervention that both the YLWH participants and facilitators indicated as a major factor in its success. Youth and facilitators reported that rather than individuals developing goals and problem solving on their own, feedback from both facilitators and other members of the group was incorporated and thus the development of each group member's goals and solutions to their problems became a collaborative effort.

> What I preferred, it was the fact that we shared our life projects with each other because this can always enrich our initial ideas and the project becomes even better. (Female participant, 20 years old)

This attests to the fact that not only was the group format acceptable, but also that there was value added by having the youth work together to identify risks, problem solve, and set goals.

The VIP component was added to the intervention to help provide support to YLWH over the long term in achieving their goals and objectives developed during the intervention. Each YLWH was asked to identify an individual who was a trusted person to whom s/he was willing to disclose or had already disclosed his/her HIV status and to whom the YLWH could go to for support. The VIP was also identified as someone who could aid them in maintaining lower risk sexual behavior practices and staying healthy after the program ends. Initially, both the youth and facilitators were hesitant about the idea of bringing in a VIP to participate in the sixth session of the intervention. During the adaptation workshop the program staff raised important concerns about the VIP component including confidentiality, recruitment, and the issue of who gets to choose the VIP. Through interactive discussions, the study team decided to include the VIPs in the final session, ensuring confidentiality by incorporating discussions throughout the intervention on strategies to help YLWH maintain

confidentiality. The YLWH had the final say on choice of VIP, with facilitators free to provide advice.

> We, we believed at the beginning that the VIP would be a barrier. We asked ourselves if the youth would be capable of speaking in front of their VIP. But, curiously, the children weren't bothered; they spoke easily and expressed their problems in front of their VIP. That was an innovation for me. (Facilitator)

Facilitators reported that three YLWH participants disclosed their status to a close family member in preparation for session six with the VIPs. To their surprise, most facilitators felt that the VIP component was the most important aspect of the entire intervention. Participants chose their mothers, sisters, health care providers, uncles, and grandmothers as their VIPs. Facilitators reported that youth spoke openly in front of their VIPs and were not embarrassed to discuss these sensitive topics. They described the VIPs actively participating and noted that the youth appeared to enjoy reviewing what they had learned during the previous five sessions.

> I liked the presence of the VIP who contrary to what we thought, they weren't simply present but they expressed their desire to support the youth. (Facilitator)

The facilitators reported that the VIPs were very impressed with what the youth had accomplished and that they had noticed positive improvements in the behavior of youth since they had started the intervention. Facilitators stated that the VIPs expressed that they previously had difficulty talking about their child's sexual behaviors and so appreciated that the intervention was addressing these issues. During the final session, a facilitator described an instance where one VIP described carrying condoms with him at all times to model this behavior to the youth. Facilitators mentioned that they hoped that the VIPs would stay involved in the lives of their children. One facilitator described a meeting with a VIP, held after the intervention had ended, that encouraged the facilitator that this was indeed possible.

> At the end [of session six], we asked for the help of the VIPs who were there. She really gave advice and after I met with the child's VIP and she told me that since that time the situation has been evolving really nicely. So I understood that the support of the VIPs was really important because we have seen the fruits of their efforts. (Facilitator)

Similarly, youth were very hesitant at first about the idea of incorporating VIPs in the final session. However, many YLWHs also repeatedly mentioned how much they enjoyed this part of the intervention and many remarked that this was their favorite part of the intervention. The youth participants felt that the VIPs gained a better understanding of the importance of what they learned during the sessions and that the VIPs could now support them in learning additional topics and in their prevention efforts.

> Me, I'm happy because today the VIP learned our different secrets. Personally, I was going to explain to my uncle what we were learning here but he wouldn't have really understood the importance of these lessons. Today since he participated he understood and will surely continue to help me with things that I don't know. (Male participant, 18 years old)

Youth mentioned that VIPs contributed by proposing multiple solutions for the problems youth were having in realizing their life projects. In conjunction with their VIPs, youth were able to identify resources to support their plan to reduce risk behaviors and improve coping and problem solving skills.

