

Tobacco and Alcohol Use among a Sample of Men who have Sex with Men in Lagos state, Nigeria

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Abstract

Background: Research in other parts of the world has shows that men who have sex with men (MSM) may have higher rates of alcohol and tobacco use than the general population of men. Little is known about the pattern of tobacco and alcohol use among MSM in Nigeria. **Aim:** This study set out to assess the pattern of tobacco and alcohol use and to determine the factors associated with their use among a sample of MSM. **Subjects and Methods:** This cross-sectional descriptive study was carried out among 320 MSM. For the purpose of this study, we collaborated with an MSM-led registered Non-governmental organization (NGO) that works closely with the state and developmental partners to provide health programs exclusively for MSM in Lagos State. Data were collected using a pretested interviewer administered survey. MSM were recruited using a non-probability sampling technique (Snow ball sampling). Data analysis was carried out using Epi info version 3.5.3 and SPSS 17.0. **Results:** Up to 22.2% (71/320) were ever-smokers with 15.4% (49/320) remaining as current smokers. Among current smokers more than half of the men smoked daily and 36.7% (27/49) were heavy smokers (smoked more than 10 sticks per day). About one in three, 34.1% (109/320) currently drank alcohol with majority having their most recent drink less than a week before the study. Using the CAGE assessment for alcohol dependence, almost half of the current drinkers had a drinking problem. Respondents who used marijuana and those whose partners smoked were more likely to be current smokers. Current smokers, marijuana users and those whose partners consumed alcohol were more likely to have a drinking problem. **Conclusion:** Both tobacco and alcohol use is common among this sample of MSM. Efforts to address these issues should be given priority when planning health care programs targeted at MSM.

Keywords: Men who have sex with men, Alcohol, Tobacco

Introduction

Globally, tobacco use is the most preventable cause of death, killing around 6 million people a year ^[1]. Tobacco use is a risk factor for six of the eight leading causes of death globally ^[1]. Nearly 80% of the more than one billion smokers worldwide live in low and middle-income countries, where the burden of tobacco-related illness and death is heaviest ^[1].

Worldwide 5.9% of all deaths and 5.1% of the global burden of disease and injury is attributable to alcohol use ^[2]. Alcohol consumption is a causal factor in more than 200 disease and injury conditions. Alcohol is associated with a risk of developing health problems such as mental and behavioural disorders, including alcohol dependence, major non-communicable diseases such as liver cirrhosis, some cancers and cardiovascular diseases, as well as injuries resulting from violence and road clashes and collisions ^[2].

Beyond health consequences, both tobacco use and the harmful use of alcohol bring significant social and economic losses to individuals and society at large. Sub-Saharan Africa faces a double burden of disease, with HIV/AIDS, malaria and diarrhoeal diseases still being the leading causes of death, and

several factors, including large population sizes, increasing urbanization and increased exposure to lifestyle risk factors contribute to an increasing frequency of non-communicable diseases ^[3,4].

In Nigeria, both alcohol and tobacco are used predominantly among men ^[5-7]. The population-based prevalence of tobacco use among Nigerian men is 10% compared with 1.1% among women ^[5]. According to the World health organization (WHO), the proportion of high-risk and heavy episodic drinkers was 3.1% and 4.6% among men compared with 0.5% and 0.3% among women ^[7]. While these rates of consumption may appear relatively low when compared with estimates from more developed countries, these figures may not be equally distributed across various sub-populations of Nigerian men.

