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Determinants of hazardous drinking among black South African men who have sex with men

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ABSTRACT

Background: There is a known heavy burden of hazardous drinking and its associated health risks among black South African MSM; however, no study to date has identified risk factors for hazardous drinking among this nor any other African MSM population.

Methods: A cross-sectional survey was conducted among 480 black South African MSM recruited using respondent-driven sampling. All analyses were adjusted using an RDS II estimator. Multivariable logistic regression was used to assess the relationship between demographic characteristics, psychosocial factors, behavioral attributes and hazardous drinking.

Results: More than half of the men (62%, 95%CI = 56%–68%) screened positive as hazardous drinkers. In multivariable analyses, living in a township (versus the city of Pretoria) (aOR = 1.9, 95%CI = 1.2–3.1, $p < .01$), more gender dysphoria (aOR = 1.4, 95%CI = 1.0–1.8, $p = .03$), having ever received money or other incentives in return for sex (aOR = 2.4, 95%CI = 1.3–4.3, $p < .01$), having been sexually abused as a child (aOR = 2.6, 95%CI = 1.1–6.4, $p = .03$), having anxiety (aOR = 5.4, 95%CI = 1.2–24.3, $p = .03$), and social network drinking behavior (aOR = 5.4, 95%CI = 1.2–24.3, $p = .03$) were positively associated with hazardous drinking. Being sexually attracted only to men (aOR = 0.3, 95%CI = 0.1–0.8, $p = .01$) was negatively associated with hazardous drinking.

Discussion: Hazardous drinking is highly prevalent among black South African MSM. Multiple indicators of social vulnerability were identified as independent determinants of hazardous drinking. These findings are of heightened concern because these health problems often work synergistically to increase risk of HIV infection and should be taken into consideration by efforts aimed at reducing hazardous drinking among this critical population.

1. Introduction

Black South African men who have sex with men (MSM) consume high levels of alcohol (Lane et al., 2011, 2008; Rispel et al., 2011). In one study, nearly two thirds of men reported drinking regularly, with nearly half reporting that they get drunk regularly (Lane et al., 2008). In another study, over half of men reported having 10 or more drinks in a typical day of drinking and more than three quarters of men were classified as having a drinking problem (Lane et al., 2011). In another study, nearly three quarters of men reported having sex while under the influence of alcohol (Rispel et al., 2011). Alcohol use and abuse constitutes a major public health problem, contributing to injury, disease

and death. Hazardous drinking is of particular concern among this population due to the high prevalence of HIV, which estimates range between 13% and 50% (Lane et al., 2011; Rispel et al., 2011; Sandfort et al., 2015), and the increased risk of HIV infection associated with excessive drinking (Bryant, 2006; Kalichman et al., 2007; Rehm et al., 2012; Woolf-King and Maisto, 2011). Alcohol use has also been shown to have negative health consequences among people living with HIV, including lack of viral suppression, common comorbid conditions, and ultimately morbidity and mortality through both biological and behavioral mechanisms (Williams et al., 2016). Despite the known burden of hazardous drinking and its associated health risks, no study to date has identified risk factors for hazardous drinking among black South

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African MSM, nor any other African MSM population (Sandfort et al., in press).

Researchers have observed elevated rates of concurrent psychosocial problems, including heavy alcohol use, among non-African LGBT populations (McKirnan and Peterson, 1989a,b; Sandfort et al., 2001, 2014; Stall et al., 2003, 2001), noting that they work synergistically to increase risk of HIV infection (Jie et al., 2012; Stall et al., 2003). For example, mental health problems, including anxiety (Rosario et al., 2006), and depression (Wang et al., 2007), often co-occur with substance use disorders, particularly alcohol dependence (Stall et al., 2001). Sexual minority stressors, such as internalized homophobia and external homophobia (i.e., experiences with sexual orientation-related discrimination), are associated with increased alcohol-related problems (McKirnan and Peterson, 1989b; Stall et al., 2001), and are likely of heightened importance among black South African MSM where same-sex sexuality is highly stigmatized (Adam et al., 2009; Muraguri et al., 2012; Niang et al., 2003; Smith et al., 2009; van Griensven, 2007; van Griensven and Sanders, 2008). Social network characteristics are also potential determinants of hazardous drinking as social networks are known to play a major role in many health-related behaviors (Doherty et al., 2005; Friedman and Aral, 2001; Luke and Harris, 2007; Smith et al., 2004; Smith and Christakis, 2008; Umberson and Montez, 2010; Youm and Laumann, 2002). For example, the drinking behavior of an individual's social network members often provides a crucial context for individual decisions on how much and how often to drink (Valente, 2003). One's degree of connectedness to a specific social network has been found to be positively associated with one's likelihood of reflecting the normative behavior of that group regarding substance use (Alexander et al., 2001). Peers' alcohol use has been found to be a primary influence on an individual's alcohol use (Gaughan, 2003; Windle, 2000). There is also a potential heightened importance of social networks among stigmatized populations, such as black South African MSM (Latkin et al., 2013).

