Full length article

Impact of alcohol use on sexual behavior among men who have sex with men and transgender women in Lima, Peru

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ABSTRACT

Background: Alcohol use disorders (AUDs) may enhance the likelihood of risky sexual behaviors and the acquisition of sexually transmitted infections (STIs). Associations between AUDs with condomless anal intercourse (CAI) and STI/HIV prevalence were assessed among men who have sex with men (MSM) and transgender women (TW) in Lima, Peru.
Methods: MSM and TW were eligible to participate based on a set of inclusion criteria which characterized them as high-risk. Participants completed a bio-behavioral survey. An AUDIT score ≥ 8 determined AUD presence. Recent STI diagnosis included rectal gonorrhea/chlamydia, syphilis, and/or new HIV infection within 6 months. Prevalence ratios (PR) were calculated using Poisson regression.
Results: Among 312 MSM and 89 TW, 45% (181/401) had an AUD. Among those with an AUD, 164 (91%) were hazardous/harmful drinkers, and 17 (9%) had alcohol dependence. Higher CAI was reported by participants with an AUD vs. without, (82% vs. 72% albeit not significant). Reporting anal sex in two or more risky venues was associated with screening AUD positive vs. not (24% vs. 15%, $p = 0.001$). There was no difference in recent STI/HIV prevalence by AUD status (32% overall). In multivariable analysis, screening AUD positive was not associated with CAI or recent STI/HIV infection.
Conclusions: In our sample AUDs were not associated with CAI or new HIV infection/recent STI. However higher prevalence of CAI, alcohol use at last sex, and anal sex in risky venues among those with AUDs suggests that interventions to reduce the harms of alcohol should be aimed toward specific contexts.

1. Introduction

Although the countries of Central and South America have a relatively low adult human immunodeficiency virus (HIV) infection prevalence among the general population, estimated to be 0.4% (UNAIDS, 2012), in Peru concentrated epidemics persist among gender and sexual minorities with the HIV prevalence among men who have sex with men (MSM) and transgender women (TW) estimated to be as high as 10% and 30%, respectively (Cáceres and Mendoza, 2009; Silva-Santisteban et al., 2012; Carcamo et al., 2003). HIV infection and other sexually transmitted infections (STIs) exist as "syndemics," synergistically contributing to an excess disease burden in these key populations (CDC, 2002). Concurrent STIs such as syphilis, gonorrhea, and chlamydia have been proven to facilitate HIV transmission while HIV also complicates these infections (Fleming and Wasserheit, 1999). Myriad high-risk behaviors including condomless anal intercourse lead to HIV/STI acquisition. The predisposition to engage in sexual risk behaviors (Newcomb et al., 2010) is associated with psychosocial factors such as substance abuse (Koblin et al., 2006; Stall and Purcell, 2000), depression (Alvy et al., 2011), anxiety (Rosario et al., 2006), history of childhood sexual abuse (Paul et al., 2001), self-efficacy, prejudice, stigma and social inequality (Meyer et al., 2011).

A recent systematic review in Latin America, identified several studies in which alcohol consumption was significantly associated with high-risk sexual behavior across various populations (Vagenas

et al., 2013). Yet regional prevention services neglect alcohol consumption as a modifiable risk factor meriting intervention. As a psychogenic substance, alcohol leads to disinhibition, decreased risk perception, impaired decision making, and diminished capacity to negotiate condom use (Rehm et al., 2012; Kalichman et al., 2007a; Gálvez-Buccollini et al., 2009). The need to address alcohol use to provide comprehensive HIV/STI preventive care is substantiated by the global literature, including support of an overall association between problematic alcohol consumption and both STIs and HIV incidence (Baliunas et al., 2010; Cook and Clark, 2005). A meta-analysis of African studies observed a significant relationship between alcohol and HIV wherein drinkers had a 70% greater chance of being HIV positive than non-drinkers (Fisher et al., 2007). However, there is a lack of prospective longitudinal studies that could demonstrate causality between alcohol use and HIV/STI incidence in Latin America. Project EXPLORE (Koblin et al., 2006), for example, longitudinally followed 4,000 HIV-negative MSM in the United States, and found that the use of alcohol or drugs before sex and heavy alcohol use in the last 6 months were independent predictors of seroconversion accounting for 29% and 6% of new HIV infections, respectively.

