

Head and Neck Cancer Risk Factors among a Pilot Sample of Nigerian Shisha Smokers: Focus On Oral Sex, Tobacco, Alcohol, and Knowledge of Head and Neck Cancer

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Abstract

Background: Head and neck cancer (HNC) forms the sixth most common cause of cancer-related deaths globally. The major risk factors for HNC are tobacco, alcohol, and oral sex. This study aims to determine the prevalence of oral sex and alcohol drinking amongst a pilot sample of shisha smokers in Birnin Kebbi, Nigeria. This study also explored their knowledge of HNC as well as their attitude towards HNC education. **Methods:** This study was a descriptive cross-sectional pilot study of 45 shisha smokers in Birnin Kebbi, Nigeria. Study tool was a semi-structured questionnaire. Snowballing technique was used in recruiting the study participants. Data collected was analysed using the SPSS version 20 software. **Results:** The mean age (\pm SD) of the 45 respondents was 25.8 years. The majority (71.1%) of them were males, 60.0% had tertiary school education, 73.3% were Muslims, and 62.2% were Hausas. Only 8 (17.8%) respondents had ever had oral sex. Only 5 (13.3%) respondents were found to be alcohol drinker and having positive history of oral sex. No statistically significant relationship was observed between the socio-demographic characteristics of the respondents and their alcohol drinking and oral sexual histories. Lastly, the majority (71.1%) of them had never heard of HNC disease before; however, 73.3% showed positive interest in receiving a comprehensive health education on the disease. **Conclusion:** This study showed that a significant proportion of the surveyed shisha smokers are at higher risk of developing HNC, should they continue in their risky behaviours. In order to prevent young people from developing this killer disease, urgent public health intervention programs need to be done.

Keywords: *Head and Neck Cancer, Shisha, Tobacco, Alcohol, Oral Sex, HPV, Youth*

1. INTRODUCTION

Head and Neck Cancer (HNC) is a malignant neoplastic lesion affecting the mucosa of the upper aero-digestive tract¹⁻⁴; the upper aero-digestive tract comprises the nasal cavity, paranasal sinuses, oral cavity, salivary glands, pharynx, larynx, trachea, and esophagus¹⁻⁴. Head and neck cancer forms the tenth most common cancer worldwide⁵, as well as the sixth most common cause of cancer-related deaths

globally^{6,7}. Every year, more than 500,000 cases of HNC are newly diagnosed⁸. The risk factors of HNC include tobacco, alcohol, poor nutrition and diets (such as vitamins C and E, and zinc deficiencies), poor oral health, pathogenic microorganisms (such as human papillomavirus [HPV], Epstein-Barr virus [EBV], human immunodeficiency virus [HIV], and Helicobacter pylori), ultraviolet radiation, and chronic exposure to harmful chemical substances (such as

benzene, mustard gas, and diesel exhaust)⁹⁻³⁵. Among these risk factors, the three most predominant of them are tobacco, alcohol, and HPV³⁶. The tobacco end users are at high risk of developing HNC³⁶. Also, scientists have asserted that consumption of tobacco products coupled with alcohol drinking and oral sexual behaviors in a person multiply increases their risk of developing the disease, as compared to those that engage in just one of the predisposing social risk factors (i.e. tobacco smoking, oral sex, or alcoholism), uncombined^{37,38}.

There are various means through which people consume tobacco in our present day society. Some people chew tobacco, some sniff it, while some smoke it^{39,40}. For the scope of this study, we will focus on smoked tobacco with especial concentration on shisha – a popular source of smoked tobacco, globally⁴¹.

It had been documented that the extent of cigarette exposure in a 45-minute shisha smoking session is equivalent to smoking 10 sticks of cigarette⁴². As a matter of fact, many shisha smokers have a very wrong feeling that shisha smoking is far harmless, if not harmless, as compared to cigarette smoking⁴³⁻⁴⁶; this is one of the key reasons why shisha smokers smoke shisha for long periods of time.

Furthermore, studies had shown that many of those with smoking habits do indulge in unsafe sexual practices and alcohol drinking habits⁴⁷⁻⁵⁰; this reveals the need for a public health action on promoting healthy behaviors among smokers. Despite the rising prevalence of tobacco smoking, alcoholism, and oral sexual practices in the society, not many people are aware of HNC⁵¹⁻⁵⁵.

