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Factors associated with drinking alcohol before visiting female sex workers among men in Sichuan Province, China

Cui Yang¹, Carl Latkin¹, Rongsheng Luan², and Kenrad Nelson³

¹Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

²Department of Epidemiology, West China School of Public Health, Sichuan University, Chengdu, China

³Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Abstract

Alcohol use in commercial sex is highly prevalent globally and alcohol use in conjunction with sexual activity might increase the probability of risky behaviors, and. In the current study, we explored individual and contextual factors associated with drinking alcohol before visiting female sex workers (FSWs) among 560 male clients in Sichuan province, China. A cross-sectional survey was conducted in Sichuan province, China. Over one-fifth (21.1%) of the participants reported always using alcohol before having sex with FSWs. As compared to those who reported not always drinking alcohol before having sex with FSWs, male clients who reported always drinking alcohol before having sex with FSWs had higher income, were more likely to have main sex partners, to drink alcohol daily, to report minor depressive symptoms and were more likely to visit FSWs with friends rather than by themselves. Results from this study highlight the importance of addressing alcohol use among men who pay for sex in China. Future interventions should promote alcohol-related norms in reducing the harms associated with consuming alcohol.

Keywords

alcohol use; risky sexual behaviors; commercial sex; HIV; China

Background

Alcohol use is associated with a range of medical conditions such as heart disease, psychiatric illnesses, and injury [1-4]. Systematic reviews have found consistent associations of alcohol use with risky sexual behaviors, which place individuals at risk for HIV and other sexually transmitted infections [5]. Studies of alcohol's role in the transmission of HIV are of particular relevance in countries battling with HIV epidemic and with widely available alcohol and drinking norms that encourage hazardous use. Heterosexual intercourse has

become the major transmission mode of HIV infections in China in recent years. In 2009, 42.2% of 48,000 HIV new cases were infected through heterosexual contact [6]. Research that explored alcohol use and its associations with sexual risk in China have not been widely reported [7].

Alcohol use is widely prevalent in China. A recent analysis of data from the China Chronic Disease and Risk Factor Surveillance of 49,527 respondents aged between 15-69 show the prevalence of male and female current drinking was 55.6% and 15.0% respectively. Among the current drinkers, proportions of excessive drinking, frequent drinking and binge drinking were 62.7%, 26.3%, 57.3% for men and 51.0%, 7.8%, 26.6% for women, respectively [8]. Moreover, the Chinese cultural norms particularly encourage social drinking, and the custom of toasting (i.e. urging one another to drink) is perceived as a way to maintain good relations with friends, colleagues, and business associates [9]. This custom may also lead to binge drinking as it is perceived to as impolite to cease toasting based on amount of alcohol consumed.

Studies of alcohol use during a specific event and its association with sexual risk behaviors during that event have reported mixed findings [10-12]. One of the explanations for such discrepancies is that the effects of alcohol use on sexual risk may vary according to characteristics of the individuals involved (e.g., type of partners), the context in which alcohol use (e.g. bar, party, or residence) and sex took place (e.g. use immediately before sex, with sex partner) and the consumption pattern (e.g., amount of alcohol consumed with a given period) [13-16]. Use of alcohol before sex has been found as a risk factor for HIV and other STIs. For example, research in Rakai, Uganda found that use of alcohol before sex increased risk of acquiring HIV by 50 percent in a study of more than 14,000 men and women [17].

Given the complex association between alcohol consumption and sexual behavior, there is a need to understand the social contexts of drinking [18]. In the context of commercial sex, alcohol use is highly prevalent globally among both male clients and female sex workers (FSWs). Studies in both Africa [19] and Asia [20-22] have found that alcohol use among FSWs or their clients is associated with increased HIV risk. A recent integrative review of 76 studies of alcohol consumption by FSWs or male clients found that 19-76.5% of FSWs used alcohol prior to and during sex, and 14-88% of male clients purchased sex services under the influence of alcohol [7].

There has been a wide spread of commercial sex industry in China since 1980s. In a sample of 454 establishment-based FSWs in China, about 30% reported using alcohol before having sex with clients, which was significantly associated with less consistent condom use and higher rates of both current STIs and a history of STIs [23]. Yet there is a dearth of research examining social environmental influences on alcohol use among men who pay for sex, who are at disproportionately high risk for HIV/STIs. According to in-depth interviews with 41 men who pay for sex in Sichuan province, China, commercial sex visits were often a group activity, starting in the evening with social eating, drinking, and game playing (*Majiang*), and ending with a visit to a commercial sex establishment in a small group of male friends.

