Original article

A Clinic-based Motivational Intervention Improves Condom Use Among Subgroups of Youth Living With HIV

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A B S T R A C T

Purpose: More than 50% of youth living with HIV (YLH) have unprotected sex. In previous studies, we reported effects of a motivational interviewing-based multirisk reduction intervention, "Healthy Choices" in improving motivation, depression, and viral load in YLH. In this study, we report the effect of the intervention on increasing condom use.
Methods: Six waves of longitudinal data (n = 142) across a period from baseline through 15 months postintervention were analyzed. The developmental trajectory modeling method was used for program effect evaluation.
Results: The three groups detected with distinct sexual risks were: Persistent low sexual risk (PLSR), delayed high sexual risk, and high and growing sexual risk with regard to levels and time trajectories of condom use throughout the trial. Receiving Healthy Choices increased the likelihood to be in the PLSR group (63% vs. 32%, $p < .01$) and reduced the likelihood to be in the delayed high sexual risk group (16% vs. 50%, $p < .05$). Receiving the intervention was also associated with progressive reductions in no-condom sex for PLSR youth (adjusted $\beta = -.325$, $p < .01$) and high and growing sexual risk youth (adjusted $\beta = -.364$, $p < .01$).
Conclusion: The motivational interviewing-based program Healthy Choices, when delivered in clinic settings, can prevent unprotected sex in subgroups of YLH, although more intensive interventions may be needed to change risk trajectories among those at highest risk of transmitting the AIDS virus. Developmental trajectory analysis provides an alternative approach to evaluate program effects for study samples that contain distinct subgroups.

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It is estimated that there are more than 10 million adolescents and young adults who are living with human immunodeficiency virus (HIV) worldwide [1]. Among all the new infections in the United States, approximately half are in adolescents and young adults [2]. Findings from diverse sources indicate that more than 50% of youth continue to engage in unprotected sex after being notified of their HIV infection [3–7]. Condom use remains the best method to prevent the spread of HIV through sexual contact given the challenges confronted in the efforts of vaccine development [8–10]. HIV prevention interventions delivered through various venues, including the Internet, schools, and communities, have been effective in increasing the intention to use condoms and condom use, among youth who are at risk for HIV infection and in enhancing knowledge, perceptions, and self-efficacy regarding safer sex [11–19].

Youth living with HIV (YLH) are a strategic population for HIV prevention [20], and HIV/AIDS clinics represent a natural and ideal venue for behavioral interventions targeting youth to curb the spread of HIV. Available data from several sources indicate the potential to deliver HIV prevention interventions for sexual risk reduction to YLH at clinic settings, including training of

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health professionals for program delivery and effective retention of the study participants [21–24]. Studies using the pre- and post-test design have shown significant protective effects of theory-based intervention programs delivered in clinic settings [25]. Randomized controlled trials have shown a significant effect of clinic-based educational programs in reducing HIV risk and in improving the highly active antiretroviral therapy (HAART) treatment effect among adults who live with HIV [26,27]. However, there is a lack of data from randomized controlled trials for clinic-based prevention programs targeting YLH [28]. The only published randomized trial tested an 18-session intervention [29] that may be difficult to replicate in a clinic setting.

A methodological challenge to program evaluation is the assumption of a homogenous population with normally distributed outcome variables. Research data indicate that this assumption may not always be valid for various health risk behaviors, including sexual risk [11,30]. For example, frequency of condom use among adolescents is typically not distributed normally, with a majority reporting nonuse of condoms [31]. In addition, responses to an intervention may also differ for participants with different baseline levels and development trajectories of the outcome variables [11].

In previous studies, we reported the initial effects of a behavioral intervention program "Healthy Choices" in improving motivation, depression, and viral load reduction among YLH through a randomized controlled trial conducted through the Adolescent Medicine Trials Network for HIV/AIDS Interventions [32,33]. In this study, we further assessed the effect of the same program on potential reductions in sexual risk behavior (reduction in number of unprotected intercourse acts).

