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Efficacy of a Culturally Adapted Intervention for Youth Living with HIV in Uganda

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Abstract

This study examined whether a culturally adapted version of a previously evaluated efficacious HIV prevention program reduced sexual risk behaviors of youth living with HIV (YLH) in Uganda. YLH, 14 to 21 years, were randomized to intervention ($N=50$) or control ($N=50$) conditions. Significantly more YLH in the intervention used condoms consistently and decreased their number of sexual partners in comparison to the control condition. Western interventions can be culturally adapted to retain efficacy in reducing the sexual risk behavior of YLH.

Keywords

HIV; Intervention; Uganda; Intervention adaptation; Condoms

Introduction

Worldwide, about 50% of new HIV infections are among young people (UNAIDS 2002) and about half of young people living with HIV (YLH) continue to engage in risk acts (Murphy et al. 2001; Sturdevant et al. 2001), making effective prevention programs for YLH a critical global priority. This global context is mirrored in Uganda, where 1.9 million people are living with HIV/AIDS (UNAIDS 2006) and AIDS is the leading cause of death among 15 to 49 year olds (Uganda AIDS Commission 2000).

Efficacious HIV risk reduction programs have been successfully mounted for YLH in the United States (Rotheram-Borus et al. 2001, 2004). Although these interventions have proven useful in the developed world, it is not clear whether they can be effective in other countries. Therefore, we culturally adapted a U.S.-based intervention (Rotheram-Borus et al. 2004) to

the Ugandan context and conducted a randomized controlled trial to examine the program's efficacy in reducing the sexual risk behaviors of YLH in Kampala, Uganda.

Methods

From 2003 to 2004, a convenience sample of 100 YLH aged 14 to 21 years was randomly assigned to: (1) a culturally adapted 18-session behavioral intervention based on cognitive behavior therapy or (2) a treatment as usual control condition. The intervention was adapted in partnership with staff from a Kampala-based youth serving nongovernmental organization (NGO), Uganda Youth Development Link (UYDEL). A series of focus groups, individual interviews, and observations with youth and staff from UYDEL and other NGOs serving the population guided the adaptation process. The domains queried included: the context in which sexual behavior occurs, HIV and reproductive health information, attitudes and beliefs about condoms and HIV, barriers to services, strategies for identifying youth, and provisions for intervention delivery. Given the stigma that surrounds HIV, the intervention was delivered individually by nurses in the homes of YLH and on occasion at the NGO clinic location. The intervention focused six sessions on each of the following domains: physical health and nutrition, mental health, and reducing HIV transmission. Youth were assessed at baseline and 3 months later, and most YLH (90%) completed every session of the intervention. The study protocols were approved by the UCLA Institutional Review Board, the Uganda AIDS Research Committee, and the Uganda National Council for Science and Technology.

YLH reported their sociodemographic characteristics, including age and gender. YLH reported whether they had sexual intercourse (0=no/1=yes), the number of sexual partners, number of vaginal and anal sex acts, whether they always used condoms (0=no/1=yes), and whether they were highly protected (abstinent or always used condoms; 0=no/1=yes) for the previous 3 months (National Institute of Mental Health 1998).

Comparisons of the count of the number of sex acts and sexual partners were analyzed in two stages to account for zero inflation (Duan et al. 1983). Changes in sexual abstinence, as well as other binary outcomes, between the baseline and follow-up interviews were examined using an exact version of McNemar's test as implemented in SAS 9.1 for small sample sizes (SAS Institute Inc., Cary, NC). The log-positive counts were analyzed as continuous outcomes in random-intercept linear regression models using the PROC MIXED procedure (Bryk and Raudenbush 1992; Reise and Duan 2002; Singer and Willett 2003; Weiss 2005). Covariates in the model included assessment point (baseline, follow-up), intervention condition (control, intervention), time-by-intervention interaction, and a random effect to account for the correlation between repeated assessments. One outlier value in number of sexual partners at baseline in the control condition was removed.

Results

The mean age of YLH was 18.7 years ($SD=3.6$) and most were female (72%). Most youth (96%) had some formal education, but only 34% had attended secondary school. Most youth (65%) had sexual intercourse in their lifetime.

Over a third of YLH in the intervention (34%) and control condition (46%) were recently sexually active and this remained similar across conditions at follow-up (35% and 44%, respectively) (Table 1). YLH in the intervention condition, in comparison to the control condition, demonstrated a significant decrease in the log number of sexual partners ($F_{1,19}=4.68$, $p=.04$). Significant differences over time were not seen between the intervention and control condition for the total number of sex acts.

Inconsistent condom use was common at baseline and similar in the intervention and control conditions, but significantly rose to 93% at follow-up in the intervention condition (McNemar test, $p < 0.01$). The control condition did not significantly change. Over half of YLH reported being highly protected (i.e., abstinence or consistent condom use) in both the intervention and control conditions (74% and 65%, respectively), and this significantly rose to 98% in the intervention condition (McNemar test, $p < 0.01$). The control condition did not change over time.

Discussion

By 2010, there will be nearly 20 million YLH (Summers et al. 2002). The need for efficacious prevention programs for positive youth is critical, and the current study demonstrates that the goals, common components, models of learning, and best practices of Western preventive interventions can be culturally adapted to retain efficacy in reducing the sexual risk behavior of YLH in Uganda. Intensive interventions, such as the 18-session individual intervention tested, can be successful in the developing world. It is also important to note that 72% of YLH in this sample were female, reflecting the common epidemiological profile of HIV in the developing world. Furthermore, although antiretroviral (ARV) medications have proven to be a successful treatment and potential prevention strategy (Hogan and Salomon 2005), they are not accessible to most of the 4.7 million people in sub-Saharan Africa (UNAIDS 2006). Therefore, behavioral programs are vital and efforts to develop and adapt behavioral interventions for YLH must be developed and supported.

This study was limited by a small sample size. Further research with larger samples is needed to fully elucidate the efficacy of the intervention. In addition, the intervention was delivered individually by nurses during home visits. While this method of intervention delivery has proven successful in this study and other contexts (e.g., Olds 2006; Olds et al. 1998), future research would need to examine its feasibility in resource poor settings. However, this study suggests that behavioral interventions can successfully reduce the HIV-transmission behavior of youth in the developing world.

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Table 1

Sexual behavior: change over time

Parameters	Intervention condition (N=50)		Control condition (N=50)	
	Baseline	Follow-up	Baseline	Follow-up
Sexually active	34%	35%	46%	44%
Mean number of partners**	3.1 (12.1)	0.7 (1.1)	2.5 (8.0)	2.5 (8.0)
Mean number of sex acts	5.7 (12.9)	4.2 (9.1)	13.5 (36.9)	15.1 (30.7)
Always using condom*	10%	93%	15%	12%
Highly protected*	74%	98%	65%	62%

* $p < 0.05$ ** $p < 0.01$