Interestingly, only few studies had been conducted in international communities to determine the prevalence of oral sex and alcohol drinking habits among shisha smokers, and as well exploring their knowledge of HNC disease. To the best of our knowledge, this study forms the first study to explore the: prevalence of oral sexual practice and alcohol drinking habit and knowledge of HNC among shisha smokers in Nigeria. This study aims to survey a sample of active shisha smokers in Birnin Kebbi Local Government Area, Kebbi State, Nigeria, to

determine the prevalence of oral sexual practices and alcohol drinking among them; determine their awareness rate on HNC disease and also explore their attitudes towards receiving HNC education. This study has a very high significance. First, data from this study will provide the first data on these sets of risky social behaviors among shisha smokers in Nigeria. Second, the study data will also provide information on the level of risks of the surveyed shisha smokers in developing head and neck cancer disease.

2. METHODS

This study was a community-based cross-sectional pilot study of shisha smokers in Birnin Kebbi LGA, Kebbi State, Nigeria. This study forms part of the 2018 “Campaign for Head and Neck Cancer Education (CHANCE)” project of the Cephas Health Research Initiative Inc^{48,51-53,58}. The study was conducted under strict compliance with the Helsinki Declaration of 1964.

The study area was Birnin Kebbi LGA, Kebbi State, Nigeria. Birnin Kebbi LGA is the most urbanized LGA in Kebbi State; making this LGA the most suited area to conduct the study. Also, the study area is the state capital and the most diversified area in the state. As at the year 2006, Birnin Kebbi has a census population of about 268,620 people of which about 50.3% of them are people aged 15 to 64 years⁵⁶. Also, the majority of the inhabitants of the town were Muslims and of the Hausa-Fulani tribe⁵⁷.

The instrument used to collect data for the study was a 16-item semi-structured questionnaire which was adapted from the questionnaires used in similar studies on tobacco⁵¹⁻⁵³. The questionnaire obtained information on the: socio-demographic characteristics (such as age, sex, level of formal education, religion, and tribe); history of alcohol drinking and oral sexual behaviors; awareness of HNC; and attitudes of the participants towards receiving HNC education.

Being a pilot study, coupled with the peculiar characteristics of the study population in our environment- an emerging population group in the Nigerian society and are predominantly in the

average to high socio-economic class, a convenient sample size of 45 active shisha smokers was used as the minimum sample size for the study. Snowballing technique was used in the recruitment of the participants.

A total of 50 active shisha smokers were visited at home and at shisha smoking places. They were informed about the purpose of the study. They were also informed that their participation was voluntary, anonymous, harmless, and strictly confidential. Out of the 50 active shisha smokers approached, only 45 (90%) agreed to participate in the study. All those that partook in the study gave verbal informed consents before they were given questionnaires to fill. All questionnaires were self-administered.

Data collected was cleaned, coded, and analyzed using the SPSS version 20 Software. Frequency distributions of all variables were determined. Chi-square test was used to test associations between variables using a p-value set at <0.05 to be the level of statistical significance. Results of data analysis were illustrated using tables.

3. RESULTS

The mean age (\pm SD) of the 45 respondents was 25.8 years. The majority (71.1%) of them were males, 60.0% had tertiary school education, 73.3% were Muslims, and 62.2% were Hausas (Table 1).

Only 8 (17.8%) respondents had ever had oral sex, of which virtually all of them engaged in it, for the first time, at the age of 18 years or above while only 7 (15.6%) were alcohol drinkers (Figure 1 & Table 2). Only 5 (13.3%) respondents were found to be alcohol drinker and having positive history of oral sex (Figure 2).

No statistically significant relationship was observed between the socio-demographic characteristics of the respondents and their alcohol history; however, noteworthy relationships were observed (Table 2). A higher proportion of those respondents who were/had males, non-Muslims, non-Hausas, smoking shisha before age 18 years, and below tertiary-school-education were alcohol drinkers when compared with those in the other categories.