The relationship between problem alcohol use and HIV/STI prevalence needs further study. According to the 2010 World Health Organization Global Status Report on Alcohol and Health, the prevalence of alcohol use disorders among males over the age of 15 years in Peru was 12.2% (WHO Country Profiles, 2014). Yet among samples of MSM and TW in Peru the prevalence of alcohol use disorders is 55–63% (Ludford et al., 2013; Vagenas et al., 2014). An event-level study in Peru found alcohol consumption prior to sex was associated with unprotected sex and at least one STI (Maguiña et al., 2013). While studies in Peru seem to agree that alcohol use is associated with condomless or risky sex, more global measures of problem alcohol use (such as the AUDIT and the CAGE questionnaire) have yielded inconsistent results with regard to the association between alcohol use and STI prevalence (Ludford et al., 2013; Deiss et al., 2013a). Therefore further information is needed to clarify the relationship between alcohol use and HIV/STI prevalence in this context.

Based on the known psychoactive effects alcohol has on judgment and reasoning in conjunction with the positive associations previously reported in international and Peruvian studies, we hypothesized that alcohol use disorders (AUDs) would be associated with higher baseline prevalence of both condomless anal intercourse in the last 3 months and new HIV infection/recent STI diagnosis.

2. Methods

2.1. Study design

To test our hypothesis, we utilized data from an ongoing cohort study of sexual risk behaviors and HIV/STI prevalence among MSM and TW in Lima, Peru (Deiss et al., 2013b). The Picasso study is an NIH-funded study of 401 MSM and TW recruited in clinics located in the districts of Callao and Barranco. Although only 2 clinics were used for recruitment, participants hailed from 35 out of Lima's 49 districts. Baseline enrollment occurred from May, 2013–May, 2014 and the projected end date is July 2016. Given the study inclusion criteria (Section 2.2), it is worth noting that this is a high-risk sample. The overall aim of this cohort study is to elucidate patterns of syphilis and HIV infection among populations at the greatest risk for these overlapping epidemics. At each visit the participants completed an interviewer-administered survey in Spanish that collected an array of socio-demographic and behavioral information. Biologic specimens were collected for syphilis, HIV, and rectal gon-

orrhea/chlamydia testing. We used cross-sectional, baseline data from this cohort for analysis.

2.2. Study population

MSM and TW were recruited from specialized health clinics that provide enhanced STI prevention and treatment services to these key populations. Enrollment eligibility was limited to individuals assigned male sex at birth and ≥18 years of age. The inclusion criteria required that participants fulfill at least 3 of the following: (i) sexually active for more than 5 years, (ii) a positive syphilis test in the last 2 years, (iii) a positive HIV test, (iv) more than 5 sexual partners in last 3 months, (v) STI diagnosis in last 6 months, (vi) current STI symptoms, or (vii) more than 5 episodes of condomless anal intercourse in the last 6 months.

2.3. Exposure variable

2.3.1. Alcohol use disorders. We used the Alcohol Use Disorder Identification Tool (AUDIT) which is a 10-item screening questionnaire intended to detect a broad spectrum of AUDs allowing for early intervention (Saunders et al., 1993). Validated by the World Health Organization, items in the AUDIT cover 3 conceptually distinct domains: intake/consumption, adverse consequences of alcohol use, and dependence behavior in the last year. An AUDIT score ≥8 determines the presence of an alcohol use disorder. A score of 8–15 denotes hazardous alcohol use (use that poses high-risk of future damage to physical or mental health) while a score of 16–19 denotes the harmful category (reflects alcohol use already resulting in damage). A score of 20 or more is indicative of dependence (a combination of behavioral, cognitive, and physiologic processes that can develop after repeated alcohol use). The AUDIT for our sample had an alpha of 0.78, showing good internal consistency.

2.4. Independent variables

2.4.1. Demographic information.. Age was calculated based on participant response to a write-in birth date. Education was ascertained by asking participants to identify their level of education from "completed primary school or less," to "postgraduate studies." Information regarding participants' socioeconomic status was based on how many months in the last year they ran out of money to cover water, food, or housing. Gender identity was obtained by asking participants if they identified themselves as transgender using locally appropriate terms. HIV infection status knowledge was assessed by asking "what was the result of your most recent HIV test?" Those who responded "HIV positive" were considered known positive for the analysis.

2.4.2. Risky sexual behavior. The interviewer-administered behavioral survey assessed self-reported high-risk sexual behaviors such as number of sex partners in the last 3 months (which was entered by the interviewer as a free text numerical response), types of sex partners (casual, friends with benefits, stable, anonymous, etc.), types of sex (anal, oral), substance use at last sex (by either the participant or the participant's partner), and types of condomless sex (insertive or receptive oral vs. anal sex). Participants were also asked if in the last 3 months they had anal sex in any of the following venues types: discos, saunas, hostels, hair salons, or public places. The specific venue types which comprised the answer choices were selected from an ethnographic mapping study with Peruvian MSM and TW populations (Clark et al., 2014). No assessment of frequency was obtained for this measure.