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In virtually every country of the world, there are men who have sex with men (MSM) [8]. Although prevalence data is still scarce in many African countries including Nigeria. One study attempting to estimate the number of MSM sex workers in three Nigerian cities concluded that a large population of MSM exist. [9]. Because of their sexual orientation, men who have sex with men are a vulnerable population in Africa where many countries are homophobic. [8]. MSM in Africa often experience criminalization of same sex practices, isolation, stigma and marginalization [8,10,-12]. These factors have been shown to create barriers to accessing healthcare services among these men [10,11]. In 2014, Nigeria passed a national same sex bill, criminalizing homosexuality in the country. There is evidence that MSM in Nigeria may experience higher levels of stress or depression related to family rejection and traumatic forms of emotional abuse, discrimination, challenges in eliciting social support and other stresses as a result of their gender identity and sexual orientation [10,11]. One study reports that a third of MSM in Nigeria experience internalized homophobia [12]. This may be linked with poor mental health including a possible tendency to substance use. Alcohol and tobacco use among MSM may be a reaction to homophobia, discrimination, or violence they experienced due to their sexual orientation and can contribute to other mental health and physical problems [10-13]. This may disrupt their relationships, employment, and threaten their financial stability.

Men who have sex with men may be disproportionately affected by health problems associated with or worsened by alcohol and/or tobacco use. For example, MSM are at a higher risk of HIV/AIDS and the prevalence of HIV is higher among MSM than in the general population in many countries [14,15]. In Nigeria, 17.2% of MSM were living with HIV in 2010 compared with the national prevalence of 4.1% [16]. Smoking reduces the health-related quality of life increases the likelihood of bacterial pneumonia and other AIDS-defining illnesses, malignancies and increases overall mortality among HIV-infected persons [17,18]. Additionally, tobacco smoking is associated with development of anal cancer which occurs more frequently among MSM [19,20]. Similarly, studies have shown that, when compared with the general population, gay and bisexual men, lesbian, and transgender individuals are more likely to use alcohol, have higher rates of abuse and continue heavy drinking into later life. Behaviours associated with smoking, such as alcohol and drug use may be higher among MSM [21-23]. Men who drink alcohol may also raise their chances of acquiring HIV or passing it on to others by getting involved in more risky sexual practices [23]. Furthermore, It has been documented that in developed countries, the tobacco industry has targeted the gay market placing these men at a higher risk of tobacco use [23,24].

Research in the developed countries has found a higher likelihood of alcohol and tobacco use among MSM compared with the general population [25-27]. Studies have also been conducted among MSM in developing countries like China and India [28,29]. However, research on alcohol and tobacco use among MSM in African countries is lacking. Furthermore, studies on alcohol and tobacco use in Nigeria have largely focused on the general population of men and women, young people and occasionally high-risk groups like female sex workers in Nigeria. [30-33]. No

studies to date have investigated the pattern and correlates of tobacco and alcohol use among an exclusively MSM sample. Our objectives were:

1. To assess the pattern of tobacco use, willingness to quit smoking and quit attempts among a sample of MSM.
2. To assess their pattern of alcohol use and to determine the prevalence of alcohol drinking among the men.
3. To determine the factors associated with cigarette smoking and alcohol drinking among this sample of men who have sex with men.

Subjects and Methods

Study background

Lagos state is the commercial capital and economic nerve centre of Nigeria, the most populous country in Africa. For the purpose of this study, we collaborated with an MSM-led registered Non-governmental organization (NGO), The Initiative for Equal Rights (TIERS). The NGO works closely with the state and developmental partners to provide health programs exclusively for MSM in Lagos State. They provided outreach health services to 250 - 350 MSMs on a monthly basis and covered eight out of the twenty local government areas in the state.

Study design, sample size estimation and sampling technique.

We carried out a cross-sectional descriptive study. We calculated the minimum sample size for the study using the standard formula for the calculation of sample size for descriptive studies [34]. We used prevalence estimates of tobacco [35]. (94) for alcohol use [29]. (307) from previous studies and selected the one with the higher value. We rounded this number off to account for possible non-responses bringing the final sample size to 320. A snowball sampling method was used to select the MSM to be interviewed. The eight coordinators in TIERS (all of them were MSM) were recruited as data collectors and were trained on the objectives of the study and the information to be collected. Each coordinator recruited 10 MSMs for the study weekly. Respondents were interviewed during the process of the coordinators performing their daily functions (visits to hotspots, peers at home, gay clubs, private residents, parties and community center's) in eight local government areas. The respondents were not required to leave their base hence coupon and incentives were not used. The data collectors did not visit the same hotspot twice during the period of data collection. Respondents were only interviewed once, participation in the study was voluntary and all the information collected was treated with confidentiality. The study was carried out over a 4-week period in July, 2013. The MSM were considered eligible for participation in the study if they were men, self-identified as MSM, and had had sex with another man at least once in the last twelve months preceding the study.

