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PREVENTION OF ALCOHOL-RELATED HIV RISK BEHAVIOR

TECHNICAL BRIEF

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AIDSTAR-One

John Snow, Inc.
1616 Fort Myer Drive, 11th Floor
Arlington, VA 22209 USA0
Phone: 703-528-7474
Fax: 703-528-7480
E-mail: aidstarone-info@jsi.com
Internet: aidstar-one.com

INTRODUCTION

A growing body of epidemiological and social science research, much of it conducted in developing countries experiencing severe HIV epidemics, suggests that alcohol consumption is associated with the sexual behaviors that put people at risk for HIV and other sexually transmitted infections (STIs) (Cook and Clark 2005; Kalichman et al. 2007b). This scientific evidence provides a compelling call to action. In countries battling severe HIV epidemics, addressing harmful drinking in conjunction with interventions to reduce sexual risk behavior may have the potential to reduce HIV transmission more quickly than conventional HIV prevention interventions alone.

The development of effective programs to reduce alcohol-related sexual risk behavior is still in its infancy. This technical brief reviews available evidence on new and innovative programs in this emerging area. Specifically, the brief provides: 1) a summary of up-to-date information on what is known about the relationship between harmful alcohol use and HIV sexual risk behavior and 2) a critical analysis of intervention programs currently being used to address the issue. This brief was developed to assist program planners and implementers in designing HIV prevention interventions that address harmful alcohol use as a risk factor for HIV. It has been informed by a review of the published literature on alcohol and HIV, the AIDSTAR-One database of good and promising programmatic practices, and interviews with experts in the field of alcohol and HIV prevention.

ALCOHOL USE AS A BEHAVIORAL RISK FACTOR FOR HIV

Key findings from seminal research on the intersection of alcohol and HIV show that in developing countries, alcohol use and HIV risk behavior are strongly associated. A variety of surveys have found that people who drink alcohol engage in unprotected sex, multiple partnering, and commercial sex more often than do non-drinkers (Kalichman et al. 2007b; Zablotska et al. 2006).

More specifically, multiple studies have shown that drinking alcohol before sex or being intoxicated during sex is directly linked with HIV. In Rakai, Uganda, use of alcohol before sex increased HIV acquisition by 50 percent in a study of over 14,000 women and men (Zablotska et al. 2006). Among men who visited beer halls in Harare, Zimbabwe, having sex while intoxicated was strongly associated with having recently acquired HIV infection (Fritz et al. 2002). And in Mumbai, India, sex under the influence of alcohol was independently associated with having an STI or HIV among men who patronized female sex workers (Madhivanan et al. 2005).

Drinking venues themselves have also been associated with HIV risk, as they bring together the opportunity to drink alcohol and meet casual sex partners. In rural eastern Zimbabwe, a population-based survey of nearly 10,000 women and men showed that visiting a beer hall in the last month was associated with both risky behavior and with HIV infection itself (Lewis et al. 2005). In Cape Town, South Africa, men and women who met sex partners at informal bars (shebeens) engaged in heavier drinking, had more sex partners, and had higher rates of unprotected sex compared to people who did not meet sex partners at shebeens (Kalichman et al. 2008b).

The causal pathways linking alcohol use and sexual risk-taking are still being investigated. Recent research from the field of psychology indicates that much of the sexual risk behavior typically associated with drinking is attributable to the pharmacological properties of alcohol, which decrease cognitive capacity to accurately judge risk and increase attention to sexual

arousal (George and Stoner 2000; Davis et al. 2007). Additional research has shown that alcohol use before sex may be motivated by a person's expectation that alcohol will improve enjoyment of sex or sexual performance (Kalichman et al. 2006, 2007a).

Social science research has also elucidated the association between sexual risk-taking and alcohol use from a gendered perspective. According to a study of risky drinkers recruited from bars in Johannesburg and Pretoria, South Africa, men's drinking was heavily influenced by peers and was characterized mainly as a sensation-seeking and stress-reducing activity (Morojele et al. 2006). Importantly, this research also showed that for men, the capacity to drink heavily and engage in sex with multiple casual partners symbolized masculinity. For women, drinking was an opportunity to seek male companionship—particularly that of older men. Social vulnerability as an underlying determinant of alcohol use and sexual risk among women emerges strongly from the research. A rapid situation assessment of sexual risk behavior and substance use among sex workers in Chennai, India, for example, shows how women consumed alcohol to cope with personal histories of abuse and neglect and numb themselves emotionally to their work (Kumar 2003).

