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The intersecting risks of substance use and HIV risk among substance-using South African males and females

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Abstract

Purpose of Review—The aim of this article is to review the recent literature examining the intersection between alcohol and other drug use and HIV risk behaviors for South African males and females, and the implications for the development of interventions and future research.

Recent findings—The current literature indicates that substance use in sexual contexts (i.e., before or during sex) as well as outside of the sexual context is associated with HIV risk behaviors, such as having unprotected sex and multiple sex partners,. Additionally, environments where substances are used, such as drinking establishments, may be associated with HIV risk behaviors. Moreover, sexual violence is also associated with substance use. Brief HIV prevention interventions to address substance use have demonstrated promising—findings such as consistent condom use, less impaired sex and less unprotected vaginal and anal intercourse—when compared with other interventions,.

Summary—Recent research findings support the previous literature concerning the link between substance use and HIV risk behaviors in South Africa, and suggest the need for interventions focused on sexual risk behaviors in the context of substance use and the environments in which they are used.

Keywords

alcohol and other drug use; South Africa; HIV risk; impaired sex; sexual violence

Introduction

Although great strides have been made in combating HIV/AIDS in some regions of the world, the epidemic continues to be a major public health concern in South Africa, where more than 5 million people live with HIV/AIDS [1]; more than anywhere else in the world [2]. The primary mode of HIV transmission in sub-Saharan Africa is heterosexual sex [3], and females are disproportionately affected by HIV [1]. South Africa also has high levels of substance use, with an estimated 13% of the population experiencing a substance use disorder in their lifetime [4]. In addition, South Africa has one of the highest amounts of alcohol consumption per adult drinker in the world [5]; and overall, alcohol is the most commonly used substance in the country [6], although other substances (i.e., methamphetamine and cannabis) are the most commonly used substances in specific regions [7].

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Previous research and a recent review have indicated that alcohol and other drug (AOD) use, particularly before and during sexual activity, is associated with HIV risk behaviors among South African males and females [8–12]. Moreover, it has been suggested that venues where AOD use occurs, such as shebeens (informal drinking establishments) and taverns, could serve as key settings for HIV prevention efforts [13]. To further explain this relationship, Morojele et al. [8] developed a South Africa-specific conceptual model about the psychoactive effects of alcohol on reasoning skills and inhibitions, which in turn may lead to risky sex behaviors that can be moderated by such factors as drinking environment and expectations.

This article reviews studies between early 2008 through 2009 that examined AOD use in South Africa and its association with HIV risk, with particular focus on AOD use before and/or during sex, AOD use and the association with risk behaviors, the impact of AOD use in specific environments, sexual violence, and interventions to reduce substance use and sexual risk behaviors.

Impaired Sex: Alcohol and Other Drug Use Before and/or During Sex

Peltzer et al. [14] examined the association of drug use other than alcohol and HIV risk behaviors in three urban South African communities and found that substance use was associated with a composite score of several HIV risk factors, including vaginal and anal sex without a condom and having more than one sex partner in the past 3 months. Study participants who used cannabis before sex or shared needles before sex were significantly more likely to have higher HIV risk scores than individuals who did not. Similarly, participants whose partners used cannabis before sex or shared needles before sex were also significantly more likely to have higher HIV risk scores.

Parry et al. [15] conducted qualitative research among AOD-using populations, including male and female sex workers, as part of a rapid ethnographic assessment in three South African cities. The findings indicated that substances were used before, during and after sex, as well as to increase sexual desire and improve sexual experiences. Substances that were commonly used include cannabis, ecstasy, crack cocaine, and methamphetamine. Study participants reported using substances while engaging in sex behaviors that they would not have engaged in if sober (e.g., anal sex), having unprotected sex to secure drugs, and having sex with multiple people at one time without using protection. This study found a 28% HIV prevalence among participants who agreed to be tested for HIV.