Alcohol consumption was one of the most consistent predisposing factors before having sex with FSWs among male clients across different socioeconomic backgrounds [24].

A better understanding of determinants associated with drinking alcohol before having sex with FSWs will inform future interventions to the control and prevention of HIV/STI epidemics among men who pay for sex. In the current study, we examined the role of both individual level factors and social context of commercial visits related to drinking alcohol before visiting FSWs. We hypothesized that after adjusting for individual level factors, visiting FSWs with friends would be associated with drinking alcohol before paying for sex.

Method

Procedures and Study Participants

From October to November 2008, a cross-sectional survey was conducted in three cities in Sichuan province, Xichang, Zigong, and Leshan. Sichuan province is located in the southwest of China. It is the third most populous province in China with a population of 87.25 million in 2004 [25]. There were 19,375 HIV cases reported in Sichuan by 2008, which ranked the 6th among all provinces/autonomous regions in China [26]. Injecting drug use dominated the HIV epidemic in Sichuan, accounting for 75.6% of HIV infection. In recent years, risky sexual activity has increasingly contributed to HIV infection and transmission in Sichuan province [27].

Participant selection criteria included (1) males; (2) ages 18 years and older; and (3) who have had given money or valuable gifts in exchange for sexual intercourse at least once in the last 12 months. Participants were recruited by the local department of health through snow ball sampling [28]. After eligibility was determined and an oral informed consent was administered, participant completed a 30 minute face-to-face interview with a trained Chinese interviewer. All participants were paid 50 *yuan* (approximately 7 USD) for the participation. The research protocols were reviewed and approved by the Institutional Review Boards at Johns Hopkins Bloomberg School of Public Health and Sichuan University.

Measures

Alcohol use Global assessment of frequency of alcohol use before visiting FSWs was evaluated by asking participants “In general, how frequent do you drink alcohol before visiting FSWs?” on a 5-point scale “always,” “most of time,” “half of time,” “occasionally,” and “never.” The primary outcome “always drinking alcohol before visiting FSW” was created by dichotomizing the response “always” versus “most of time,” “half of time,” “occasionally” and “never.”

Frequency of alcohol use during the past 3 months was assessed on a 5-point scale of “every day,” “once a week,” “once a month,” “less than once a month” and “never.” A binary variable for daily alcohol drinkers was constructed for those who drank alcohol “every day.”

Depressive symptoms were measured by the Patient Health Questionnaire–9 (PHQ-9), a criteria-based instrument for screening for mood, anxiety, and other psychiatric disorders.

The PHQ-9 consists of 1 item for each of the 9 criteria upon which the diagnosis of DSM-IV major depressive disorder are based. Because it is shorter than other depression rating scales and has been well validated in a variety of population, the PHQ-9 has gained increased recognition as the preferred instrument for researching depression screenings in non-medical settings[29]. The PHQ-9 asked the participants to report the frequency of, from “not at all” to “nearly every day,” they have been bothered by 9 issues during the past 2 weeks, such as “little interest or pleasure in doing things,” “feeling down, depressed, or hopeless,” “trouble falling sleep, staying asleep, or sleeping too much,” “feeling tired or having little energy.” The scale had strong internal consistency, with Cronbach's alpha of 0.85 in this sample of participants. A composite score for depression was calculated by adding responses from these 9 items, with a range from 0 to 26. A binary variable for minor and severe depression was dichotomized at 5 and 20 respectively[30].

Pattern of commercial sex visit was assessed by asking participants if they usually visited commercial sex alone or with friends.

Condom use with FSWs An overall rate of consistent condom use with FSWs was used a global measure of male clients' sexual risk behavior. Participants were asked about the overall frequency of condom use when having sex with FSWs, on a 5-point scale from “every time”, “most of the time”, “half of the time”, “rarely” and “never.” This response was dichotomized so that “consistent condom use” indicated using condoms “every time” when having sex with FSWs.

Illicit substance use was assessed by asking participants if they have used club drugs, snorted heroin or injected heroin during the past 6 months.

Individual sociodemographic characteristics included data on age, whether having local household registration, monthly income, education level (i.e., illiterate, primary school, junior high school, senior high/professional school, college or above), current marital status and relationship status were collected.