Box 1. Implications of the research for program design

- Conduct formative research to understand how people perceive the benefits of excessive alcohol use, including expectations that alcohol may increase the opportunity to attract a sexual partner or enhance the enjoyment of sex.
- Create messages that challenge the idea that alcohol use imparts physical strength or is associated with wealth, health, and masculinity.
- Increase awareness and understanding of what constitutes excessive alcohol use and the range of physical and social harms that are associated with it.
- Harness the force of peer influence to support risk reduction. Create messages that challenge the ways in which peers and social networks encourage risky behavior.
- Ensure condoms are available and heavily promoted at all venues where alcohol is consumed, especially where most-at-risk populations (e.g., sex workers and their clients) drink and socialize.
- When conducting HIV prevention activities at drinking venues, tailor messages and activities to the gender-specific needs of patrons.
- Provide alternative recreation opportunities for adults and youth so that bars are not the only places to go for socializing and entertainment.

PREVENTION OF ALCOHOL-RELATED HIV RISK

Programs specifically designed to address the link between alcohol and HIV are extremely rare anywhere in the world. However, a small number of alcohol and HIV prevention interventions have recently been developed and implemented in sub-Saharan Africa and India. Although data on the programs' effectiveness are not always available or are limited, these programs nonetheless provide important lessons regarding the feasibility, acceptability, and potential effectiveness of several approaches to reducing alcohol-related sexual risk. The programs represent three types of approach: 1) curriculum-based prevention for youth, 2) brief individual counseling interventions, and 3) bar-based interventions using peer leaders. The characteristics, strengths, and limitations of each approach are described below.

Curriculum-based Alcohol and HIV Intervention for Youth

Curriculum-based programs have been used widely in HIV prevention and are characterized by a set of activities or exercises ordered in a developmental fashion to foster learning of specific knowledge and skills (AIDSTAR-One, 2009). In South Africa, two programs demonstrate how to develop and implement curricula combining alcohol-risk reduction content with HIV prevention education (see Box 2 for a profile of one of the programs) (Karnell et al. 2006; Smith et al. 2008). Both programs used existing curricula developed in the United States and adapted them for the South Africa context. Curriculum-based programs allow for young people's skills, knowledge, and attitudes to be influenced just as their patterns of behavior around alcohol use and sex are being established. As a result, interventions with youth have the potential to greatly affect the future of the HIV epidemic. Keys to success for alcohol and HIV curriculum-based interventions include:

- Involving teachers, administrators, and students in developing and revising program content
- Providing rigorous training for educators and youth leaders
- Identifying agents of change and positive role models among students to act as peer leaders.
- Limitations of curriculum-based programs for youth include:
  - Adapting curricula from one country context to another must be done carefully to ensure the content is relevant to the social and cultural setting. Risk-reduction messages that are intuitive to young people in one culture may be much less so in another culture.

Box 2. HIV and Alcohol Prevention in Schools (HAPS) Project

Approach: A curriculum called "Our Times, Our Choices," designed for 9th graders to increase their knowledge about alcohol and HIV and to develop their skills in recognizing and avoiding risks associated with alcohol use and sex.

Implementing Agency: South Africa Human Sciences Research Council

Location: KwaZulu-Natal Province, South Africa

Core Program Elements:

- Audio monologues delivered by four fictional characters describing their lives, as well as dilemmas about whether to use alcohol and/or have sex
- Peer leaders, elected by students, who receive two days of training to lead class discussions based on the monologues
- Exercises in which students explore positive alternatives to drinking alcohol and having sex
- Role plays to give students the opportunity to practice strategies for resisting peer pressure to drink and/or have sex.

Results: Based on the results of a randomized-controlled field trial, the program significantly reduced the frequency of alcohol use before or during sex among those who became sexually active during the intervention ($p < 0.05$). Additionally, girls in the intervention group reported feeling more confident to refuse sex ($p < 0.05$). Among students who were sexually active before the intervention, intention to use a condom was higher among those in the intervention group than in the control.

Conclusions: The program showed promise in promoting the avoidance of alcohol-related sexual behavior and the feasibility and acceptability of implementing a curriculum-based alcohol and HIV intervention in schools in South Africa.

Adolescents who do not attend secondary school cannot benefit from this intervention. In many developing countries, secondary school attendance is uncommon. Potential solutions to this challenge include developing curricula with content that is appropriate for primary school students and identifying out-of-school alternatives for delivering curricula to adolescents (these may include faith-based or other types of youth groups, for example).

Brief Individual Counseling Interventions

Numerous research studies conducted in North America, Europe, and Australia have shown that screening for alcohol-related problems followed by brief counseling is very effective in reducing hazardous alcohol consumption (Kaner et al. 2007). Those who screen positive for potential alcohol problems (based on the Alcohol Use Disorders Identification Test [Babor et al. 2001]) are given brief counseling that includes information on alcohol-related harm, help in identifying high-risk situations they may encounter related to drinking, and development of a personal plan to reduce their drinking (Babor and Higgins-Biddle 2001). In South Africa, the screening and brief counseling intervention model is being adapted for use with STI clinic patients to address alcohol-related HIV risk (see Box 3) (Kalichman et al. 2007c).