Wechsberg et al. [16] studied alcohol-using females who had recently engaged in sex trading and had main partners, and found that more than half of the study participants had used alcohol before or during sex with their main partner and more than one quarter had used cannabis before or during sex. Multivariate regression analysis showed that women who used alcohol before or during sex with their partner were more likely to score lower on a scale measuring their belief in a woman's right to refuse sex. However, these women were more likely to discuss sexual risk behaviors with their partner. The authors suggested that this finding may be explained by the disinhibitory effect of substance use, thereby making women feel more comfortable talking about risk behaviors with their partners.

While impaired sex is a sexual risk behavior, in order to reduce HIV transmission, it is important to understand the role of AOD use in the sex behaviors of people who are HIV-positive. In a study of people living with HIV in Cape Town, Kalichman et al. [17] found that people who used drugs before sex in the past month were more than ten times more likely to have unprotected sex with a serodiscordant partner—either negative or unknown status—than people who did not use drugs before sex. While drinking alcohol before sex was not found to be significant for this study, any type of alcohol use was found to be

significant and individuals who had used alcohol were more than two times more likely to have unprotected sex with a serodiscordant partner.

Using a daily diary method, Kiene et al. [18] also examined the association of substance use among males and females who were HIV-positive. This study found that when females drank alcohol before sex, a larger proportion of sex acts were unprotected than when they did not drink alcohol. Females also had a greater proportion of unprotected sex acts with partners of unknown status when they drank alcohol before sex, compared with when they did not drink alcohol. When either males or females drank alcohol before sex, they had a higher proportion of unprotected sex acts with casual partners than when they did not drink. Furthermore, over the course of 42 days, the 82 participants engaged in 3,904 unprotected vaginal sex acts and 46 unprotected anal sex acts, with the majority of these acts being with people who are HIV-negative or people of unknown status.

General Alcohol and Other Drug Use and Its Association with Risk Behaviors

Even when AOD use is not limited to sex and is part of general substance use, it may also affect sexual risk behaviors. A 2008 South African national survey found that high-risk drinkers—those scoring higher than an 8 on the Alcohol Use Disorders Identification Test (AUDIT)—and recent recreational drug users had the largest proportions of multiple sex partners in the past year among all of the most at-risk populations, although approximately two thirds of individuals in both groups had used a condom at last sex act [1].

In a study in Cape Town among heterosexuals, Kalichman et al. [19] found that males and females who reported anal intercourse in the past 3 months were significantly more likely to have used alcohol, marijuana, and other drugs during this same period. While by itself this finding does not indicate sexual risk, the authors also found that condoms were not used consistently. For males, approximately one out of three anal sex acts was unprotected; for females, approximately one out of two anal sex episodes was unprotected.

There may also be gender differences in the effects of AOD use on HIV risk. Hedden et al. [20] found that South African males who tested positive for cocaine were approximately three times more likely to test positive for HIV than males who did not test positive for cocaine. However, females who tested positive for cocaine were almost three times less likely to test positive for HIV than females who did not test positive. Lurie et al. [21] found that HIV-infected males in urban and rural South African settings who had ever consumed alcohol were less likely consistently use condoms with their regular partners than males who had never consumed alcohol; this significance, however, was not found for females.

Environments and HIV Risk Behaviors

Kalichman et al. [22] recruited males and females in informal drinking establishments (*shebeens*) in Cape Town and found that more than a quarter of the sample had met at least one sex partner at a drinking establishment; some of the study participants reported having sex in or around a drinking venue within the past month. Although drinking before sex was significant for unadjusted odds ratios, this significance did not hold for adjusted odds ratios. However, adjusted odds ratios indicated that individuals who had met a sex partner at a drinking establishment reported a larger number of unprotected vaginal sex acts in the past month and were almost three times more likely to have multiple sex partners in the past month than individuals who did not meet their sex partners at a drinking establishment. Furthermore, study participants were more likely to score a 9 or higher on the AUDIT and

were more likely to score higher on the alcohol outcome expectancies measure for alcohol enhancing sexual experiences.

