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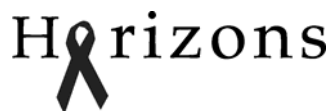
Is it Feasible to Integrate Alcohol-related Risk Reduction Counseling into VCT Services? Findings from Kenya



Horizons Program
Liverpool VCT, Care and Treatment
SAPTA
The Steadman Group

Is it Feasible to Integrate Alcohol-related Risk Reduction Counseling into VCT Services? Findings from Kenya

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Abbreviations

AA	Alcoholics Anonymous
AIDS	Acquired immune deficiency syndrome
ART	Antiretroviral therapy
AUDIT	Alcohol Use Disorders Identification Test
CAGE	<u>C</u> utting down, <u>A</u> nnoyance by criticism, <u>G</u> uilty feelings, and <u>E</u> ye-opener. Acronym of four questions in a screening tool for alcohol use.
CBS	Central Bureau of Statistics
CI	Confidence interval
FHOK	Family Health Options Kenya
FGDs	Focus group discussions
HIV	Human immunodeficiency virus
KNH	Kenyatta National Hospital
LVCT	Liverpool VCT, Care and Treatment
NASCOP	National AIDS and STDs Control Program
NUD*IST	Non-Numeric Unstructured Data * Indexing, Searching and Theorizing
OR	Odds ratio
PCEA	Presbyterian Church of East Africa
SAPTA	Support for Addiction Prevention and Treatment in Africa Trust
SPSS	Statistical Package for the Social Sciences
STIs	Sexually transmitted infections
VCT	Voluntary counseling and testing
WHO	World Health Organization

Executive Summary

In Kenya, alcohol consumption is an accepted form of recreation, with an estimated 30 percent of Kenyan men reported to be alcohol users. Numerous studies have demonstrated that alcohol use may be fueling the HIV pandemic, due to its association with high risk sexual behavior and reduced inhibitions (Weiser et al. 2006; Zablotska et al. 2006; Morojele et al. 2005; Shaffer et al. 2004). Alcohol users are more likely to perpetrate intimate partner violence, and the relationship between intimate partner violence and HIV has also been demonstrated (Karamagi et al. 2006; King et al. 2004; Abrahams et al. 2004). Data from the 2003 Kenya Demographic and Health Survey (KDHS) showed that female alcohol users have twice the HIV prevalence of non-alcohol users (CBS 2004).

Despite this wealth of knowledge, few HIV programs have systematically addressed alcohol use in their interventions. Yet, single alcohol counseling interventions have been shown to reduce sexual risk behaviors among STI clients in Cape Town, South Africa (Kalichman et al. 2007). Voluntary counseling and testing (VCT) programs have the potential to significantly mitigate the HIV risks faced by alcohol users, by offering supportive atmospheres to discuss these risks and helping clients formulate risk reduction plans. It is in this regard that the Horizons program, in conjunction with Liverpool VCT, Care and Treatment (LVCT), Support for Addiction Prevention and Treatment in Africa Trust (SAPTA), and the Steadman Group, conducted an intervention study to determine the feasibility of integrating alcohol risk reduction counseling into VCT service provision. The goals of the study were to improve: provider's inquiry about client's and partner's alcohol use, screening of clients for alcohol use, provision of feedback of screening results, and referrals to care and support. Others desired outcomes were exposure to alcohol education materials, and client and provider's receptiveness toward the program.

Study Design and Methods

The study employed a quasi-experimental research design with intervention and comparison sites. Baseline and follow-up data were collected from 15 static and 10 mobile VCT sites from three provinces in Kenya. Eight of the static sites were randomly allocated to the intervention arm while the rest of the sites (including the mobile), were allocated to the comparison arm of the study. Baseline data collection consisted of exit interviews conducted in June 2006 from 1,073 VCT clients using interviewer-administered survey questionnaires. Respondents were 18 years and older, gave informed consent, and had gone through the VCT session, but did not need to have taken the HIV test. The intervention activities were implemented immediately after the baseline survey. They included the development of an alcohol training module to train VCT counselors on a revised counseling protocol that integrated alcohol risk reduction counseling into the regular VCT service provision. A nested study of 32 VCT sessions was also conducted to assess the time that the alcohol component added to the VCT sessions.

One year after implementation of activities at the intervention sites, follow-up data were collected from 1,058 VCT clients from the same sites, using the same data collection methods as the baseline survey. The follow-up questionnaire had a section that explored exposure to the intervention.

Qualitative data were also collected from providers and patients at alcohol treatment centers, bar patrons, antiretroviral therapy (ART) adherence counselors, patients on ART, VCT clients, and counselors.

Quantitative data were captured through scanning and analyzed using SPSS and STATA. Qualitative data were tape-recorded, transcribed, and analyzed using NUD*IST.

Description of the Intervention

The intervention sought to integrate alcohol risk reduction counseling into VCT. This was done by implementing a three-day training for providers in the intervention sites. The training used an alcohol module that was prepared by the intervention partners. Providers were trained on how to implement the revised VCT protocol integrating alcohol risk reduction. The protocol guided providers to ask all clients about their alcohol use, screen alcohol users for their levels of alcohol use, offer them a brief intervention, and make appropriate referrals. The CAGE screening tool was used to screen clients for their levels of alcohol use. CAGE is an acronym of four questions in a screening tool that focus on Cutting down, Annoyance by criticism, Guilty feelings, and Eye-opener.

After being screened, clients were offered a brief intervention, which was based on the screening results. Two or more “yes” responses on the CAGE screening tool indicate that one has problems with alcohol. The brief intervention consisted of a 5-10 minute client-centered alcohol counseling intervention aimed at helping clients reduce or stop their alcohol intake and related risks. Because of the gender differentials in alcohol use, providers also discussed with clients their partner’s alcohol use and related risks. Existing brochures and posters were reproduced and distributed for use by clients and providers. Providers were offered monthly supportive monitoring during the entire period of the intervention. The CAGE data form was attached to the regular VCT data form and collected from the sites on a monthly basis.

Key Findings

Introduction of the intervention significantly increased alcohol risk reduction counseling at the VCT centers.

Providers trained at the intervention sites were able to integrate alcohol risk reduction counseling into VCT. Respondents from the intervention sites were significantly more likely to have been asked about their alcohol use and that of their partners; they were more likely to have been screened for their levels of alcohol use; and they were more likely to have been given feedback about their alcohol use.

In addition, although not significant, at the intervention sites, clients with alcohol problems were more likely to have been scheduled for follow-up appointments at the VCT centers for further discussion about their drinking. The specific data comparing baseline and follow-up differences at the intervention and comparison sites were as follows:

- Asked about their own alcohol use: Baseline to follow-up change at intervention sites was significant (44 percent to 83 percent; $p = 0.000$), with no change at the comparison sites (40 percent to 41 percent; $p = 0.5$).
- Asked about their partner’s alcohol use: Baseline to follow-up change at intervention sites was significant (33 percent to 72 percent; $p < .001$), with proportions at the comparison sites dropping significantly (32 percent to 22 percent; $p = 0.02$).

- Screened for their levels of alcohol use: At follow-up, 77 percent of clients from intervention sites were screened compared with 33 percent at the comparison sites ($p < .001$). In addition, providers were able to integrate the CAGE screening tool into the VCT services with relative ease.
- Received feedback of the screening results from providers: At follow-up, 67 percent of clients from intervention sites received feedback compared with 35 percent at the comparison sites ($p < .001$)
- Scheduled for a follow-up appointment: At the intervention sites, 36 percent of the clients with alcohol problems were asked to come back to the VCT center compared with 13 percent from the comparison sites ($p = 0.14$).

Clients were open to receiving alcohol counseling during VCT.

Almost all (97 percent and 90 percent of clients at the intervention and comparison sites, respectively) reported that they would have been extremely receptive to discussions about alcohol use while at the VCT center. Further, non-alcohol users also felt they would have liked to discuss alcohol issues with providers (67 percent and 79 percent at the intervention and comparison sites, respectively). Both clients and providers widely agreed that alcohol is a major factor for HIV risk, and that the VCT room was an appropriate place for such a discussion to take place.

The alcohol counseling component increased VCT time by seven minutes, which did not bother the providers.

The average time taken on alcohol discussions alone was seven minutes, and providers did not find this burdensome. The average time taken for an entire VCT session was 52 minutes (range: 46-90 minutes), which was within the 45-60 minutes allocated for a VCT session.

Referrals to alcohol treatment and care facilities were weak.

For clients who were screened and identified as having alcohol problems, referrals to alcohol treatment and care facilities were weak. There were no differences in referral rates for both the intervention and comparison sites. Ten percent of intervention sites clients were referred to an alcohol treatment center, as were 8 percent of comparison site clients, while 8 percent of intervention site clients and 5 percent of comparison site clients were asked to join Alcoholics Anonymous (AA). Some of the reasons that providers gave for this weak referral system were that alcohol treatment and care facilities are few and unaffordable for many people, and that they (the providers) did not have adequate information about these facilities. Providers need to strengthen these networks by creating stronger links with existing alcohol treatment and care facilities and AA groups. Also, as stated above, some providers asked clients who had drinking problems to come back to the facilities for further discussion about their drinking. With the challenges noted with referral systems, this practice can be reinforced as a possible option for follow-up care.