This paper aims to describe alcohol use among black South African MSM and identify determinants that put them at risk for hazardous drinking. The data for this project were collected among black MSM living in Tshwane, South Africa. These men currently live in or have recently moved from township communities. Township communities are peri-urban areas (the landscape interface between town and country) previously segregated under Apartheid whose residents continue to be characterized by limited resources, low levels of education, and high rates of unemployment. Personal social networks are the primary context in which these men learn how to express their sexuality, deal with stigma, and manage the risks of unprotected sex (Rabie and Lesch, 2009). They meet potential sex partners predominantly through these social networks or at drinking establishments. These circumstances combine to create a context where substance use, particularly excessive substance use, is normative (Lane et al., 2008; Rispel et al., 2011; Sandfort et al., 2015). Respondent-driven sampling (RDS) was chosen as the method to recruit these men because it is the most reliable way to derive valid population estimates for hidden populations such as black South African MSM (Magnani et al., 2005).

2. Materials and methods

2.1. Study population and procedures

The data used for the current project was collected as part of a study whose primary objective was to determine the prevalence of HIV infection among black MSM in Tshwane (Sandfort et al., 2015). Participants were recruited using RDS (Heckathorn, 1997; Heckathorn et al., 2002). Eligibility criteria for study participation included age older than 18; having engaged in oral, anal, or masturbatory sex with another man in the prior 12 months; living, working, or socializing in the Tshwane metro area; fluency in English, Sepedi (Northern Sotho), or isiZulu; and willingness to take an HIV rapid test. Consistent with RDS

methodology, seeds, 20 in total, distributed up to five coupons to eligible men from their social networks who they were willing to recruit into the study. The seeds were referred by the community advisory board, screened to ensure that they met all of the study eligibility criteria and then interviewed about their social network size and composition. All seeds were Black and were purposively selected based on geographic place of residence in the Tshwane metro area and age. Men enrolled in the study and completed study procedures, including a 90-min interviewer-administered computer-assisted personal interview and an HIV blood test, which was conducted following a serial algorithm in accordance with South African national guidelines. All participants were screened by licensed nurses using two licensed rapid test kits (EZ Trust HIV 1 and 2, CS Innovation; First Response, Premier Medical Corporation). Non-reactive samples were interpreted as negative. Samples that were reactive on both tests were confirmed as positive. There were no indeterminate results. Staff provided participants with up to five recruitment coupons for further distribution. All study participants received vouchers worth 150 South African Rand (~\$12 US Dollars) to be redeemed at a supermarket as primary incentive for their own participation, as well as additional vouchers worth 50 South African Rand (~\$4 US Dollars) as secondary incentives for each successful referral to the study. At one point, verification of the inclusion criteria was expanded in order to ensure that all participants met the inclusion criteria. We did not observe evidence of anything else that might have threatened the integrity of the recruitment process. Participants were linked to their referral chain using their coupon identification numbers. All study procedures were approved by the Institutional Review Board of the New York State Psychiatric Institute in the U.S. and the Research Ethics Committee of the Human Sciences Research Council in South Africa. Participants provided written informed consent for the survey. Study staff provided referrals for further HIV testing and counseling, mental health, or primary care as indicated.

2.2. Measures

Scales adapted for and previously validated in South Africa were used whenever possible. Multiple aspects of alcohol use practices were evaluated (Heath and Martin, 1991; Heath, 1991). First, men were asked if they ever drank alcohol, then if they drank alcohol in the past year. Men replied 'yes' or 'no'. They were then asked where they drink and what they drink. They were also asked if they drink before going out, if they pay for their own drinks, if they buy drinks for men that they want to have sex with, or if men who want to have sex with them buy them drinks. Men replied on 5-point scales (e.g., "Never" (0) – "Always" (4)). Hazardous drinking was evaluated using the Alcohol Use Disorders Identification Test – Consumption (AUDIT-C), (Bohn et al., 1995; Saunders et al., 1993), a scale developed and validated by the World Health Organization for international use, including in South Africa (Bohn et al., 1995; Myer et al., 2008; Saunders et al., 1993), where it has been used in multiple studies (Jewkes et al., 2006; Peltzer et al., 2011; Peltzer et al., 2006). The AUDIT-C uses 3 items: how often the respondent drinks, how many drinks the respondent consumes in a typical day of drinking, and how frequently the respondent drinks six or more drinks at a time. Of a maximum score of 12 on the AUDIT-C, a score of four or more indicates hazardous drinking for men (Bush et al., 1998). Drug use practices were measured by asking men if they had ever used marijuana, poppers, cocaine, opiates, hallucinogens, amphetamines, and other club drugs. If they replied yes to any of these, they were asked if they had used them in the past year.

The survey also measured demographic characteristics (age, education, income, residence), psychosocial factors and behavioral attributes. Men's reasons for drinking were assessed using eleven items (Golding et al., 1992), representing three domains: drinking for a positive affect ($\alpha = 0.87$), drinking to cope with negative affect ($\alpha = 0.91$) and drinking to enhance social interactions ($\alpha = 0.80$); (overall $\alpha = 0.95$). A sample item on the drinking to enhance social

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