Sexual Violence

When discussing substance use and sexual risk, it is important to note that not all sex acts involving AOD are consensual. Sawyer-Kurian et al. [23] conducted focus groups with AOD-using males in Cape Town and found that some males encourage females to use AOD, such as methamphetamine, to make it easier to have sex with them; or in some cases, to rape or gang rape them. In some instances, condoms are not used.

Males in these groups also indicated that substance use, particularly alcohol, influenced their decision about condoms use and that they were less likely to use them when using drugs. As part of a three-city rapid assessment [15], Needle et al. [24] found that drug-using female sex workers in Durban had difficulty negotiating condom use not only because more money is offered for unprotected sex, but also because refusing clients could result in rape or violence.

Interventions to Reduce Substance Use and Sexual Risk Behaviors

Interventions to reduce substance use in sexual contexts have been implemented in South Africa, and the findings are promising for these brief interventions. Testing a two-session HIV prevention intervention designed to reduce substance use, sexual risk, and violence among females in the Western Cape, Wechsberg et al. [25] found at 1-month follow-up that there were significant reductions in the number of times AOD were used before or during sex in the past 30 days. The findings also indicated significant reductions in AOD use in general during this period.

When comparing the outcomes of a one-session alcohol and HIV prevention intervention with a five-session gender-based violence and HIV prevention intervention among males, Kalichman et al. [26] found that the participants in the alcohol and HIV intervention were significantly more likely to report at 1-month follow-up that they were using condoms all the time; in addition to meeting fewer sex partners at drinking establishments and having fewer instances of drinking alcohol before sex than for the participants in the gender-based violence and HIV prevention intervention group. While these differences were not found at 3- and 6-month follow-ups for this single-session, 3-hour intervention, the participants reported fewer acts of unprotected sex at the 3-month follow-up, and a fewer number of sex partners in the past month at 6-month follow-up than the gender-based violence and HIV prevention group.

This same alcohol and HIV prevention intervention, which is a three-hour program based on skills-building for negotiating and condom use, was tested among males and females against a one-hour (control) educational program about HIV and alcohol. The skills-building intervention resulted in significantly fewer unprotected vaginal and anal sex acts, a higher proportion of protected sex, and fewer occurrences of alcohol use before sex [27]. This last variable also remained significant at the 6-month follow-up. Furthermore, this intervention had the greatest reductions among lighter drinkers (defined as AUDIT scores of 8 and above for this study).

Even studies that do not have primary outcomes to reduce substance use may have an effect on substance-using behavior [28]. Current HIV prevention interventions could benefit from expanding/strengthening substance use education components. Mukoma et al. [29] conducted a process evaluation of a school-based HIV intervention in South Africa and found that there was a great demand for additional information on substance use and sexual-

decision making, despite the fact that a lesson was already devoted to this topic. Teachers reported that this lesson was the most engaging to participants and the most needed because of the lack of existing activities in their communities, and the association of substance use with unprotected sex.

Conclusion

Numerous studies have examined the intersection between AOD use and HIV risk behaviors in South Africa and have shown that AOD use is related to sexual risk behaviors, such as having multiple sex partners and unprotected sex, as well as HIV status. However, there is a paucity of recent literature examining existing HIV interventions that focus specifically on this relationship. This is particularly important in South Africa, where more people are living with HIV/AIDS than anywhere else in the world and where substance use is highly prevalent.

It is promising that preventing HIV infection among substance users is one of the nine priority areas under the UNAIDS Outcome Framework, 2009–2011 [30] and the integration of substance use prevention and HIV prevention efforts is part of South Africa's National Strategic Plan 2007–2011 [31]. Addressing substance use and sexual risk requires a multilevel approach [32, 33]. While interventions are currently in various stages of development to address both cultural and gender complexities across communities [34], HIV interventions in South Africa must address the intersecting risks of substance use, violence, and HIV risk.

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