Clients from the intervention sites displayed more concrete intentions to change behavior, stating that they would reduce or stop their alcohol intake.

After discussions with the providers, clients were asked what they intended to do about their alcohol use. Forty-five percent of respondents from the intervention sites said they would reduce their alcohol intake, compared with 24 percent from the comparison sites. Similar proportions said that they would stop their alcohol intake altogether (45 percent and 24 percent at the intervention and comparison sites, respectively). Respondents from the intervention sites were more categorical in stating that they would either reduce or stop their alcohol intake. In contrast, those from comparison sites preferred to state that they would “take extra precautions to protect themselves from HIV while drinking.”

Half of the intervention sites clients could recall seeing a poster on alcohol at the facility, but the likelihood of having a brochure at hand was minimal, largely because of high demand.

Posters and brochures were distributed at the intervention sites, and clients at these sites were more likely to report having seen the posters compared with their counterparts from the comparison sites (53 percent versus 16 percent; $p < .001$). There were some posters at the comparison sites, which could be an indication of spillage. Demand for the brochures seemed to be high, as only 8 percent of the clients from the intervention sites had the alcohol brochure on the index day. Providers reported that the alcohol brochures were taken immediately after they were displayed, which resulted in quick stock-outs. Future programs should ensure that there are adequate supplies of alcohol education materials for clients.

Conclusions

Overall, the results indicate that it is feasible to integrate alcohol risk reduction counseling into VCT, and that it is generally accepted by providers and clients alike. The intervention sites registered better study outcomes than the comparison sites, which implies that the trained providers were able and willing to implement the revised protocol. The CAGE screening tool was easily integrated into the regular VCT services. Both clients and providers found the program to be important. The alcohol counseling component increased VCT time by seven minutes, which providers did not find burdensome. This study therefore supports the formal integration of alcohol risk reduction counseling into VCT services in Kenya.

Background and Literature Review

Alcohol consumption is popular in Kenya, particularly among men, and both home-brewed and commercially prepared beverages are widely available. Studies in Kenya have indicated that one-third of Kenyan men are current users of alcohol (CBS 2004; Othieno et al. 2000), and that alcohol is the most abused drug (Ndetei et al. 2006). Among current users of alcohol, there are indications that most of them drink to hazardous levels. Ashley et al. (2006) reported that the prevalence of hazardous drinking patterns in sub-Saharan Africa, such as drinking a large quantity of alcohol per session or being frequently intoxicated, is second only to Eastern Europe. In a study of hospital patients attending urban and rural clinics in western Kenya, Shaffer et al. (2004) found that 76 percent of males and 25 percent of females who were current drinkers reported hazardous drinking behavior. A baseline study to profile alcohol use of VCT clients in three provinces in Kenya also found that 66 percent of the current alcohol users were drinking to hazardous levels (Mackenzie and Kiragu 2007). Data indicate that female alcohol users are more likely to be HIV-positive. The 2003 KDHS (CBS 2004) showed that HIV prevalence among women who had ever used alcohol was 19 percent, compared with 9 percent among their counterparts who had never drank. In Kisumu, Ayisi et al. (2000) found that after controlling for confounding variables, women who drank alcohol were 60 percent more likely to be HIV-positive than women who did not drink alcohol.

Alcohol use has been identified as one of the underlying social factors that drive HIV risk behavior. The association between alcohol use, reduced sexual inhibitions, HIV transmission, and individual behavior has been demonstrated in numerous studies in both developing and developed countries. Weiser et al (2006), Zablotska et al (2006), Morojele et al. 2005), and Shaffer et al. (2004) have all documented that alcohol is thought to fuel HIV transmission by blunting one's behavioral self-monitoring and increasing the likelihood of multiple partners, unprotected sex, intergenerational sex, and commercial sex.

Studies in South Africa (King et al. 2004; Abrahams et al. 2004), Uganda (Karamagi et al. 2006), and Kenya (CBS 2004) have also strongly associated alcohol use with the incidence of intimate partner violence. The use of alcohol, particularly heavy alcohol use, increases the occurrence and severity of both physical and sexual violence. People in abusive relationships are more likely to have unprotected non-consensual sex, mainly because they lack the ability to negotiate for safer sex. Unprotected non-consensual sex is likely to include forced vaginal sex, which may cause trauma and increase the chances of HIV transmission. Kalichman and Simbayi (2004) found that there was a close connection between sexual assault and women's risk for STIs and HIV. They found that women with a history of sexual assault were significantly more likely to have multiple male sexual partners, greater rates of unprotected vaginal and anal intercourse, more sexual contacts involving blood, and more STIs and genital ulcers, all of which are predictors of HIV.

Despite the recognition of the role that alcohol plays in fueling the HIV epidemic, programmers have been faced with the challenge of how to respond to alcohol use in HIV prevention. In sub-Saharan Africa, few HIV prevention programs, including voluntary counseling and testing (VCT) programs, have directly targeted HIV risk behavior among people who drink and are at risk for HIV. This is partly because HIV prevention strategies have not incorporated an alcohol assessment module in their programs, and because providers are not formally required to ask all clients about their alcohol use. At VCT centers in Kenya, the current practice is to turn away clients who come to the center while intoxicated. These clients are turned away by the gate keepers without any information or appointment to come back when they are sober. Hence providers miss an important opportunity to address this potentially modifiable risk factor. And

such programs have the potential of reducing sexual risk taking among beneficiaries. In a randomized, controlled trial of attendees of an STI clinic in Cape Town, South Africa, Kalichman et al (2007) found that a single counseling intervention that included exploration of the risk of alcohol in sexual contacts reduced HIV risks for up to six months.

In recognition of this gap in service provision, the World Health Organization (WHO) adopted Resolution WHO 58.26 on Public Health Problems Caused by Harmful Alcohol Use at the 58th WHO Assembly in May 2005 (WHO 2005). This mandated WHO to make specific requests to member states to intensify efforts to reduce the burden of alcohol-related problems nationally, regionally, and globally. Regionally, a policy paper presented at the 42nd Regional Health Ministers Conference in Mombasa, Kenya, in February 2006 urged member states to put issues related to alcohol in their national HIV strategies and ensure that appropriate alcohol and HIV policies and programs were in place. They endorsed the appointment of national technical working groups to spearhead the implementation of alcohol and HIV programs (Morris et al. 2006).

VCT programs were identified as one of the key entry points for services designed to reduce the impact of alcohol on HIV transmission. With about 900 VCT centers spread all over Kenya (LVCT 2007), VCT services are an important entry point for HIV prevention messages, treatment, and care. During pre-test counseling, clients are given information on modes of HIV transmission and triggers of risky behavior. Thus, the VCT setting offers an optimal venue for discussing alcohol as a factor in HIV transmission, and for helping clients formulate risk-reduction plans. Because both HIV and alcohol abuse are stigmatized, VCT centers can offer a supportive atmosphere to discuss risk behaviors that are otherwise considered taboo, and counselors can offer appropriate referrals. However, because greater quantities of alcohol predict greater sexual risks than does frequency of drinking, it is important to screen clients for their levels of alcohol use so as to offer relevant advice and referrals. It is therefore necessary for appropriate screening tools to be identified for use in such settings. Also, alcohol use displays significant gender differentials. Men are more likely to drink and engage in risky behaviors, whereas women's risks are often associated with their male sexual partner's drinking. Interventions should therefore target both men and women with appropriate messages and advice.

To address these issues, Horizons/Population Council implemented a program seeking to integrate alcohol risk reduction counseling into VCT services. To evaluate this objective, researchers employed a quasi-experimental research design with intervention and comparison sites, and with surveys conducted pre- and post-intervention. This report describes the findings of that study.

Methods

Study Objective and Design

The objective of the study was to determine the feasibility of integrating alcohol risk reduction counseling into VCT service provision in three provinces in Kenya. To evaluate this objective, researchers employed a quasi-experimental design with intervention and comparison arms. Baseline and follow-up data were collected from 15 static and 10 mobile VCT centers from Nairobi, Coast, and Central provinces of Kenya. Eight of the static VCT centers were randomly allocated to the intervention arm of the study, while the remaining seven were allocated to the comparison arm. Because the providers at the mobile sites move from one site to another, all of these sites needed to be assigned to the same treatment group. The decision was randomly made to allocate them to the comparison arm of the study.

To test the feasibility of the program, researchers compared baseline to follow-up data, as well as differences between intervention and comparison sites. The following outcomes were measured: provider's inquiry about client's and partner's alcohol use, screening for alcohol use, provision of feedback, referrals to care and support, exposure to educational materials, and client and provider's receptiveness toward the program. The study hypothesized that clients in the intervention sites would have better outcomes than their counterparts in the comparison sites. The study focused on alcohol use because compared to other addictive drugs, alcohol is more widely used in Kenya.