> The activity that I liked best was when they explained that the VIPs should help us learn and help us at home. Before, we could go out without saying anything at home, but now, there is a dialogue that has been established, such that before going

> out, even if they won't directly give us condoms, at least, they will be satisfied with giving us counsel on how to protect ourselves and prevention. (Male participant, 18 years old)

Therefore, these modifications made to accommodate the context and specific requirements of this target population performed successfully and, in fact, strengthened the intervention as a whole.

LIMITED EFFICACY

The intervention showed promise of success with the target population. YLWH reported improving their problem-solving skills, increasing their knowledge of sexual prevention topics, improving their condom use skills, improving their ability to deal with triggers for unsafe sex, and increasing their capacity to assess the level of risk of different behaviors. YLWH also reported increasing their autonomy in decision-making, improving their ability to negotiate safer sexual relationships, increasing their openness to discuss sexual behavior with their caregivers, and improving their ability to develop positive goals for their future. Youth described having changed their outlook on life and learning a wide-range of skills, and consequently felt better prepared to deal with potential future problems.

> I've gained intelligence, no, no, it's more than intelligence, rather it's wisdom. (Male participant, 15 years old)

This was particularly important as the youth mentioned that this was education they were not getting elsewhere and described specific skills they had developed during the intervention that they were now applying in their lives. One participant described learning new information about STIs, including which STIs are symptomatic and which are not, and how this information led to him using protection.

> We learned about the infections that speak and the infections that don't speak. For the infections that speak, it's difficult to know that you are sick that's why, me, I won't accept to have sex without condoms. (Male participant, 18 years old)

YLWH participants also mentioned being able to identify a lack of condom use as a risk behavior and the importance of thinking ahead and preparing to use condoms. One female participant described how she has developed strategies that could help her reduce conflict in her relationship.

> I could resist at first and refuse, but if he insists, I would be obligated to accept…he could harass me and threaten me if I refuse…. I am happy because I've learned the strategies that would permit me to calmly refuse these things that I judge as a risk. (Female participant, 18 years old)

Another female youth described a lively discussion during an intervention session about the gradient of sexual risk behaviors.

> Today's session helped us with a lot of things, for example, we now know how to identify the risk level of behaviors. A friend stated that sucking a man's penis is a low risk activity, but me I consider that very risky in case the penis has cuts or ulcerations. Another said that if a man ejaculates in her mouth she would become pregnant. We responded that this wasn't possible. (Female participant, 20 years old)

Others stated that negative peer influences encouraged risky behaviors, and reported developing methods to avoid these influences. Some youth mentioned focusing on school and studying as a means to avoid high risk behaviors. Youth also thought that the risk gradient exercise (determining the level of risk of different sexual acts) helped to clarify misconceptions about certain sexual acts and to understand which acts are high risk and

which are not. They reported being able to incorporate these lessons into their everyday behaviors. Male youth mentioned being better able to avoid dangerous situations after participating in SYMPA. Some mentioned visiting their girlfriends less or not spending as much time alone with their girlfriends, instead hanging out in groups in order to avoid triggers that had been identified during the intervention.

> This really helped me because before I was really angry…. And my only distraction to help me calm down after an episode of anger was to go find my girlfriend…. And this would often end up with us having sex…but, now, I've developed other mechanisms to distract myself, I can go watch a soccer match or play or even go walking. (Male participant, 18 years old)

One female youth reported that due to her participation in the intervention she does not do everything her boyfriend asks, and another female youth mentioned now wanting to know her boyfriend's status. Others described their increased ability to negotiate with sexual partners.

> This session helped us because they showed us how to negotiate, because you could have someone who lives with their boyfriend but not know how to ask him to wear a condom when having sex. This gave us strategies to develop good communication. Me, for example, I have already discussed with my boyfriend and I succeeded in convincing him that for now we will have sex using condoms. (Female participant, 20 years old)

Thus, participants reported a wide range of changes in their behaviors following participation in the intervention sessions.