Keys to success for the brief intervention model include:

- Adaptation of counseling messages to the client's readiness for change
- Thorough training, supervision/support, and quality assurance for those providing the screening and brief counseling to ensure the program reaches its potential
- Referral of clients with possible alcohol dependency to treatment services.

Box 3. Brief alcohol and HIV risk reduction counseling program in Cape Town, South Africa

Approach: A 60-minute HIV and alcohol risk reduction counseling session delivered by trained counselors to STI clinic patients. The program is based on the Information-Motivation-Behavioral Skills model of behavior change, motivational interviewing techniques, and the World Health Organization brief alcohol counseling model.

Implementing Agency: Human Sciences Research Council of South Africa

Location: Cape Town, South Africa

Core Program Elements:

- Administration of the Alcohol Use Disorders Identification Test (AUDIT) to measure hazardous drinking
- A 20-minute information session on HIV and alcohol risk and prevention
- A 20-minute session to boost motivation and commitment to undertake risk reduction around alcohol use and HIV risk, based on the results of the AUDIT test
- A 20-minute skills-building session based on the individual's own risk profile.

Results: Based on a randomized controlled intervention trial, alcohol use before or during sex and expectancies that alcohol use enhances sexual experiences were both lower among participants receiving the counseling session. Intervention participants also had a 25% increase in condom use and a 65% reduction in unprotected sex in the six months after the session.

Conclusions:

A brief, individualized counseling session provided to STI clinic patients reduces alcohol use in sexual contexts for up to six months.

Limitations of the brief counseling model include:

- The model has shown effectiveness only in clinical settings. It is not clear whether this approach will be equally effective if delivered in community settings. Some evidence suggests that the approach may be successfully adapted for group-based use in community settings (Kalichman et al. 2008a), but more operations and efficacy research is needed.

- Brief counseling requires skilled intervention staff and is labor intensive. The individualized nature of the approach requires up to 60 minutes of one-on-one time and is thus an expensive method for preventing alcohol-related HIV risk. This intervention may be most appropriate where it can be targeted toward those most in need of intensive and personalized intervention—for example, most-at-risk populations (e.g., sex workers and their clients, men who have sex with men, and STI-clinic patients).

Bar-based Interventions Using Peer Leaders

Bars are situated at the crossroads of alcohol use and risky sex. Bar-based programs therefore represent a crucial opportunity to intervene in hazardous drinking and risky sexual behavior. Research conducted in the United States in the 1990s showed that the Popular Opinion Leader (POL) program successfully lowered the frequency of risky sex among patrons of gay bars (Kelly et al. 1997). The POL model is now documented as a best practice in HIV prevention for gay men (CDC 2007).

The POL approach has been adapted for use in wine bars in Chennai, India (see Box 4) (Sivaram et al. 2004, 2007). Although final results are still pending on the program's effectiveness in reducing alcohol-related HIV risk, we have included it in this technical brief because it provides an interesting example of how the POL model can be adapted for use in the developing world.

Box 4. An opinion-leader-led HIV and alcohol prevention program in wine bars

Approach: A bar-based HIV prevention program using POLs as peer educators.

Implementing Agency: YRG CARE

Location: Chennai, India

Core Program Elements:

- Behavioral surveillance of wine bar patrons' alcohol use patterns and sexual risk behavior
- Identification of a cadre of POLs among wine bar patrons
- Training of POLs using a standardized curriculum, culturally adapted for the Chennai wine bar context, delivered during five weekly sessions that covered HIV transmission and prevention information, skills-building for communicating with peers, and a specific session on how to help friends reduce alcohol-related sexual risk
- POL engagement in conversations with members of their social networks at the wine shops. These conversations are a means to disseminate accurate information and offer skills-building in HIV risk reduction, including alcohol as a facilitator of sexual risk.

Results: Over 50 percent of wine bar patrons had three or more sexual partners in the past three months, and 71 percent of all patrons reported having exchanged sex for money. POL program content was successfully adapted for Chennai wine bars, and a cadre of POLs was successfully recruited and trained, with high acceptability of the program among bar patrons.

Conclusions: The POL program is feasible and acceptable to implement in bars in Chennai, India. Behavioral data suggest the program is urgently needed.

The POL approach is based on Diffusion of Innovation Theory (Rogers 2003), which suggests that a small group of forward-thinking innovators can act as change agents for an entire social network. When applied in bar settings, the POL approach can also address the role alcohol plays in facilitating risky sex. The POL approach capitalizes on the strength of existing social networks to provide conduits for information dissemination, thereby expanding the reach of prevention messages to a large number of people. In addition, by enacting the target behavior, POLs act as role models for their peers.