Study Sample and Data Collection Methods

In June 2006, a cross-sectional baseline survey of 1,073 VCT clients from 25 VCT centers was conducted, prior to implementation of the intervention. The VCT centers included in the study had been purposively selected because they were situated in high density population areas with anecdotal evidence of high alcohol use. Sampled clients had to have been through the VCT session and given informed consent, but did not need to have tested for HIV.

Seven of the static sites were affiliated with either the Ministry of Health or local government, seven were affiliated with either religious or non-governmental organizations (LVCT, Eastern Deanery, Family Health Options Kenya, Hope Worldwide, and Baptist AIDS Response Unit), and one site belonged to Kenyatta National Hospital in Nairobi. All the mobile sites were affiliated with LVCT.

Once the structured questionnaire was developed, it was pre-tested and translated into Kiswahili and Kikuyu. The translated versions were also pre-tested before the tools were finalized. Interviewers underwent a three-day training on how to administer the survey questionnaire and observe ethical procedures. Data were collected using face-to-face interviews. Each interviewer was stationed at the sampling facility until they reached the allocated quota for that facility. These quotas had been proportionately allocated based on the client flow in each facility versus the expected sample size in each of the three provinces.

Potential respondents were invited for the interview after they were through with the VCT session. Respondents had to be adults (18 years or over). Once a respondent consented to participate, they were interviewed in a private place using any of the three languages in the questionnaire. Nearly half (48

percent) of respondents were interviewed in Kiswahili, 36 percent in English, and 16 percent in Kikuyu. The interviews lasted 30-45 minutes and the acceptance rate was 88 percent.¹

In July 2007, after a year of implementing intervention activities, a second cross-sectional follow-up survey of 1,058 VCT clients from the same facilities was conducted. The same research team was used, and the same data collection methods were applied as the baseline survey. However, the follow-up questionnaire had an additional section that evaluated clients' exposure to the intervention. At follow up, the acceptance rate was 82 percent. Forty-two percent of the follow-up respondents were interviewed in Kiswahili, 37 percent in English, and 23 percent in Kikuyu. Table 1 shows the number of VCT clients interviewed at baseline and follow up.

Data were also gathered using focus group discussions (FGDs) and in-depth interviews to inform the development of the questionnaire and the intervention. At baseline, 19 FGDs were conducted as follows: three with ART providers and three with patients at alcohol treatment centers, four with bar patrons, three with adherence counselors, two with patients on ART, and four with VCT counselors. At follow up, to gather information on attitudes of providers and clients toward the intervention, six FGDs were conducted from three intervention sites: three with VCT clients and three with VCT counselors. All sessions were tape-recorded and the verbatim responses used in the analysis of the data.

Ethical Considerations

The research protocol was reviewed and approved by Kenya's National Council for Science and Technology, and Population Council's ethical review board. Approval was also obtained from the provincial medical officers of health and officers-in-charge of the participating sites. Interviewers were trained on confidentiality, implemented the informed consent procedure with all eligible respondents, and only interviewed those who agreed to participate. Respondents who showed distress were not interviewed. Respondents were requested not to reveal their HIV status to the interviewer. Interviews were conducted in a private place and no identifying information was recorded on the questionnaire. During the data collection, the consent forms and the questionnaires were stored separately in sealed envelopes. Completed questionnaires, consent forms, transcripts, and cassettes were stored in locked cabinets, and access to these data was restricted to the research team.

¹At both baseline and follow up, the main reason for refusal was that the client was in a hurry; other clients did not give a reason for not wanting to be interviewed.

Table 1 Number of VCT clients interviewed, by province, at baseline and follow up

Province	Baseline n = 1,073	Follow up n = 1,058
Nairobi	544	556
Coast	226	202
Central	303	300

Data Management and Analysis

Data were captured through scanning of the questionnaires using Formic software. To verify the scanned data, 15 percent of the questionnaires were rescanned and 10 percent were physically checked for consistencies. After scanning, the data were cleaned and analysis conducted using SPSS v. 13.0 and STATA v. 9.0. Bivariate analysis was carried out using cross tabulations, and Pearson's chi-square test of independence was used to test for significance. Results were considered statistically significant at or below a p-value of 0.05. The qualitative data were transcribed, entered, and analyzed using NUD*IST.

Assessment of Drinking Levels

To assess respondent's drinking levels, the Alcohol Use Disorders Identification Test (AUDIT) was used. This is a 10-item scale with a total score of 40. It was developed by WHO as a screening tool to identify excessive drinking and to help healthcare practitioners identify risky or harmful drinking and people who would benefit from reducing or ceasing drinking. The AUDIT has been validated through development and evaluation over two decades, and has been found to provide an accurate measure of risk across sex, age, and culture (Babor et al. 2001; Saunders et al. 1993). A score of eight points and above indicates that one is a hazardous alcohol user (see Appendix 1 for the AUDIT questions, scoring, and analysis of the scores).

To assess the severity of a partner's alcohol use, a proxy indicator was developed based on the following three questions:

- Have you ever been concerned that your partner drinks too much?
- Have you ever been told that your partner drinks too much?
- Have you ever been told that your partner needs to seek help because of his/her drinking?

Any respondent answering "no" to all three questions was considered to have "no" concern; those answering "yes" to one or two of these questions were categorized as having "some" concern; while those answering "yes" to all the three questions were categorized as having "great" concern about their partner's drinking.

Description of the Intervention

Training of VCT counselors

The intervention partners in this study were Liverpool VCT, Care and Treatment (LVCT) and Support for Addiction Prevention and Treatment in Africa Trust (SAPTA). In September 2006, providers from eight intervention sites participated in a three-day residential training workshop. The purpose of the training was to guide counselors on how to implement a revised counseling protocol (see Appendix 2) that integrated alcohol risk reduction counseling into VCT. A total of 32 counselors were trained in two batches. A training module was developed by the intervention partners, in conjunction with Horizons/Population Council.

The training module has 15 units and uses interactive and experiential methods. Although the focus of the training and the integration was alcohol use, participants were also informed about use of other substances/drugs. The module is guided by the principles of HIV counseling. It provides factual information on types of substances and their names, definitions of substance abuse and dependency, reasons that make people use substances, and effects of these substances on the body. It discusses the relationship between substance use and HIV acquisition, and interactions between substance use and antiretrovirals. In addition, the module addresses rehabilitation for substance abusers, skills required to counsel substance abusers, and application within the VCT center. It also addresses the role that shame and stigma plays among substance abusers. It discusses how to integrate alcohol discussion into the VCT protocol, screen clients for alcohol use, offer a brief intervention, and refer appropriately. During the training, providers listened to a talk from a recovering alcoholic and watched videos highlighting the plight of alcohol abusers. In addition, providers were assessed for their own alcohol use using the CAGE tool.

Before they left the workshop for their various sites, providers made follow-up action plans for implementation at their facilities. To enable them to give adequate supervisory support to the counselors, the supervisors were given a one-day sensitization workshop to update them on the new protocol. After the follow-up survey, all the providers from the comparison sites received a similar training, as well as the screening tools and education materials.

Implementation of activities

After the training, trained providers oriented their colleagues at their home facilities on the revised protocol. However, reports indicate that the providers giving the orientation felt that this was not adequate and that all providers from the participating sites should have attended the three-day training, as seen in this quote:

For example after the training, we came and orientated but you find that each should have gone for this training; they ought not to be given an orientation. We orientated them but at least if each one of them went for the training it would be easy to share a lot with the client on alcohol and drugs use.

VCT counselor, Nairobi, Venue 2

The revised VCT protocol

The revised VCT protocol integrating alcohol risk reduction counseling required VCT counselors to formally ask clients about their alcohol use, screen alcohol users for their levels of alcohol use, discuss alcohol use as a risk trigger for HIV, and discuss alcohol-related risk reduction plans. It also aimed to encourage clients to stop or reduce their alcohol intake, and created an opportunity for those requiring further help to be referred for alcohol care and support. The specific components of the integration were as follows:

1. Screening

During the risk assessment session, all clients were screened for their alcohol use. This was done using the CAGE screening tool (the name of this tool is an acronym of the four questions in the tool, which focus on Cutting down, Annoyance by criticism, Guilty feelings, and Eye-opener), developed by Ewing in 1984. The tool has since been widely used in healthcare settings across the world to screen clients for their alcohol use and has proved effective in helping providers make a diagnosis of alcoholism. It also serves well as a screener for harmful drinking or alcohol dependence. Such screening can be followed up with further assessment through an in-depth discussion about clients' drinking habits. The four questions asked in the CAGE screening tool are:

1. Have you ever felt that you need to **C**ut down on your drinking?
2. Have people **A**nnoyed you by criticizing your drinking?
3. Have you ever felt bad or **G**uilty about your drinking?
4. Have you ever had a drink first thing in the morning (**E**ye-opener) to steady your nerves, e.g. get rid of a hangover or get your day started?