Data collection and analysis

Information was collected from eligible and consenting MSM using a pre-tested interviewer-administered questionnaire after a review of relevant literature. [5,7,28,29,36,37]. The questionnaire had three major aspects capturing information on their socio-demographic data, patterns of alcohol and tobacco use. The socio-demographic variables included respondents' age,

marital status, religion, ethnicity, highest level of education and employment status. The pattern of cigarette smoking and alcohol use were assessed using a modified version of the WHO STEPS questionnaire. In addition, we collected information on the use of other forms of tobacco and respondents' willingness to quit smoking. To assess whether the level of alcohol consumption was higher than values considered normal as well as the degree of drinking among the sample, we used the CAGE assessment of alcohol dependence.³⁷ Respondents who had a CAGE score of >2 are considered to be problem drinkers.³⁷ We also collected information on history of alcohol intoxication, alcohol use just before or during sexual intercourse and willingness to quit or reduce drinking.

Ethical approval for the study was obtained from the Research and Ethics Committee of Lagos University Teaching Hospital. Permission was also obtained from coordinator of TIER's.

Data analysis was carried out using Epi info version 3.5.3 (Atlanta, USA) and SPSS 17.0 (Chicago, USA) and presented as means (SD) and frequency tables as appropriate. We used two distinct outcome variables; current smoking and problem drinking. To determine the factors associated with these two outcome variables among the respondents, we initially conducted a bivariate analyses for each of the outcome variables and the variables that were significant were inputted into a multivariate model, after checking for homoscedascity and multi-collinearity of the variables. P values of < 0.05 were considered to be statistically significant.

Results

Table 1 shows that majority, 79%, (252/320) of the respondents were less than 30 years of age with a mean age of 26.3±4.8 years. Respondents were mostly single, 83.8% (268/320) and had at least a secondary level of education, 97.6% (312/320).

More than one in five had ever used tobacco products with 15.4% (49/320) of them remaining as current smokers. Cigarette smoking was initiated mostly after the age of 18 years. Among current smokers more than half of the men smoked daily and 36.7% (27/49) were heavy smokers (smoked more than 10 sticks per day (Table 2).

Only 23 (7.2%) men used other forms of non-cigarette smoked tobacco products, primarily cigars, 6%, (19/320) and pipes, 1.3% (4/320). Thirty respondents (9.4%) used smokeless forms of tobacco, primarily hand rolled forms, 3.8%, (12/320), chewable tobacco, 1.9%, (6/320) and snuff, 1.6% (5/320). Seventeen respondents (5.3%) were dual users of smoked and smokeless forms of tobacco. Majority of the current smokers, 65.3% (32/49) admitted to feeling like smoking first thing in the morning. Almost half, 46.9% (23/49) were willing to quit smoking and many had made at least one unsuccessful attempt at quitting in the past year. Only 32.7% (16/49) had received any assistance with quitting, primarily from family and friends (Table 3).

About one in three, 34.1% (109/320) currently drank alcohol with majority having their most recent drink less than a week before the study. Using the CAGE assessment for alcohol dependence,

Table 1: Socio-demographic characteristics of the respondents

Variables	Frequency (%) (n=320)
Age (years)	
<20	15 (4.7)
20-29	237 (74.3)
30-39	63 (19.7)
≥40	4 (1.3)
Mean age (SD)	26.3 (4.8)
Marital status	
Single	268 (83.8)
Married	49 (15.3)
Divorced/separated	3 (0.9)
Ethnicity	
Hausa	20 (6.3)
Igbo	126 (39.5)
Yoruba	140 (43.9)
Minority ethnic groups	33 (10.3)
Religion	
Christianity	259 (80.9)
Islam	56 (17.5)
Traditional Religion	5 (1.6)
Educational Level	
No formal education	5 (1.6)
Primary	3 (0.9)
Secondary	108 (33.8)
Tertiary	204 (63.8)
Current employment status	
Unemployed	162 (50.6)
Employed	158 (49.4)