Keys to success for the bar-based POL model include:

- POLs should be identified by observing the bar over a period of time and talking to patrons about their social networks at the bar and who among their peers they admire, trust, and respect. Bartenders, managers, and owners can also help suggest which patrons play a key role in social life at the venue.

- POLs need ongoing support from program staff in order to maintain their motivation to participate in the program. Frequent meetings to check in with POLs and provide advice and support may help. Also, program staff need to consider what types of monetary or non-monetary incentives are appropriate for maintaining POL involvement, depending on the context.

Limitations of the POL approach include:

- Currently, there is no evidence that the POL approach works outside of gay bars in the United States. More research is needed to show whether this model can be successfully adapted for other countries and show effectiveness in reducing alcohol-related HIV risk.

- In practice, accurately identifying POLs can be difficult. Some social science skill is needed to conduct adequate observations and interviews to identify POLs. These skills may not be found in all program teams.

CHALLENGES

For prevention of alcohol-related HIV risk to be effective, a range of challenges and barriers must be overcome.

Alcohol and Pleasure

The success of individual-level interventions (such as brief counseling), as well as community-based interventions (such as the POL approach), may be challenged by widely shared belief systems in which alcohol consumption is associated with pleasure, relaxation, and feelings of social connectedness. Successful programs will be based on an understanding of the social values attached to drinking and will need to provide alternative activities through which the same or similar social bonding can take place.

Alcohol Production as a Vibrant Industry

Alcohol production and retail sale are vibrant industries in the developing world, contributing significantly to national tax revenue as well as to household livelihoods. As a result, city, provincial, and national governments, as well as the individuals whose livelihoods depend on the production and sale of alcohol, may strongly oppose any effort to curb drinking or link alcohol use to HIV risk. In order for programs to effectively address the intersection of alcohol use and HIV risk, producers, retailers, and consumers of alcohol need to be included in the process of program development.

Alcohol Use and Social Vulnerability

The synergistic relationship between alcohol abuse and social vulnerability poses a powerful challenge to

alcohol and HIV interventions. For example, for impoverished populations in many developing countries, home production and sale of alcohol are among the few ways of earning income. The proliferation of informal, home-based alcohol selling in poor communities poses a structural barrier that is not easily overcome by individual or even community-level responses. Policies to assist impoverished communities in gaining access to other livelihoods are a crucial component of any approach to reducing alcohol-related HIV risk.

QUESTIONS AND ANSWERS

Can interventions to prevent alcohol-related HIV risk produce long-term effects?

Current research indicates that short-term effects are achievable from interventions that address alcohol use and HIV risk. It remains to be seen whether these effects can be strengthened and sustained over time. Strategies need to be developed to ensure that families, communities, and national governments provide a supportive social and policy environment for sustainably reducing the wide range of negative effects of hazardous drinking, including HIV risk.

Do we need different programs for light, moderate, and problem drinkers?

The HIV prevention needs of individuals vary based on quantity and frequency of alcohol use. Thus, a range of approaches and services need to be included in a comprehensive response to alcohol use as a risk factor for HIV. Those who drink most heavily may be in need of alcohol dependency treatment before they can be receptive to HIV prevention messages. Awareness-raising combined with simple risk reduction messaging may be sufficiently effective for light drinkers, while moderate drinkers are likely to need awareness-raising and intensive skills-building in how to avert risks associated with drinking.

How can messages regarding alcohol use be integrated into existing HIV prevention programs?

The broad range of existing HIV prevention programming provides excellent opportunities to integrate content about alcohol use. For example, screening for problem drinking, followed by brief individual counseling on alcohol and HIV, can be integrated into existing HIV voluntary counseling and testing programs with little extra cost. In mass media approaches to HIV prevention, such as serial radio or television dramas, bar-based or alcohol-related scenarios can be easily incorporated to help viewers learn about how alcohol may exacerbate risk and how those risks can be averted. Existing community-based prevention programs can plan outreach activities to drinking venues in order to provide activities tailored to alcohol drinkers.

RESOURCES

For more information on the following topics, please visit the websites listed below.

The HIV and Alcohol Prevention in Schools Project:
http://www.hsrc.ac.za/Research_Project-737.phtml

The American Popular Opinion Leader Model:
http://www.cdc.gov/hiv/topics/prev_prog/rep/packages/pol.htm#Intervention

http://effectiveinterventions.org/go/interventions/popular-opinion-leader

The Brief Alcohol Intervention Model:
http://whqlibdoc.who.int/HQ/2001/WHO_MSD_MSB_01.6b.pdf

The Alcohol Use Disorders Identification Test (AUDIT): **http://whqlibdoc.who.int/hq/2001/WHO_MSD_MSB_01.6a.pdf**

The United States National Institute on Alcoholism and Alcohol Abuse (NIAAA): **http://www.niaaa.nih.gov/**

The World Health Organization Department of Mental Health and Substance Abuse: **http://www.who.int/substance_abuse/**

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