To screen clients for their drug use, the protocol used the CAGE-AID (CAGE-Addjusted to Include Drugs) screening tool, an adapted version of CAGE that screens for drug use. Both CAGE and CAGE-AID were further modified and used to screen for partners' alcohol and drug use. The acronyms used were PaCAGE (Partner CAGE) and PaCAGE-AID (Partner CAGE-AID). In all instances, the format and analysis of the four CAGE questions were maintained. Two or more "yes" responses were indicative that someone (or their partner) was having problems with substances, which meant that the client needed further discussion with the provider.

2. Brief intervention alcohol counseling model using FRAMES

After screening clients for their levels of alcohol use, providers used WHO's Brief Intervention alcohol counseling model to discuss with clients about their alcohol use and related risks (Babor et al. 2001; NIAAA 2005). This is a client-centered counseling model that takes 5-10 minutes. To remind providers of the steps in this counseling model, the FRAMES acronym developed by Miller and Sanchez (1994) was used.

F — **Feedback** of personal risk or impairment. Providers gave clients feedback of the results from the CAGE screening tool, and explained their meaning.

R — **Responsibility** by the client for change. The provider encouraged the client to take responsibility for their possibly risky drinking behavior.

A — Advice that was clear and explicit was given. Providers educated and advised clients on how to reduce or stop their drinking. This included education on standards of drinking and HIV risks associated with drinking.

M — Menu of alternate strategies for tackling alcohol problems were presented to clients. This included setting realistic and attainable goals, and creating goal statements such as “I will stop drinking,” “I will reduce my intake,” or “I will take extra precautions to reduce my risks while drinking.”

E — Empathy as a counseling style was encouraged. Providers were trained to avoid confrontational styles (for example, labeling or forcing clients into a corner). They were to give advice, not prescriptions.

S — Self-efficacy (Client Empowerment) in the client was enhanced. Providers encouraged clients to address their drinking. They empowered the clients to change their behavior, assured them that they have the capability to change, and solicited their commitment to do so.

3. Referrals

During the training, providers were given a referral list for alcohol treatment centers and Alcoholics Anonymous (AA) meetings. They used these lists to refer clients who needed follow-up care and support. Alternatively, providers could schedule clients with drinking problems for follow-up visits for further discussion about their drinking and that of their partners.

4. Educational materials

To supplement the information that the clients were receiving from the providers, existing brochures (from Family Health International/IMPACT) and posters (from Population Services International) were reprinted and distributed to the intervention sites. The brochure was titled “Say No to Excessive Alcohol Consumption” and aimed at empowering people to reduce their alcohol intake. The posters were two different versions of the same tagline and message. The tagline was “Kunywa Zaidi, Teleza Zaidi,” which can be loosely translated to “The more you drink the more you slip.” The message was explicitly written at the bottom of the posters and it read: “Drinking too much alcohol can lower the accuracy of one’s judgment and increase the likelihood of sexual behaviors that put one at risk of HIV infection, if you enjoy alcohol, remember to drink in moderation.”

Supportive monitoring

In addition to the regular supervision that counselors receive from their supervisors, all the providers implementing the new protocol received monthly supportive monitoring from the research team. This team helped them with troubleshooting and provided them with the screening tools, other data forms, and brochures for clients. They also collected the completed data forms, including the CAGE screening tool, and sent them to LVCT for entry and analysis. Data from the screening tool indicate that between October 2006 and June 2007, 6,991 clients from eight VCT sites had been screened for their alcohol use.

Process Findings

The alcohol component increased VCT time by an average of seven minutes, which providers did not find to be a burden.

During the implementation of the intervention, an independent interviewer visited four randomly selected intervention sites to assess the amount of time that the VCT sessions were taking with the added alcohol component. To do this, both observational and interviewing techniques were used. During the observations, the interviewer sat outside the VCT room and recorded the amount of time each VCT session took. After each session, she asked the provider to give an estimate of the amount of time they had spent discussing alcohol issues. A total of 32 observations were made. The average time taken for the entire VCT session was 52 minutes (range: 46-90 minutes), which was within the recommended 45-60 minutes for VCT sessions. The average time spent on alcohol discussions was seven minutes, which providers did not find to be a burden.

The CAGE screening tool was implemented with relative ease.

The monitoring reports indicated that, overall, the CAGE screening tool was easy to use and implement. It made it possible for providers to identify clients with alcohol problems who required further discussion regarding their alcohol use, and also enabled providers to tailor their discussions to the specific needs of the clients. Because the CAGE questions were asked during general risk assessment, and the data filled together with the regular VCT data form, most providers were able to integrate the tool into the regular VCT.

Although most providers implemented this tool with relative ease, a few of them felt that the tool required extra time to be completed.

... I think the issue of forms. I think they should use the same thing because it is taking a lot of time. First you fill the CAGE form and then you transfer the information to another form, it takes a lot of time....

VCT counselor, Nairobi

Others felt that it should have been translated to Kiswahili.

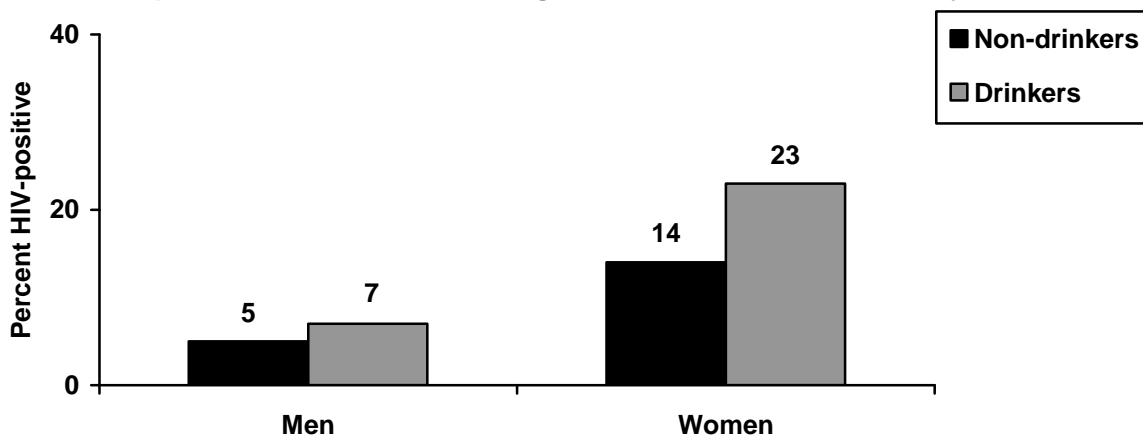
I would I prefer if they would translate to Kiswahili. For example, the word alcohol and drug, I think it should be translated to Kiswahili.

VCT counselor, Mombasa

Women who were screened and identified as having alcohol problems were more likely to be HIV-positive.

As reported earlier, a total of 6,991 VCT clients were screened for their alcohol use. Fifty-two percent were men. Overall HIV prevalence was 11 percent (men: 7 percent; women: 16 percent). One-third (33 percent) of the VCT clients who were screened said that they had ever used alcohol in the last 12 months. On correlating the alcohol screening results with the HIV results, the data indicated that compared to non-drinkers, people who drank alcohol were more likely to be HIV-positive, and this was more so among the women, as shown in Figure 1.

Figure 1 Comparison of HIV status among non-drinkers and drinkers by sex



These results suggest that women who drink are at a higher risk of HIV infection. VCT centers should therefore give special attention to women who use alcohol so these risks can be explored and managed exhaustively and effectively.

Alcohol self-assessment of providers was beneficial.

During the training, trainees were assessed for their own alcohol use and given feedback. The objective of this self-awareness exercise was to make them better providers by knowing themselves first. Analysis of the trainees’ own drinking levels indicated that 60 percent were current alcohol users. Among these, 45 percent had a positive CAGE result, indicating that they had problems with alcohol. These results suggest that programs targeting clients should first address the needs of the providers. Such self-awareness exercises make them better providers, as they are able to empathize with their clients and provide the service from a point of experience.

Results

Demographic Profile of the Study Population

At both sites, the demographic characteristics of the respondents at baseline and follow up were similar (see Table 2). Their mean age was 29 years (range: 18-85 years), and over three-quarters had a sexual partner.

Table 2 Demographic comparison of the study sites at baseline and follow-up

Characteristic (%)	Intervention sites		Comparison sites	
	Baseline n = 483	Follow up n = 456	Baseline n = 590	Follow up n = 602
Sex				
Male	54	56	51	43**
Female	46	44	49	57**
Age (mean 29 years)				
Mean and below	64	69	65	66
Above mean	36	31	35	34
Marital status				
Single (never married)	57	63	52	55
Married	33	33	39	37
Divorced/separated/widowed	10	5	9	8
Education level				
Primary and less	32	27	42	44
Secondary	42	47	44	43
University and above	11	6	2	2
Other formal	15	20	11	11
Religion				
Protestant	67	59	62	64
Catholic	24	32	31	27
Muslim	6	8	3	2

**p < 0.05; Because all mobile sites were comparison sites, these numbers could reflect seasonal variation, market days, drought, and other factors that impact gender-based activities

Drinking Status of the Study Population

Table 3 shows that there were no significant differences in drinking status at both sites at baseline and follow-up. Overall, about 20 percent of the respondents were current drinkers, about 40 percent were former drinkers (used to drink but currently do not), and about 35 percent had never drunk. Men were more likely to be current drinkers of alcohol than women. At the intervention sites, 32 percent of men were current drinkers of alcohol, compared with 15 percent of women. The differential was the same at the comparison sites: 26 percent of men were current alcohol users, compared with 15 percent of women.