Table 1. Demographic profile of participants

Characteristics (n=45)	Frequency	%
Gender		
Male	32	71.1
Female	13	28.9
Level of Education		
Secondary School	16	35.6
Tertiary School	27	77.1
No response	2	0.4
Age (category)		
15 - 24 years old	19	42.2
25 - 40 years old	26	57.8
Mean	25.8	
Standard deviation	5.5	
Religion		
Islam	33	73.3
Non-Islam (Christianity + Others)	12	26.7
Tribe		
Hausa	28	62.2
Non-Hausa	17	37.8

No statistically significant relationship was observed between the socio-demographic characteristics of the respondents and their history of oral sexual practice. However, significant relationships were observed (Table 3). A higher proportion of those respondents who were/had females, non-Muslims, Hausas, smoking shisha at age 18 years or above, and below tertiary-school-education had positive history of oral sex when compared with those in the other categories.

Lastly, the majority (71.1%) of the respondents had never heard of HNC disease before.

However, 73.3% showed positive interest in receiving a comprehensive health education on the disease (Table 4).

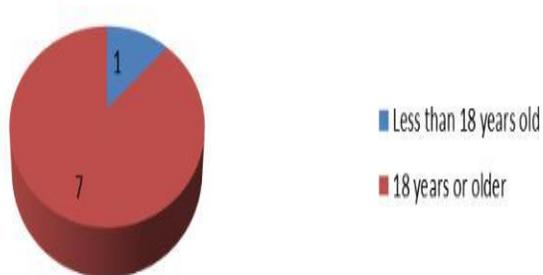


Fig. 1 Distribution of age at oral sexual debut history of oral sex among respondents

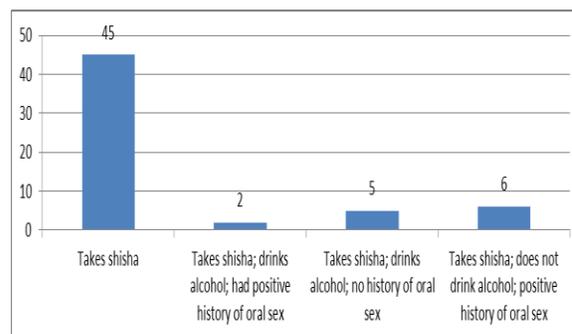


Fig. 2 History of shisha use, alcohol drinking among those respondents with positive

Table 2. Association between socio-demographic characteristics of respondents with their alcohol history

Variables		A (N=13)	B (N=32)	p	C (N=33)	D (N=12)	p	E (N=28)	F (N=17)	p	G (N=18)	H (N=25)	p	I (N=16)	J (N=27)	p
Do you drink alcohol? ^a	No	12	25	0.654	30	7	0.054	26	11	0.080	15	20	1.000	12	23	0.686
	Yes	1	6		3	4		2	5		3	4		3	4	
If yes (to 'a'), how often?	Daily	1	3	1.000	2	2	1.000	2	2	0.467	3	1	0.400	1	3	1.000
	Weekly	0	2		1	1		0	2		0	2		1	1	
How long (in years) have you been drinking alcohol?	<1	1	3	0.741	2	2	0.368	1	3	0.269	3	1	0.223	0	4	0.050
	1-5	0	1		0	1		0	1		0	1		1	0	
	5-10	0	1		1	0		1	0		1	1		0	0	

A – Female; B – Male; C – Muslim; D – Non-muslim; E – Hausa; F – Non-Hausa; G – Those who started smoking shisha before the age of 18 years; H – Those who started smoking shisha at the age of 18 years and above; I – Those who had secondary school education; J – Those who had tertiary school education; p – p value

Table 3. Association between socio-demographic characteristics of respondents with their oral sex history

Variables		A (N=13)	B (N=32)	p	C (N=33)	D (N=12)	p	E (N=28)	F (N=17)	p	G (N=18)	H (N=25)	p	I (N=16)	J (N=27)	p
Have you ever had oral sex?	No	9	24	0.872	27	6	0.082	23	4	0.411	15	16	0.702	10	21	0.124
	Yes	3	5		4	4		10	4		3	5		5	3	
If yes (to 'a'), how many individuals have you ever had oral sex with?	1	2	4	0.415	3	3	0.885	3	3	0.885	2	4	0.906	3	2	0.933
	3	0	3		2	1		2	1		1	2		1		
	>5	1	1		1	1		1	1		1	1		1	1	