Methods

Participants and procedures

Participants of the original trial were recruited from five adolescent HIV clinics located in Baltimore, MD; Detroit, MI; Fort Lauderdale, FL; Los Angeles, CA; and Philadelphia, PA. All five study sites provided HIV primary care with an adolescent medicine specialist and provided the following onsite services: adherence, mental health, and risk reduction counseling; case management; HIV support groups; home visits; peer advocacy and outreach; and transportation.

Healthy Choices is a behavioral prevention intervention based on motivational interviewing (MI) technology [34,35]. It consists of four sessions that are delivered to individual clients in the clinic settings by mental health clinicians with a master's level of education. In session 1, a participant chooses one risk behavior to discuss first, and the interventionist elicits the views of a client using standard MI techniques. For effective risk reduction, the intervention focuses on structured personalized feedback on risk behaviors according to the baseline assessment, building motivation to initiate and maintain changes, decisional balance exercises to assess pros and cons of behavior changes, and actual plan for change. In session 2 (week 2), the intervention shifts to the second risk behavior using the same format. In the two subsequent sessions (weeks 6 and 10), the interventionist reviews the personalized behavior change plan; continues to monitor and encourage progresses, problem-solved barriers; and elicits strategies to maintain health behaviors and to prevent relapse.

Healthy Choices was adapted for YLH from a previous intervention, Positive Choices, tested with HIV-positive adult men who have sex with men [36]. Youth in the intervention group could work on two of three possible health risk behaviors based on their entry screening: substance use, sexual risk, or medication adherence. If they only had a substance use or adherence problem, they could still receive intervention for sexual risk as a prevention measure if they were sexually active, regardless of engagement in any unprotected sexual act. Participants who were randomized to the intervention group received Healthy Choices plus standard multidisciplinary care and those randomized into the control group received only the standard care.

Data for this analysis contained a subset of the participants who met criteria to target sexual risk (n = 142), with 71 being randomized into the intervention group and 71 into the control group. The detailed procedures for subject recruitment, behavioral intervention, and postintervention assessment have been described elsewhere [32,33]. In brief, eligible participants were youth who were HIV-positive, 16–24 years of age, engaged in at least two of the three HIV risk behaviors (substance use, sexual risk behavior, and adherence to antiretroviral treatment), and were able to complete questionnaires in English. Informed consent was obtained, and a waiver of parental permission was obtained for youth aged 16 and 17. Participants received $30 for the baseline visit, with $5 increments for each subsequent follow-up visit at 3, 6, 9, 12, and 15 months.

Baseline assessment was conducted before intervention and within 30 days of the screening test. Assessment for program effect evaluation started immediately after the completion of the intervention and then followed at 3-month intervals to a maximum of 15 months postintervention. Six waves of survey data were collected using computer-assisted personal interviewing (CAPI) technology. All the surveys were conducted by trained researchers in clinical settings where privacy of the study participants could be ensured. Data collected through the CAPI were automatically saved on computer for use. No personal identifying information was recorded during the data collection and the interview sessions and a computer-generated unique identifier was used to follow-up the individual participants and to index the data for longitudinal analysis.

Variables and their measurement

Sexual risk behavior. In this analysis, sexual risk for HIV infection was assessed using the prevalence rate of no condom use during sexual intercourse and the number of times of intercourse without a condom. The assessment was based on a detailed CAPI interview of sexual behavior in the previous 3 months, and the maximum times of no condom use in the past week was analyzed. In addition to the summarized number of no condom use as the main outcome measure, a dichotomized indicator variable was created to classify the participants as either at-risk (reported having unprotected intercourse at least once in the past 3 months) or not at-risk (reported no unprotected intercourse acts in the past 3 months).

Other variables. Demographic variables were age (in years), race (two categories of African American vs. others), biological sex, and sexual orientation (dichotomous of heterosexual and others). In addition to summarizing sample characteristics, these variables were used as predictor variables in the multiple developmental trajectory analysis for program effect evaluation.