Analysis of the levels of drinking among the current drinkers using the AUDIT scale showed that, overall, over 60 percent of the current drinkers were hazardous drinkers. In terms of partners' alcohol use, with the exception of the follow-up sample at the comparison sites, women were more likely to report having a partner who drinks. Over half of the respondents with partners who drank were concerned about their partner's drinking. At baseline, over half of the sample had a close family member who had alcohol problems (52 percent and 55 percent at the intervention and comparison sites, respectively).

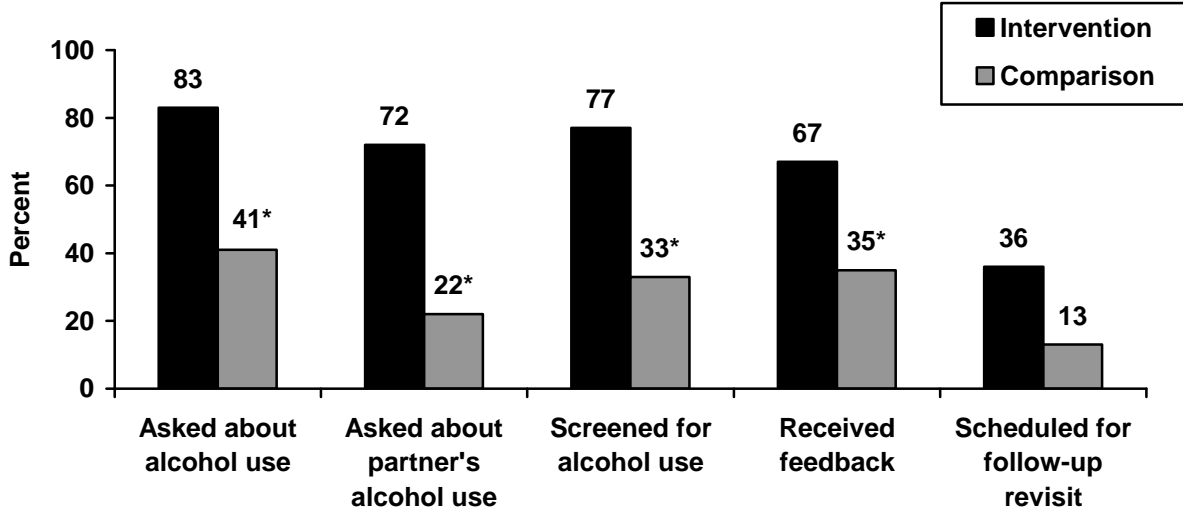
Table 3 Comparison of self and partner drinking levels at baseline and follow up

Characteristic (%)	Intervention sites		Comparison sites	
	Baseline	Follow up	Baseline	Follow up
Drinking status (among all)	n = 483	n = 456	n = 590	n = 602
Current drinkers	22	27	20	20
Former drinkers	43	40	44	45
Never drank	35	32	35	35
Drinking levels (among current drinkers)	n = 106	n = 123	n = 119	n = 120
AUDIT ≥ 8 (hazardous drinkers)	65	54	66	68
AUDIT ≤ 7 (low-risk drinkers)	35	46	34	33
Have partners who drink (among those with partners)	n = 388	n = 365	n = 440	n = 442
All	25	29	26	27
Levels of concern about partner's alcohol use (among those with partners who drink)	n = 99	n = 107	n = 116	n = 118
"No" concern	50	51	30	36
"Some" concern	26	31	38	42
"Great" concern	24	19	32	21

Summary of Main Study Outcomes

Figure 2 shows the comparison of the main outcome variables at follow up for both the intervention sites and comparison sites. Overall, respondents at the intervention sites had better outcomes than those from the comparison sites. Clients from the intervention sites were more likely to have been asked about their and their partners' alcohol use, were more likely to have been screened for their levels of alcohol use, and were more likely to have been given feedback. Although not significant, clients at the intervention sites who had alcohol problems were more likely to have been scheduled for follow-up appointments for further discussions with the VCT providers about their alcohol use.

Figure 2 Comparison of main study outcomes at follow up: intervention vs. comparison sites



*p < 0.001

Individual Study Outcomes

Provider inquiry about client's alcohol use

One of the main expectations of the study was that VCT counselors would ask their clients whether they use alcohol. This inquiry would form the basis on which the provider would go further and screen clients for their alcohol use, offer them a brief intervention, and make appropriate referrals. In this regard, all respondents were asked whether the VCT counselor had talked to them about their alcohol use.

As seen in Table 4, at the intervention sites, there was a significant increase between baseline and follow up in the proportions of people who had been asked about their alcohol use (44 percent to 83 percent; $p < .001$). This increase occurs in all sub-groups of VCT clients. The baseline and follow-up proportions at the comparison sites remained the same (40 percent to 41 percent; $p = 0.5$).

Table 4 Provider asked whether they use alcohol by selected sub-groups of VCT clients: baseline vs. follow up at both sites

Provider asked client whether they use alcohol (%)	Intervention sites		Comparison sites	
	Baseline n = 483	Follow up n = 456	Baseline n = 590	Follow up n = 602
All	44	83*	40	41
Sub-groups of VCT clients				
Sex				
Male	50	84*	44	41
Female	37	81*	35	41
Age (mean 29 years)				
Mean and below	40	84*	35	37
Above mean	52	81*	48	50
Education level				
Primary and less	44	87*	40	42
Secondary and above	44	81*	39	41
Drinking status				
Current drinkers	56	74*	34	43
Former drinkers	44	86*	41	39
Never drank	38	86*	41	43

*Baseline to follow-up changes significant at $p < 0.001$

At the follow-up survey, current users of alcohol were asked whether they had disclosed to the provider that they drank alcohol. The data showed that at the intervention sites ($n = 379$), almost all (99 percent) of the current drinkers who were asked about their alcohol use disclosed to the providers that they were users. At the comparison sites ($n = 247$), lower proportions (81 percent) disclosed this information to providers ($p < .001$). Hence providers from the intervention group were better able to solicit this information from clients.

Observations from the FGDs also showed that clients are willing to disclose their drinking status to providers, if they are asked. For example,

It is important [to ask clients about their alcohol use] because most of the clients are willing to reveal it all to the counselor.

VCT counselor, Nairobi

Provider inquiry about client's use of other addictive substances/drugs

The intervention also required providers to ask clients whether they were users of other addictive substances such as cocaine, heroine, marijuana, and sleeping pills. This was based on the premise that such an inquiry would facilitate discussions around related HIV risk. In this regard, at both baseline and follow up, all the study participants were asked whether the VCT counselor had asked them about their use of other addictive substances besides alcohol.

The results indicate that at follow up, there was a significant increase in the proportion who had been asked this question at the intervention sites, from 33 percent to 70 percent ($p < .001$). The proportions at the comparison sites remained low (31 percent to 25 percent; $p = 0.02$).

Screening clients for their alcohol use

Another aspect of the intervention was that providers were expected to screen all clients visiting the intervention sites for their alcohol use. This was done using the CAGE screening tool and was limited to all follow-up survey respondents who were currently using alcohol, and had disclosed their drinking status to providers ($n = 91$ and $n = 43$ at the intervention and comparison sites, respectively). These people were asked whether the providers had asked them each of the four questions in the CAGE screening tool. The possible answers were “yes,” “no,” and “cannot remember.” Any respondent who had two or more “yes” responses to any of the four questions was considered to be a user. The results indicate a significant difference in the clients screened at the intervention sites compared with those screened at the comparison sites (77 percent versus 33 percent; $p \leq .001$).

Provision of feedback to clients

Following screening for alcohol use, providers were expected to give the clients feedback regarding their drinking levels. This feedback would then form the basis for further discussion around the client’s alcohol use and/or appropriate referrals. To assess whether clients were given feedback after being screened, all the clients at follow up who had been screened were asked whether the providers gave them any feedback regarding their drinking levels.

The data showed that clients from the intervention sites were significantly more likely to be given feedback about their drinking than those from the comparison sites (67 percent versus 35 percent; $p < .001$).

In terms of the specific feedback given, at the intervention sites,² 71 percent of the current drinkers were told that they had a drinking problem, while 20 percent were told that they did not. Those clients told that they had a drinking problem were given the following advice (more than one answer was possible):

- 45 percent were asked to stop drinking
- 36 percent were told that excessive alcohol use could cause one to get addicted to the habit, which is detrimental to one’s health
- 34 percent were informed that alcohol use may cause one to engage in risky sexual behavior
- 25 percent were told that they were drinking to harmful levels and that they needed to consider reducing their alcohol intake

² Data from the comparison sites are not shown because of the small number of clients given feedback ($n = 15$). Questions on drinking were asked of different subsets of the sample and therefore result in different sample sizes.