Data Analysis

Frequency distributions were calculated to examine the distribution of the variables and to generate a profile of this sample of male clients. The outcome of interest was always using alcohol before having sex with FSWs, which was dichotomized as yes or no. Bivariate logistic regression was used to assess the relationship between independent variables and the outcome variable. Independent variables with p value less than .05 were included in the multivariate logistic regression models. Since the sample was recruited by the local department of health from each study site, General Estimating Equation (GEE) was employed to account for variance within and between study sites [31]. Data were analyzed by using Stata 10.0(College Station, TX, USA).

Results

A sample of 560 male clients of FSWs was included in the analysis. Over one-third participants (34.6%) reported drinking daily during the past 3 months, 20.5% drank weekly,

6.8% drank once a month, 13.9% drank less than once a month and 24.1% never drank during the past 3 months. Over half of participants (54.5%) reported drinking alcohol before having sex with FSWs and over one-fifth (21.1%) of participants reported always using alcohol before having sex with FSWs. The overall prevalence of consistent condom use with FSWs was 31.3%. Consistent condom use with FSWs was negatively associated with always drinking alcohol before having sex with FSWs (Odds Ratio [OR]: 0.69, 95% CI [Confidence Interval]: 0.62, 0.78).

Table 1 presents the characteristics of 560 male clients of FSWs and results of bivariate and multivariate logistic regression model. As compared to those who did not always drink alcohol before having sex with FSWs, male clients who reported always drinking alcohol before having sex with FSWs had higher income (Adjusted Odds Ratio [AOR]: 1.33, 95% CI: 1.00, 1.78), and were more likely to have main sex partners (AOR: 1.53, 95% CI: 1.23, 1.89) and to drink alcohol daily (AOR: 4.47, 95% CI: 3.45, 5.79). In addition, male clients who always drank alcohol before having sex with FSWs were more likely to report minor depressive symptoms (AOR: 2.41, 95% CI: 1.53, 3.78) and were more likely to visit FSWs with friends rather than by themselves (AOR: 2.74, 95% CI: 1.19, 6.35).

Conclusion

In this sample of men who pay for sex in Sichuan province, China, we found that alcohol use before visiting FSWs was very common and it was associated with risky sexual behaviors during commercial sex visit. Higher income, having main sex partners, daily alcohol drinkers and minor depression were independently associated with always drinking alcohol before visiting FSWs. Participants who visited FSWs with friends were more likely to always drink alcohol before paying for sex. Given the Chinese cultural norms of social drinking and the custom of toasting, the context of men who go to FSWs in groups may provide more opportunities for alcohol consumption.

This study has several limitations. The face-to-face assessment of commercial sex experience may have the potential for heightened social desirability response bias. The cross-sectional data limit our ability to draw causal inferences. We do not know the casual pathways. Drinking and then frequenting FSWs in groups may be facilitated by the effects of alcohol. Alternatively, individuals who are more likely to drink in groups may also be more likely to frequent FSWs. It is also plausible that drinking and then going to FSWs is a set of culturally intertwined social behaviors. More studies are needed to understand the social contexts of drinking and cultural meanings associated with group drinking, and to identify potential factors that mediate or moderate the relationship between alcohol use and sexual risk behaviors. We used the overall rate of consistent condom use with FSWs as a global measure of male clients' sexual risk behavior. Future studies should study the event-level association between alcohol use and risky sexual behaviors, which ensures that alcohol use and condom use occurred on the same occasion, thus strengthening causal inferences. It also minimizes response biases. We only assessed the frequency of alcohol use among the participants in the current study. More comprehensive assessment of alcohol use, including alcohol dependence and alcohol abuse, are needed. Finally, we used the snow ball sampling to recruit the male clients, which may include more participants with larger personal

networks. Therefore, the findings of the current have limited generalizability [32]. One recognizable research and intervention limitation in targeting hidden populations, such as CSMCs, is no sampling frame exists [33]. While standard probability sampling methods may not be feasible to recruit CSMCs, future studies should consider alternative sampling strategies, such as the respondent-driven sampling strategy, which have been shown to have greater external validity among hidden populations [34-36].