Table 2: Cigarette smoking pattern of the respondents

Variables	Freq. (%) (n=320)
Cigarette use	
Current smoker	49 (15.4)
Ex-smoker	22 (6.9)
Never-smoker	249 (77.8)
Age at smoking initiation (n=71)*	
<18 years	24 (33.8)
≥18 years	47 (66.2)
Frequency of smoking (n=49)	
At least daily	27 (55.1)
At least weekly	7 (14.3)
Monthly or less	15 (30.7)
Number of cigarettes consumed in a typical day (n=49)	
1-4 sticks per day	19 (38.8)
5-9 sticks per day	12 (24.5)
>10 sticks per day	18 (36.7)
Current sexual partner smokes	55 (17.2)

almost half of the current drinkers had a drinking problem. A considerable proportion of the men (68.8%, 75/109) admitted to have had a history of alcohol intoxication at least once within the past year. Majority of the current drinkers, 72.5% (79/109) had used alcohol just before or during sexual intercourse. Only

Table 3: Willingness to quit and quit attempts among current smokers

Respondent:	Freq. (%) (n=320)
Has ever felt like smoking first thing in the morning (n=49)	32 (65.3)
Desires to quit smoking now (n=49)	23 (46.9)
Made at least one quit attempt in the past year (n=49)	28 (57.1)
Has ever received advice or help with quitting (n=49)	16 (32.7)
Source of advice received (n=16)	
Family and friends	10 (62.5)
Health care worker	2 (12.5)
Religious leader	1 (6.3)
Non-Governmental Organisation	1 (6.3)
Other* (internet)	1 (6.3)

about a third of the current drinkers were willing to reduce their drinking and 38% had made attempts to do so within the past year. Only 22% (25/109) of current drinkers had received help with their alcohol problem primarily from family and friends (Table 4).

Factors associated with current cigarette smoking were marijuana use and partner smoking. Respondents who used marijuana were 20 times more likely to be current smokers, while those whose partners smoked were 7 times more likely to be current smokers. In the same vein, current smoking, marijuana use and partner drinking status were associated with problem drinking. Current smokers were 13 times more likely to have a drinking problem; Marijuana users were 21 times more likely to have a drinking problem while those whose partners consumed alcohol were 3 times more likely to have a drinking problem (Tables 5 and 6).

Discussion

This is one of the first few studies to assess tobacco and alcohol use in an exclusively MSM sample of Nigerian men and this study provides important information as little is known about tobacco and alcohol use among sexual minorities in Africa. Our findings show that the MSM in our sample smoke at a higher rate than the average for men in the general population in Nigeria [26]. The prevalence of tobacco use was 15.4% (49/320). This is also a lot higher than the rates reported in the general population of Nigerian men [5,6]. Few studies have been carried out in African countries on this subset of the population and this limits possible comparisons in similar African settings, however studies in other developing countries outside Africa, like China and India have also shown high rates of smoking among MSM [28,29]. Our findings are also consistent with those reported in developed countries like the USA. [35,36]. However, the figures reported in these countries are higher than ours probably because the country-level prevalence of smoking is also higher. It is also possible that higher levels of homophobia may occur in less developed countries like Nigeria where homosexuality is often seen as culturally or morally wrong. Additionally, it is known that the tobacco industry has been known to explicitly target the Gay, lesbian and transgendered community in countries like the USA resulting in possibly higher levels of tobacco use.

Table 4: Pattern of alcohol use among the respondents.