Referrals

Providers from the intervention sites were expected to offer appropriate referrals for clients with drinking problems. In this regard, all the current drinkers at the follow-up survey who were screened and told that they had a drinking problem were also asked whether they were offered any type of referral (n = 72 and n = 38 at the intervention sites and comparison sites, respectively). There were no significant differences in number of clients referred for further care at the intervention sites (see Table 5). One of the reasons given for this weak referral system was that most alcohol treatment facilities are not affordable to many people. Most of them charge between \$100 and \$1,500 per month, well beyond the reach of more than half of Kenyans, who live on less than a dollar a day.

Most of the clients that we refer... it is a challenge for them to go to the centre and they are supposed to pay for the services there. So most of the clients [say] 'so you are sending me to a centre where I will spend like 10,000 shillings or 5,000 shillings? I cannot afford that money.' So maybe you refer someone but maybe he or she might not go there because of the financial issues.

VCT counselor, Nairobi

On the other hand, the only public facility with affordable service charge fees, Mathare Hospital, is highly stigmatized because it also treats people with mental illnesses. And, although AA groups offer support for people with alcohol problems, most are housed by churches, which limits people who do not subscribe to those churches. Providers also acknowledged that they lacked adequate contact information about the facilities, and that feedback about clients referred to these facilities was not easy to obtain. It is worth noting that providers from the intervention sites were more likely to ask clients with alcohol problems to come back to the VCT centers for further discussion about their alcohol use (36 percent at intervention sites versus 13 percent at comparison sites). Given the challenges evidenced with the referral facilities, asking clients with alcohol problems to come back to the VCT centers for further discussion about their drinking is a viable follow-up option that should be encouraged.

Table 5 Selected outcomes at follow up: intervention vs. comparison sites

Outcome	Intervention sites	Comparison sites
Referrals: % of clients...		
Asked to go to an alcohol treatment centre	10	8
Asked to join AA	8	5
Motivation to change behavior[§]: % of clients who said they would...		
Stop their alcohol intake	45	24
Reduce their alcohol intake	45	24
Take "extra precautions while drinking not to expose themselves to HIV"	28	42
Exposure to education materials: % of clients who...		
Had a brochure on alcohol on the index day	8*	1
Saw a poster on alcohol on the index day	53*	16

*p < 0.001

§more than one answer possible

Motivation to change behavior

At follow-up, all the current drinkers who were screened, given feedback, and had a discussion about their alcohol use were asked what they intended to do, irrespective of the feedback they got about their drinking status (n = 89 and n = 42 at the intervention and comparison sites, respectively). Multiple responses were possible for this question. Respondents from the intervention sites were more categorical in stating that they would either reduce or stop their alcohol intake. In contrast, those from comparison sites preferred to state that they would “take extra precautions to protect themselves from HIV while drinking” (see Table 5).

Exposure to education materials

All the clients at follow up were asked whether they had gotten a brochure on alcohol from the facility to take home and read. They could either have picked it up themselves or been given it by the VCT counselor, and they were required to show it to the interviewer. Clients from the intervention sites were more likely to have a brochure than those from the comparison sites (see Table 5). Women were also more likely to have a brochure than men (11 percent versus 5 percent, respectively; $p = 0.002$). However, the fact that only less than 10 percent of the clients at the intervention sites had a brochure on the day of the survey can be attributed to high demand. Providers reported that supplies of brochures were exhausted within a day or two of being received at the facilities.

Similarly, all the clients at follow up were asked whether they had seen a poster highlighting the dangers of excessive alcohol use while they were at the VCT center. As was the case with the brochure, clients from the intervention sites were more likely to report having seen this poster compared with their counterparts from the comparison sites (see Table 5).

Those who reported having seen the poster (n = 243 and n = 97 at the intervention and comparison sites, respectively) were asked to state the message that they had got from the poster. The “take-home” message for over half of clients from both sites was that “the more one drinks, the more likely they are to engage in risky behaviors that could expose one to HIV infection” (62 percent and 64 percent in the intervention and comparison sites, respectively; $p = 0.7$). This indicates that clients exposed to the poster got its intended message.

Provider inquiry about partner alcohol use and related risks

The intervention required providers to also inquire about the alcohol and other substance use by clients’ sexual partners. In this regard, all respondents with partners were asked whether the VCT counselor had asked them about their partners’ alcohol and drug use. This question was asked at both baseline and follow up (n = 753 and n = 882 at the intervention and comparison sites, respectively). Overall, at the intervention sites, there was a significant increase from baseline to follow up (33 percent to 72 percent; $p < .001$) in the proportions who had been asked about their partners’ substance use. At the comparison sites, the levels decreased (32 percent at baseline and 22 percent at follow up; $p = 0.02$).

Further analysis of the follow-up survey data at the intervention sites indicated that women were more likely to be asked whether they had a partner who uses alcohol or other drugs, compared with men (76 percent versus 69 percent). This was largely expected because women were more likely to have a sexual

partner who drank. Forty-five percent of the women at the intervention sites had a partner who drinks compared with only 15 percent of the men.

After establishing whether the provider had asked about partners' alcohol use, researchers were interested in finding out whether a discussion followed around the HIV risks associated with partners' substance use. Hence, all the respondents with partners who used alcohol were asked whether the provider had discussed the risks associated with partner alcohol use ($n = 107$ and $n = 118$ at the intervention and comparison sites, respectively). Clients at intervention sites were significantly more likely to receive this information from providers (70 percent versus 37 percent; $p < .001$).

Further, data showed that at both sites, once providers asked clients about their partner's alcohol use, they were able to discuss with them ways of minimizing these risks (85 percent [$n = 75$] and 80 percent [$n = 44$] at intervention and comparison sites, respectively; $p = 0.4$). Also, they were able to schedule them for follow-up discussion together with their partners (62 percent and 64 percent of intervention and comparison sites respondents, respectively). This practice was confirmed during the FGDs:

When the client come[s] and maybe the partner is the one positive on alcohol, I advise the client to come with her or him to the discussion and sometimes we see them coming back the two of them and then we discuss it as a couple thing.

VCT counselor, Nairobi

Clients' and providers' receptiveness toward the program

To assess clients' receptiveness toward discussions about their alcohol use while at the VCT center, all respondents at follow up, regardless of their drinking status or that of their partners, were asked whether they thought VCT counselors should discuss alcohol use with their clients. Almost all clients (97 percent and 90 percent at the intervention and comparison sites, respectively) indicated that they would be extremely receptive to discussions about alcohol use while at the VCT center. Further, non-alcohol users also felt they would have liked to discuss alcohol issues with providers (67 percent and 79 percent at the intervention and comparison sites, respectively). Results from the FGDs confirmed these data:

The counselor was so good and really helped my situation with alcohol. We really talked about alcohol and I felt that he has really helped me in that issue...

VCT client, Nairobi

The clients were so receptive toward the program that they wanted the information on alcohol use and risk of HIV passed on to a larger audience through a national mass media campaign.

They should have the adverts in the T.V., radios, which should be more elaborated to reach to the whole society so that everybody should be aware of the effects of alcohol. And also I would urge you to spread the information everywhere, not only here in Nairobi...

VCT client, Nairobi

Providers also found these discussions useful and were receptive toward implementing the program at their sites. As one provider said during FGDs, when the VCT counselors take the initiative to bring up the discussion on alcohol as part of the counseling, it legitimizes the discussion and the client is able to open up and discuss related risks.

I think it is important when you introduce it in the VCT session because it makes the clients know the risks associated with alcohol. When we are talking about alcohol, this client will be able to identify that as an addictive of drugs and if you do not talk about alcohol the client might not bring out the issue but when you talk about it the client will talk about it and its effect.

VCT counselor, Nairobi

Both clients and providers widely agreed that alcohol is a major risk factor for HIV risk, and that the VCT room was the right place for such a discussion to take place.

Personally I feel the need for concern on what the level of drinking may be in Kenya. When you are assessing the risk... you will find that most of the clients will associate their risks on how drunk they are. You will find a client will say they did something because of how they drank the other day. So I feel my need for concern of alcohol drinking in the VCT no matter what way the clients are.

VCT counselor, Nairobi

...after drinking you get...involved in sexual behaviors with the prostitutes...So I would urge the VCT counselors to impose on that issue of alcoholism very much because it is a very important issue to be discussed.

VCT client, Nairobi

Other providers felt that one of the root causes of risky behavior was finally being formally addressed.

...the youth...take the alcohol ...to get courage, others tell you it is out of peer pressure but at the end of the day, that alcohol consumption...having fun and in fact to them there is nothing wrong with what they are doing but when you look at it properly that is where the source is. We are talking about the protection but we are not talking about the root cause of all these problems.