Importantly, facilitators stated that they had noticed changes in the youth over the course of the intervention.

> One youth said that now he understands that in life you must have multiple solutions to a problem and choose the best solution. And when you need something you may think that the solution can only come from one person but that there are multiple ways of finding a solution. So, each participant learned a lesson in this study. Globally, we remarked that this study led to behavioral changes for these youth. (Facilitator)

Facilitators noted that VIPs remarked that the youth had also changed their behavior at home.

> The VIPs were surprised to learn that youth knew of their serostatus and stated that they [the youth] have become wiser, they take their medication without asking, they are clean, they have become more studious, and they don't go out whenever they want. (Facilitator)

Facilitators mentioned that in addition to specific improvements in the youth's behaviors, the youth and their VIPs had developed an open dialogue on sexual behavior and prevention.

> The inclusion of the VIPs was a good thing because many parents abandon the monitoring of their youth to the health care providers. They don't follow their child's evolution and they only help with reminding their child to take their medications. Their participation in the program opened the horizons of the caregivers. (Facilitator)

There is ample evidence that SYMPA shows great promise for success with this target population.

DISCUSSION

The goal of this study was to determine the feasibility of an adapted six-session Positive Prevention intervention for YLWH in Kinshasa, DRC. Using the Bowen Feasibility Framework, findings from this study show that the adapted intervention was suitable, satisfying, and attractive to both program facilitators and participants, able to be implemented effectively, performed well with a new population, and showed preliminary efficacy. Although the intervention was determined to be highly feasible in this environment, there are certain aspects of the intervention that must be addressed prior to moving forward with wider implementation and evaluation. First, in order to address the acceptability issues identified by youth, including more content on how to navigate marriage while living with HIV could further increase the suitability of the intervention, particularly among the young women. Also, the topic of disclosure could be further tailored to: (1) include a discussion on the differences between disclosing to friends and family members versus sexual partners; and (2) be explicit about not pushing youth to disclose, thus better addressing youth concerns. A potential solution to the implementation challenges related to conflict with youth schooling and long hours required of facilitators could be to hold the intervention during the school summer vacation. Hiring additional staff and providing financial incentives to current counselors are worth considering in order to further encourage their participation in the intervention. The length of each session should be reduced to a maximum of 90 minutes, with up to 10 total sessions. This could be achieved by spreading the existing content over a greater number of sessions while also cutting content from activities which both the YLWH and facilitators did not find helpful, such as an exercise about self-confidence and another on decision-making processes. As youth interest in the program was strong, the study team does not foresee the addition of sessions to be a barrier to youth participation. The curriculum could be further simplified without compromising content in order to reflect the education level of many participants, and specific activities requiring written responses could be adapted for those youth unable to write. Finally, having VIPs participate in more than one session would strengthen this successful component of the intervention.

LIMITATIONS

One limitation of this study is potential reporting bias of the facilitators as they might have reported positively on the intervention so that it appeared they did a good job implementing the intervention. However, as they were aware that they will most likely be involved in any future implementation of this intervention, providers may have felt a vested interest in making sure that challenges are identified and addressed. By using a purposive sample of YLWH, these youth may have been more interested in learning about Positive Prevention than other YLWH in Kinshasa, and program staff may have identified those most likely to succeed. Likewise study findings are relevant only for youth ages 15–20 as this was the range of YLWH that enrolled in this study. However, the goal of this study was not generalizability but rather the ability to assess the explicit aims of the feasibility analysis; therefore, a purposive sample was appropriate to meet these predefined areas of focus of acceptability, implementation, adaptation, and limited efficacy.

CONCLUSION

This study used an innovative framework to examine the feasibility of an adapted evidence-based Positive Prevention intervention implemented in a low-resource setting, and found the intervention to be feasible and appropriate for wider implementation and evaluation.