Variables	Freq. (%)
Alcohol use	
Current alcohol user	109 (34.1)
Ex-alcohol user	31 (9.7)
Never user	180 (56.2)
Most recent drink (n=109)	
Less than a week ago	75 (68.8)
A week to a month ago	23 (21.1)
More than a month ago	11 (10.1)
CAGE assessment of alcohol dependence (n=109)	
Ever felt you needed to cut down on/reduce your drinking	59 (54.1)
Has anyone ever annoyed you by criticizing your drinking?	37 (33.9)
Have you ever felt bad or guilty after drinking?	42 (38.5)
Ever felt you needed a drink early in the morning?	39 (35.8)
Problem drinker (n=109)	53 (48.6)
Had at least one drunken episode within the past one year (n=109)	75 (68.8)
Ever used alcohol just before or during sexual intercourse (n=109)	79 (72.5)
Willing to quit or reduce drinking (n=109)	38 (34.9)
Attempted to quit or reduce within the past year (n=109)	42 (38.5)
Ever received assistance with drinking	25 (22.9)
Assistance received from: (n=96)	
Professional/Health care worker	5 (20)
Family member/friend	19 (76.0)
Church	1 (4.0)
Sexual partner	1 (4.0)
Current sexual partner drinks alcohol	82 (25.6)

More than half of the men in this sample were daily smokers and one in three were heavy smokers. Smoking reduces the health-related quality of life and is associated with the development of AIDS defining illnesses among MSM who are often considered to be high risk [17-20]. It is pertinent to consider involving MSM in the planning and implementation of tobacco cessation programs.

Cigarette use is the commonest form of tobacco used among our sample and this is consistent with findings in the general population of Nigerian men [5,6]. However, aside from cigarette use, other forms of tobacco use were also relatively high among the respondents. Higher than figures reported in the general population among Nigerian men [5,6]. These findings highlight the need to possibly include the prevention and control of other forms of tobacco when planning smoking cessation programs.

There is abounding evidence that cigarettes and tobacco products are addictive [38]. While many tests have been used to measure nicotine addiction, the desire to smoke cigarettes first thing in the morning is a good single item indicator of nicotine dependence [39]. Many of the current smokers in the study are addicted to nicotine because they admitted to feeling like smoking first thing in the morning.

As with tobacco use, studies in other parts of the world have consistently shown that alcohol use is higher among MSM [22,27,29]. In this study, similar findings were obtained. Using the CAGE assessment of alcohol drinking, we observed that many

Table 5: A bivariate analyses of the factors associated with cigarette smoking and problem drinking

Variables	Current-smoker Freq. (%) n=49	Non-smoker Freq. (%) n=271	p-value	Problem drinker n=53 (%)	Not a problem drinker n=267 (%)	p-value	Total (N=320)
Age group (years)	26.3±3.3	25.7±5.2	0.53	25.9±5.4	26.3±4.7	0.48	
Marital status							
Single	42 (15.7)	226 (84.3)	0.74	44 (16.2)	227 (83.8)	0.71	268 (100)
Married	7 (14.3)	42 (85.7)		9 (18.4)	40 (81.6)		49 (100)
Separated/Divorced	0 (0)	3 (100)		2	0		3 (100)
Level of education							
Primary or less	1 (12.5)	7 (87.5)	0.85	1 (12.5)	7 (87.5)	0.78	8 (100)
Secondary	15 (13.9)	93 (86.1)		16 (14.8)	92 (85.2)		108 (100)
Tertiary	33 (16.2)	171 (83.8)		36 (17.6)	168 (82.4)		204 (100)
Religion							
Christianity	37 (14.3)	222 (85.7)	0.58	43 (16.6)	216 (83.4)	0.33	259 (100)
Islam	11 (19.6)	45 (80.4)		8 (14.3)	48 (85.7)		56 (100)
Traditional religion	1 (20)	4 (80)		2 (40.0)	3 (60.0)		5 (100)
Ethnicity							
Yoruba	23 (16.3)	118 (83.7)	0.98	3 (15.0)	17 (85.0)	0.76	141 (100)
Igbo	18 (14.3)	108 (87.5)		18 (14.3)	108 (85.7)		126 (100)
Hausa	3 (15)	17 (85)		25 (17.7)	116 (82.3)		20 (100)
Other	5 (15.2)	28 (84.8)		7 (21.2)	26 (78.8)		33 (100)
Is currently employed							
Yes	26 (16.5)	132 (83.5)	0.58	31 (19.6)	127 (80.4)	0.15	158 (100)
No	23 (14.2)	139 (85.8)		22 (13.6)	140 (86.4)		162 (100)
Current smoker							
Yes				18 (36.7)	31 (63.3)	<0.001	49 (100)
No				35 (12.9)	236 (87.1)		271 (100)
Marijuana							
Uses marijuana	17 (94.4)	1 (5.6)	<0.001	10 (55.6)	8 (44.4)	0.001	18 (100)
Does not use marijuana	32 (10.6)	270 (89.4)		65 (21.5)	237 (78.5)		302 (100)
Partner's smoking status							
Partner smokes cigarettes	30 (54.5)	25 (45.5)	<0.001				
Partner does not smoke	19 (7.2)	244 (92.8)					
Partner's drinking status							
Partner drinks				23 (28.0)	59 (72.0)	<0.001	55 (100)
Partner does not drink				30 (12.6)	208 (87.4)		263 (100)