VCT counselor, Nairobi

There was evidence of the trained providers being empathetic toward people who had come to the VCT center while intoxicated. Rather than being turned away by the receptionists, such clients were now being referred to the counselors, who gave them information and asked them to come back when they were sober.

You will find that initially we used to turn away clients who are drunk... but immediately after they came from the training, you find that we were taking even the drunk clients. So it has been beneficial for me and also the client who could not access the service then, they can now access the service.

VCT counselor, Nairobi

Conclusions and Recommendations

Conclusions

Integration of alcohol counseling into VCT programs is feasible, and providers were able to implement a protocol integrating alcohol risk reduction counseling into VCT.

The findings of this study suggest that it is feasible to integrate alcohol risk reduction counseling into VCT services. Clients from the intervention sites were more likely to have been asked about their own alcohol use and that of their partners. At the intervention sites, people who use alcohol were more likely to have been screened and given feedback about their drinking levels. This feedback formed the entry point for discussions on behavior change. Clients with drinking problems were asked to consider stopping or reducing their alcohol intake. They were also educated on the dangers of excessive alcohol use, and the relationship between alcohol use and risky sexual behavior. Also, clients at intervention sites were more likely to report that they intended to reduce or stop their alcohol intake. This indicates that the trained providers were able to implement the revised protocol requiring them to integrate alcohol risk reduction counseling into VCT. The alcohol counseling component increased the time taken during VCT sessions by an average of seven minutes, which providers did not find burdensome. Hence, this study supports the formal integration of alcohol risk reduction counseling into VCT services in Kenya.

Providers accepted the program and found the VCT room an appropriate venue for discussing alcohol related risks.

The findings indicate that the providers from the intervention sites were receptive toward the program and were willing to implement it. Training the providers on alcohol issues and guiding them through integration of the revised protocol prepared them to offer the service to their clients. This also made discussions on alcohol more formal and legitimate. Because of the role that alcohol use plays in fueling HIV infection, VCT services can have a significant impact on mitigating this relationship. In addition, studies have shown that advice and education given by a health provider is usually highly regarded. VCT counselors need to seize the opportunity to discuss with clients the relationship between alcohol use and HIV infection and help them formulate risk reduction plans.

The program was acceptable to clients.

While at the centers, VCT clients were extremely receptive toward this service. This can be attributed to the fact that most clients were able to relate to the alcohol issues raised. The data showed that significant proportions of the clients interviewed were dealing with alcohol use in their personal lives, in the lives of their partners, and in their close families. Over two-thirds of the current drinkers were drinking to hazardous levels. Over half of those with partners who drank were concerned about their partner's alcohol use, a proxy indicator for partner's level of alcohol use. At baseline, over half of respondents had an immediate family member who had an alcohol problem. It is therefore likely that advice on alcohol given at the VCT center would benefit the clients, their partners, and their immediate families.

Correlation between alcohol use and HIV was higher for females.

This study noted that although very small numbers of women actually use alcohol compared to men, female alcohol users are 2-3 times more likely to be HIV-positive than their male counterparts. Process data from the intervention showed that women were three times more likely to be both CAGE-positive and HIV-positive. These results were consistent with the KDHS data that showed that female alcohol users were twice as likely to be HIV-positive. Hence, during VCT counseling, special attention should be given to women who use alcohol, so that all their risks are addressed.

Providers at the intervention sites asked clients about their partner's alcohol use and discussed risks related to partner's alcohol use.

Regarding partner's alcohol use, the findings indicate that providers from the intervention sites were more likely to ask clients about their partner's alcohol use, and discuss with them ways of addressing the HIV risks associated with their partner's alcohol use. It is crucial for VCT providers to ask their clients, especially female ones, about their partners' alcohol use. This is because alcohol use displays significant gender differentials whereby men are more likely to be alcohol users and thus more likely to engage in risky behavior, and women's risks are often associated with their male sexual partner's alcohol use. The findings also indicate that most of the clients with partners who drink were asked to come to the VCT center with their partners for couples counseling. Although on the index day only 10 percent of the clients with partners who drink had come to the facility with their partners, it is worth noting that VCT counselors were asking such clients to come back to the site for couple counseling. Asking clients to come back to the VCT center with their partners who use alcohol is an important way of addressing HIV risks related to partners' alcohol use.

There is need for more information and education materials on alcohol and drugs, and a public awareness campaign on standards of drinking and alcohol-related risk reduction.

The findings indicate that the chances of a client having a brochure on alcohol on the index day were low, at 8 percent at the intervention sites. Although all efforts were made to ensure that there were brochures at the sites at all times, reports from the providers indicated that they often experienced stock-outs almost immediately after the brochures reached the facilities due to high demand from the clients. This apparent need for information on alcohol was reiterated by clients who said that there was an urgent need for a national public awareness campaign to inform people of the dangers of alcohol, and its relationship with high risk behavior and HIV. There is definitely need for such a campaign, especially one targeting alcohol users in establishments that sell alcohol. This campaign should be in both print and audio-visual, and should include "below-the-line" methods such as community theatre and mobile cinemas. Its objective should be to educate the public about acceptable standards of drinking, and urge them to reduce HIV and other risk behaviors associated with alcohol use. Programs should ensure adequate supplies of any materials that are produced.

In addition, although options for treatment are scarce in Kenya and many other sub-Saharan African countries, there is need to strengthen links between VCT centers and existing alcohol treatment centers and AA groups. The researchers determined that because of the scarcity of such resources, those most at risk for alcohol abuse were amenable to follow up visits at the VCT center to discuss alcohol and HIV-

related issues. Until more resources are available, this is an innovative option for providing some support to affected clients. While there may be training costs associated with integration of this component into VCT services, such costs are far less than would be the case if new service delivery systems specifically for alcohol abusers were to be created.

Study Limitations

The pre- and post-test cross-sectional design utilized by the study does not allow measuring of reduction in alcohol use or HIV risk behavior that could be directly attributed to the intervention. The only behavior-related outcome that could be measured was “intention or motivation” to change. Even then, it was not feasible to measure whether these intentions were implemented. Future studies should employ prospective research designs that follow up clients who have been exposed to the intervention over time. Such a design should assess both occurrence and sustainability of behavior change.

In addition, the study relied on client self-reports of the interaction with VCT providers. Future studies should include observations of client-provider interactions.

A third limitation is that the providers knew that the researchers were present at the sites, and that they were asking questions about the intervention. So there was a high chance that they were more vigorous in implementing the intervention activities during the research period than they would normally.

That some of the comparison sites reported some intervention elements is an indication that there was contamination of the comparison sites. This could be attributed to movement of providers from the intervention to the comparison sites, something which the researchers could not control.

Lessons Learned During Implementation of the Intervention

The implementation of this alcohol protocol to test the feasibility of integration of alcohol screening and counseling into VCT settings provided lessons that might benefit future programs:

- Sensitizing site managers and supervisors about the program was useful because it ensured that they provided the counselors adequate and meaningful support as they implemented the program.
- It is important to consider training all the providers at any given site so that the program is implemented in a uniform manner. Due to the technical nature of the subject, expecting trained providers to orient the untrained ones is not realistic.
- After training the providers to integrate alcohol counseling into VCT, once they get back to their facilities it is important to provide support supervision through observed practice so as to facilitate a smooth transition to the revised protocol.
- To reduce the number of forms that providers have to complete while in the VCT room, VCT programs wishing to screen clients for their alcohol use should consider integrating the screening tool into the regular VCT data form.

Next Steps

At the time of writing this report, Liverpool VCT, Care and Treatment, together with the Ministry of Health/NASCOP, were reviewing the national Counseling and Testing (CT) manual. Plans were at an advanced stage to incorporate the alcohol module used in this study into the national CT training manual, and also into the curriculum of a course for VCT counselors being trained at diploma level.

The alcohol module has so far been used to train VCT counselors from Western Kenya, as well as substance abuse outreach workers and men who have sex with men peer educators from Coast Province. Currently, the module is being revised and reviewed and, in 2008, will be used in refresher training for VCT counselors from 15 VCT sites.