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TABLE 1

SYMPA Intervention Session Content Overview

Session Number	Session Title	Content
Session 1	Living with HIV	Identify personal strengths and challenges in relation to living with HIV.
Session 2	Coping and Problem Solving	Identify personal stressors; problem-solving skills; coping styles.
Session 3	Safer Sex I	Risk continuum; identify personal risk limits and problem solve triggers to risky behavior.
Session 4	Safer Sex II	Proper condom use; knowledge of Sexually Transmitted Infections (STIs); assertive communication.
Session 5	Social Support and Disclosure	Identify types of social support and how to increase positive support; identify personal and environmental factors related to disclosure decisions; identify VIP in support network.
Session 6	Wellbeing and Health Maintenance	Identify successes and problem-solve challenges to maintaining behavioral and attitudinal changes; and develop plan, in coordination with VIP, to maintain healthy behaviors after the intervention ends.

TABLE 2

Data Collection Instruments

Type	*N*	Contents
Demographic Questionnaires with YLWH	13	Questions on education, marital status, socio-economic status, and food and income security.
Facilitator IDIs	3	Questions on what they liked best and least in the intervention, challenges faced, logistical issues, incorporation of VIPs, and suggestions for scale-up.
Facilitator Session Reports	6	Questions on strengths and weaknesses of the intervention sessions and areas where the program could be improved.
Facilitator FGD	1	Questions on the intervention curriculum including an evaluation of specific sessions and activities.
Single-Sex Participant FGDs with YLWH	12	Questions on what the participants enjoyed most and least, what the participants learned, subjects they would have liked covered, whether the session increased their confidence in identifying high risk behaviors, in what ways they changed their behavior as result of their participation.
Participant Activity Sheets with YLWH	13	Documentation of activities completed by participants in each session.

TABLE 3

Key Areas of Focus, Outcomes of Interest, and Data Sources for the SYMPA Intervention

Area of Focus	Description	The Study Asks …	Outcomes of Interest	Data Sources
Acceptability	How the intended individual recipients—both targeted individuals and those involved in implementing programs—react to the program.	To what extent is SYMPA suitable, satisfying, or attractive to program participants? To program facilitators?	Satisfaction Perceived appropriateness Intent to continue use	FGDs with youth after each session (n = 12) Evaluations post-session by facilitators (n = 6) FGD curriculum evaluation with facilitators (n = 1) IDIs post-intervention with facilitators (n = 3) Youth activity sheets (n = 13)
Implementation	The extent, likelihood, and manner in which an intervention can be fully implemented as planned and proposed, often in an uncontrolled design.	To what extent can SYMPA be successfully delivered to intended participants?	Degree of execution Amount, type of resources needed to implement Factors affecting implementation ease, efficiency, or quality	FGDs with youth after each session (n = 12) Evaluations post-session by facilitators (n = 6) FGD curriculum evaluation with facilitators (n = 1) IDIs post-intervention with facilitators (n = 3) Youth activity sheets (n = 13)
Adaptation	Changing program contents or procedures to be appropriate in a new situation including modifications made to accommodate the context and requirements of a different format or population.	To what extent does an existing intervention such as the Healthy Living Project perform when changes are made for a new format or with a different population?	Assessment acceptability and implementation factors specific to the intervention modifications	Adaptation workshop with health care providers Training of facilitators FGD curriculum evaluation with facilitators (n = 1) IDIs post-intervention with facilitators (n = 3)
Limited Efficacy	Test an intervention in a limited way with a convenience sample with intermediate rather than final outcomes.	Does SYMPA show promise of being successful with the intended population?	Evidence of trends in the predicted direction for better outcome compared to usual practice	FGDs with youth after each session (n = 12) Evaluations post-session by facilitators (n = 6) FGD curriculum evaluation with facilitators (n = 1) IDIs post-intervention with facilitators (n = 3) Youth activity sheets (n = 13)

Adapted from Bowen et al. (2009).