*Statistically significant, !Fisher's exact p value

of the men in this study had a drinking problem this is in tandem with previous reports of alcohol studies among MSM [22,27,29]. We also observed that 68.8% (75/109) had a history of previous intoxication. The high proportion of problem drinkers among our study participants give some cause for concern. Alcohol drinking is associated with risky sexual behavior and 72.5% (79/109) admitted to having used alcohol just before sexual intercourse. These findings may have some implications for HIV transmission and control.

Many smokers in Nigeria wish to quit smoking [5], and the men in this study appear to be no different. This might be because majority of Nigerians are aware that smoking causes serious illness [5]. Almost half of the men in this study desire to quit smoking but few have received help to do so and rarely from

professionally qualified sources. In the same vein, about one in three want to reduce or cut down their drinking and only 22.9% (25/109) of had received any form of assistance with only 5% (20/96) receiving help from those that are professionally qualified. Non-government organizations targeting the provision of health services for MSM in Nigeria should consider incorporating or strengthening substance addiction related services within existing MSM health services.

Our findings are consistent with other studies that report that cigarette smoking is associated with alcohol use. A more holistic approach might be needed when addressing both problems, as they tend to co-exist. Marijuana use was also noted to be associated with smoking and problem drinking. Hence, when providing health services for men, a useful approach might be

Table 6: A multivariate analysis of the factors associated with cigarette smoking and problem drinking among the respondents

Variables	Current smoking			Problem drinking		
	Adjusted OR	95% CI	P-value	Adjusted OR	95% CI	P-value
Current smoker						
No				1		
Yes				13.56	5.37-34.29	<0.001
Uses Marijuana						
No	1			1		
Yes	20.48	1.7.04-246.27	<0.001	21.93	5.15-72.42	<0.001
Partner smoking status						
Partner does not smoke	1					
Partner smokes	7.64	2.82-20.77	<0.001			
Partner drinking status						
Partner does not drink				1		
Partner drinks				3.608	1.911-6.810	<0.001

to provide services not only targeted at one substance but to consider other common substances of abuse.

We observed that the smoking and drinking habits of a current sexual partner was a main influencer of smoking and problem drinking. Other studies have observed that social networks may influence smoking and drinking among MSM^[28,24,25]. It might be worthwhile to consider activities that promote partner inclusion in tobacco and alcohol dependence programs. Contrary to studies in China and New Orleans^[28,35], we did not observe any relationship between age and smoking or drinking. This might be because the men we sampled were relatively younger.

Our study findings should be interpreted with the following limitations in mind. First, the non-probability sampling method means the introduction of possible sampling bias and a non-representative sample of the population, hence a limited generalizability of results. Secondly, as a cross-sectional study, inferences about causality cannot be made. Also, the data were collected by self-report and no biochemical validation was done. However, this is the first study that we are aware of to assess tobacco and alcohol use among an exclusively MSM sample of Nigerian men, providing valuable insight concerning the pattern of tobacco smoking and problem drinking among these men.

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Conflict of interest

There are no conflicts of interest.

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