References

- Abrahams, N. et al. 2004. "Sexual violence against intimate partners in Cape Town: prevalence and risk factors reported by men". *Bulletin of World Health Organization* 82(5): 330–337.
- Ashley, J.W., Levine, B., and Needle, R. 2006. "Summary of the proceedings of meeting on "Alcohol, HIV risk behaviors and transmission in Africa: Developing programs for United States President's Emergency Plan for AIDS Relief (PEPFAR)," *African Journal of Drug and Alcohol Studies* 5(2).
- Ayisi, J.G. et al. 2000. "Risk factors for HIV infection among asymptomatic pregnant women attending an antenatal clinic in western Kenya". *International Journal of STD & AIDS* 11: 789–797.
- Babor, T.F. et al. 2001. *The Alcohol Use Identification Test. Guidelines for use in primary care*. Second Edition. Geneva: World Health Organization
- Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya] and ORC Macro. 2004. *Kenya Demographic and Health Survey 2003*. Calverton, Maryland: CBS, MOH, and ORC Macro
- Ewing, J, A. 1984. "Detecting alcoholism: The CAGE questionnaire," *Journal of the American Medical Association* 252: 1905–1907.
- Kalichman, S.C. and Simbayi, L.C. 2004. "Sexual assault history and risks for sexually transmitted infections among women in an African township in Cape Town, South Africa," *AIDS Care* 16(6): 681–689.
- Kalichman, S.C. et al. 2007. "HIV/AIDS risk reduction counseling for alcohol using sexually transmitted infections clinic patients in Cape Town, South Africa," *Journal of Acquired Immune Deficiency Syndromes* 44: 594–600.
- Karamagi, C.A.S. et al. 2006. "Intimate partner violence against women in eastern Uganda: implications for HIV prevention," retrieved from <http://www.biomedcentral.com/1471-2458/6/284>.
- King, G. et al. 2004. "Substance abuse and behavioral correlates of sexual assault among South African adolescents," *Child Abuse and Neglect* 28: 683–696.
- Liverpool VCT, Care and Treatment. 2007. Patrick Angala, Data Manager, verbal communication.
- Mackenzie, Caroline and Karusa Kiragu. 2007. "Should voluntary counseling and testing counselors address alcohol use with their clients? Findings from an operations research study in Kenya," *Horizons Research Update*. Nairobi: Population Council.
- Ndetei, D.M., et al. 2006. "Next priorities for intervention in Kenya: Results from a cohort study of drug use, HIV and HCV patterns in five urban areas," *International Psychology Reporter* 10(1): 16–19.
- National Institute on Alcohol Abuse and Alcoholism (NIAAA). 2005. *Helping Patients Who Drink Too Much. A Clinician's Guide*. 2005 edition. U.S Department of Health and Human Sciences, National Institute of Health. NIAAA.

Miller, W.R. and Sanchez, V.C. 1994. "Motivating young adults for treatment and lifestyle change," in G. Howard (Ed.), *Issues in Alcohol Use and Misuse by Young Adults*. Notre Dame. University of Notre Dame Press, p. 55–82.

Morris, C.N. et al. 2006. "Three-country assessment of alcohol-HIV related policy and programmatic responses in Africa," *Africa Journal of Drug and Alcohol Studies* 5(2): 170–184.

Morojele, N.K. and Kachieng'a, M. 2005. The development of a methodology of study factors to risky behavior among alcohol users in diverse settings: Conceptual framework and instruments for qualitative and quantitative research of alcohol use related sexual risk behaviors in South Africa. A report prepared for the Department of Mental Health and Substance Dependence, WHO. Pretoria, South Africa text cites

Othieno, C.J., Kathuku, D.M., Ndeti, D.M. 2000. "Substance abuse in patients attending rural and urban health centres in Kenya," *East African Medical Journal* 77: 592–595.

Saunders, J. B. et al. 1993. "Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption – II," *Addiction* 88: 791–804.

Shaffer, S.N. et al. 2004. "Alcohol abuse among patients with and without HIV infection attending public clinics in Western Kenya," *East African Medical Journal* 81: 594–598.

Weiser, Sheri, D. 2006. "A population-based study on alcohol and high risk sexual behaviors in Botswana," *PloS Medicine* 3(10).

WHO. 2005. "Alcohol use and sexual risk behavior: A cross cultural study in eight countries." Geneva, Switzerland

———. 2005. "Public health problems caused by the harmful use of alcohol. Fifty-eighth World Health Assembly." Geneva: World Health Organization. Retrieved from <http://www.who.int/nmh/WHA58.26en.pdf>.

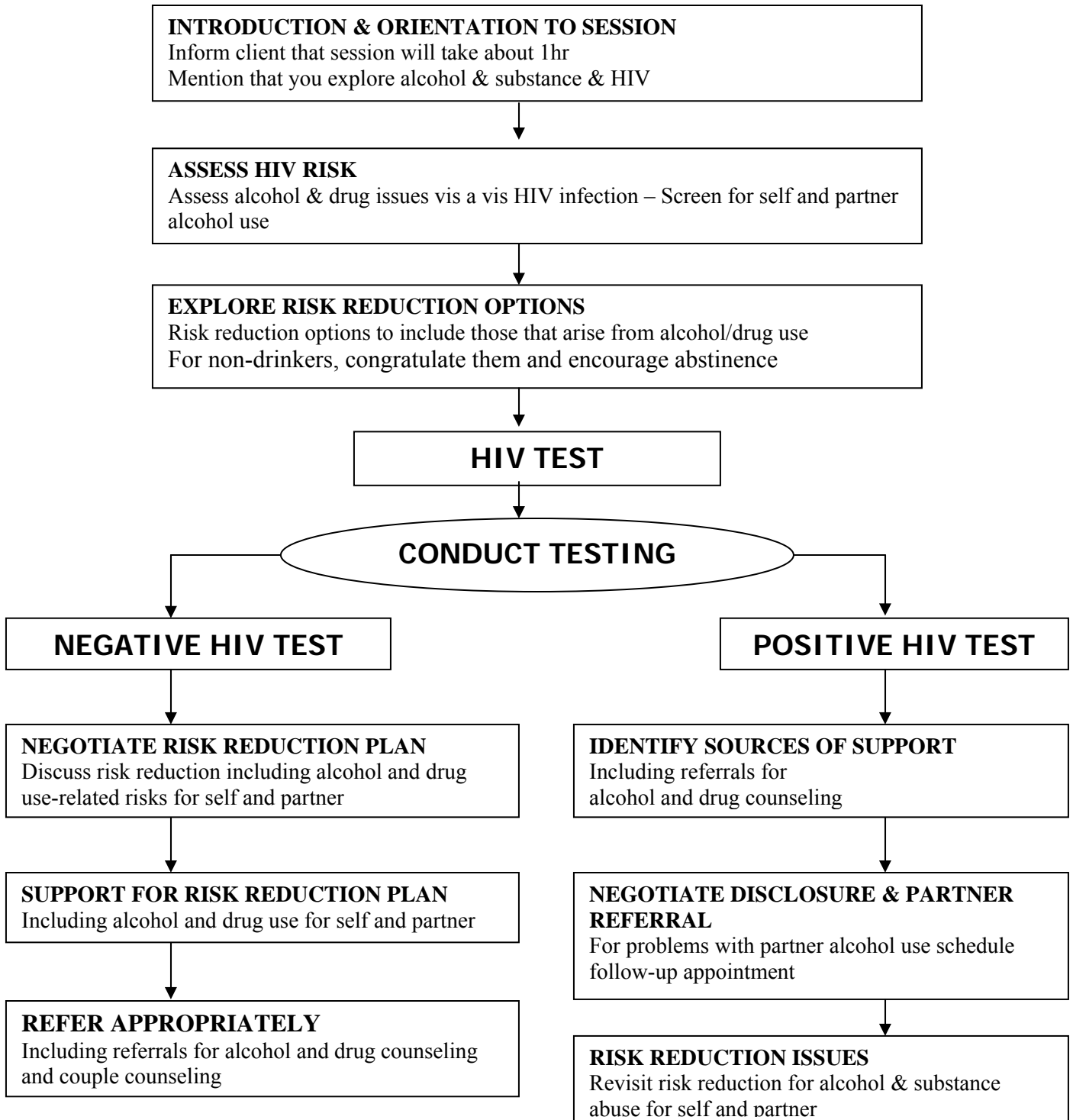
Zablotska, Iryna. R et al. 2006. "Alcohol use before sex and HIV acquisition: a longitudinal study in Rakai Uganda," *AIDS* 20(8): 1191–1196.

Appendix I

Alcohol Use Disorders Identification Test (AUDIT)

Questions	0	1	2	3	4	SCORE
How often over the last year have you had a drink containing alcohol?	Never	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	
How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 or 9	10 or more	
In the last year, how often have you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you found it difficult to get the thought of alcohol out of your mind?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you found that you were not able to stop a drinking session once you started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you needed a drink in the morning to get yourself going after a heavy drinking sessions?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
In the last year, have you or someone else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
In the last year, has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
TOTAL SCORE						
<p>Each question is awarded a score of 0-4 and then added to make a total score. Total scores can range from 0-40. A score of 8-15 indicates that one is a hazardous (or risky) drinker and they need advice to cut down on their drinking. A score of 16-19 suggests that one is a harmful drinker and they need brief counseling and continued monitoring. A score of 20-40 suggests that one is dependent on alcohol and needs further diagnostic assessment for alcohol dependence.</p>						

Appendix II Diagrammatic Presentation of the Revised VCT Protocol Integrating Alcohol Risk Reduction Counseling



Horizons

Horizons is a global operations research program designed to:

- Identify and test potential strategies to improve HIV/AIDS prevention, care, and support programs and service delivery.
- Disseminate best practices and utilize findings with a view toward scaling up successful interventions.



Horizons is implemented by the Population Council in collaboration with

- International Center for Research on Women (ICRW)
- International HIV/AIDS Alliance
- PATH
- Tulane University
- Family Health International (FHI)
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