Results from this study highlight the importance of addressing alcohol use among men who pay for sex in China. Future intervention efforts should focus on reducing the harms associated with consuming alcohol and the potential effect that alcohol use has on riskier sex, especially among male daily drinkers who also pay for sex. The social nature of alcohol consumption and frequenting FSWs with friends suggest that a socially oriented intervention, such as peer education, may be a viable approach to HIV prevention in this population. Social influence and social learning theories suggests that referent groups may influence members' alcohol-related behaviors through processes of modeling and compliance to group alcohol consumption norms. In the context of drinking in groups in locations such as wine shops or bars, trained peer educators can deliver risk-reduction messages on alcohol consumption and sexual behaviors. Those messages are more salient and relevant, which creates ideal opportunity to promote the social norms associated with reduction of alcohol use and risky sexual behaviors. Given the cultural norms of social drinking and toasting, group norms of limiting alcohol use before going to FSWs should be encouraged. Additionally, it may be valuable for programs to address depressive symptoms among participants and explore the extent to which depression may challenge risk reduction efforts.

In summary, this study indicates that drinking alcohol before commercial sex visits is a common practice among men who pay for sex in China. Understanding the social context that influences alcohol consumption before commercial sex visit provides implications for future interventions that address both alcohol use and HIV risk behaviors in the context of commercial sex. There is a need for more research on co-occurrence of alcohol consumption and risky sexual behaviors, in order to develop evidence-based interventions that can control and prevent of HIV/STI epidemics among at-risk populations.

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Table 1
Sample characteristics and unadjusted and adjusted analyses of always drinking before commercial sex visits

	Total (n=560)	Not always drinking before commercial sex visits (n=442)	Always drinking before commercial sex visits (n=118)	Unadjusted OR (95%CI)	Adjusted OR (95%CI)
Age: mean (SD)	37(9.87)			1.02(1.00,1.04)*	1.02(0.99,1.04)
Having local household registration					
No	48(8.6)	39(8.8)	9(7.6)		
Yes	512(91.4)	403(91.2)	109(92.4)	1.17(0.55,2.50)	---
Monthly income					
<1000 yuan	214(38.2)	177(40.1)	37(31.4)		
>=1000 yuan	346(61.8)	265(59.9)	81(68.6)	1.46(1.20,1.78)***	1.33(1.00,1.78)*
Education					
Less than senior high school	439(78.4)	349(79.0)	90(76.3)		
At least senior high school	121(21.6)	93(21.)	28(23.7)	1.17(0.63,2.15)	---
Marital status					
Not married	227(40.5)	183(41.4)	44(37.3)		
Married	333(59.5)	259(58.6)	74(62.7)	1.19(0.80,1.77)	---
Having main partner					
No	90(16.1)	77(17.4)	13(11.0)		
Yes	470(83.9)	365(82.6)	105(89.0)	1.70(1.23,2.35)**	1.53(1.23,1.89)***
Minor depressive symptom					
No	489(87.3)	391(88.5)	98(83.0)		
Yes	71(12.7)	51(11.5)	20(17.0)	1.56(1.10,2.23)*	2.41(1.53,3.78)***
Major depressive symptom					
No	529(94.5)	418(94.6)	111(94.1)		
Yes	31(5.5)	24(5.4)	7(5.9)	1.10(0.33,3.63)	---
Drinking daily in the past 3 months					

	Total (n=560)	Not always drinking before commercial sex visits (n=442)	Always drinking before commercial sex visits (n=118)	Unadjusted OR (95%CI)	Adjusted OR (95%CI)
No	336(65.4)	320(72.4)	46(39.0)		
Yes	194(34.6)	122(27.6)	72(61.0)	4.11(3.63,4.64)***	4.47(3.45,5.79)***
Using club drugs in the past 6 months					
No	500(89.3)	394(89.1)	106(89.8)		---
Yes	60(10.7)	48(10.9)	12(10.2)	0.93(0.36,2.42)	
Snorting heroin in the past 6 months					
No	518(92.5)	407(92.1)	111(94.1)		---
Yes	42(7.5)	35(7.9)	7(5.9)	0.73(0.39,1.38)	
Injecting heroin in the past 6 months					
No	515(92.0)	407(92.1)	108(91.5)		---
Yes	45(8.0)	35(7.9)	10(8.5)	1.08(0.53,2.20)	
Forms of commercial sex visit					
Individual	191(34.1)	165(37.3)	26(22.0)		
Group	369(65.9)	277(62.7)	92(78.0)	2.11(1.19,3.71)*	2.74(1.19,6.35)*

* p<.05,

**

p<.01,

*** p<.001