A – Female; B – Male; C – Muslim; D – Non-muslim; E – Hausa; F – Non-Hausa; G – Those who started smoking shisha before the age of 18 years; H – Those who started smoking shisha at the age of 18 years and above; I – Those who had secondary school education; J – Those who had tertiary school education; p – p value

Table 4. Awareness of respondents on Head and Neck Cancer (HNC) and their attitudes towards HNC education

Variables (N=45)	Response	Frequency	%
Have you heard of head and neck cancer before?	Yes	8	17.8
	No	32	71.1
	Not sure	4	8.9
	No response	1	0.2
	No	27	60.0
	No response	2	4.4
Do you like to receive a comprehensive education on head and neck cancer in future?	Yes	33	73.3
	No	11	24.4
	No response	1	2.2

4. DISCUSSION

In Nigeria, shisha smoking is becoming a more and more popular risky behaviour, especially among young people^{48,51,59}. Shisha is a form of smoked tobacco which is capable of causing tobacco-induced diseases amongst its users^{41,42,60,61}. Head and neck cancer, a highly notorious disease, is majorly caused by tobacco use while other major HNC risk factors are alcohol and oral sex³⁶. This implies that shisha smokers are at a higher risk of developing the disease.

The rationale for conducting this study was to explore HNC risk factors among shisha smokers, with a focus on tobacco, oral sex, alcohol and knowledge of HNC disease. The findings made in this study showed that the surveyed shisha smokers were at very high risk of developing HNC disease if they should continue indulging in risky behaviors.

To start with, the demographic characteristics of the respondents showed that many of them are young people and they all had at least secondary school level of formal education. From this finding, coupled with the findings in other similar studies, we could suggest that most shisha smokers are young educated people. This implies that many of them are probably from the middle or high socio-economic class family background^{62,63}. Also, the majority of our

respondents were males; this finding had also been reported in studies conducted among shisha smokers in other countries; suggesting that shisha smoking is commoner among males^{63,64}.

Furthermore, we recorded that the majority of the surveyed shisha smokers were Muslims and Hausas. The reason for this skewed distribution is not far-fetched; the geographical location where this study was conducted is predominantly occupied by Hausa Muslims.

In this study, we performed bivariate analysis of variables (using chi-square test) to explore relationships among the socio-demographic characteristics of the respondents and their risky behaviours. However, we did not record any statistically significant relationship (p-values ≥ 0.05). The reason for this may be due to the small sample size used in the study; a small sample size and snowballing sampling technique were used in this study due to the extreme difficulty in recruiting shisha smokers into the study.

However, noteworthy findings were noted in the comparisons between the socio-demographic characteristics of the respondents and their risky behaviors. A higher proportion of those respondents who were: males; non-Muslims; non-Hausas; smoking shisha before age 18 years; and below tertiary-school-education were alcohol drinkers when compared with those in the other

categories. Also, a higher proportion of those respondents who had below-tertiary-school education were alcohol drinkers when compared to those with tertiary-school-education. Males have been found to constitute the majority of tobacco users, globally^{63,64,65}. Also, probably due to the religious doctrine of Islam and the societal stigma associated with alcohol drinking in the environment where this study was conducted (an environment predominantly occupied by Hausas and Muslims^{56,57}), most of the surveyed Hausas and Muslims surveyed did not engage in alcohol drinking. However, the reasons why a higher proportion of the non-Hausas and the non-Muslim respondents were alcohol drinkers could be cultural or religious. Furthermore, the reason why more of those respondents: who started smoking shisha before the age 18 years; and who had below tertiary school education could have social underpinning. The reasons why non-Hausa, non-Muslim, and less educated shisha smokers engaged in alcohol drinking habits may need to be empirically investigated.

It is also noteworthy that oral sexual practice is fairly common (N=8) among the surveyed shisha smokers. As a matter of fact, most of those respondents with oral sexual history started having oral sex at the age of 18 years or above – the age at which the majority of the surveyed shisha smokers started smoking shisha. From these, it becomes obvious that many of our respondents have multiple HNC risk factors.

Also, despite the high risk level of the respondents in developing HNC, yet many of them were not aware of the disease. Also, similar finding had been recorded in Nigeria and overseas⁵³. These findings suggest the need for a public health intervention targeting shisha smokers in this environment.

However, this study has its limitations. First, this study was a pilot study; hence it is difficult to make generalizations based on the study data. Second, this study did not dig extensively into the oral sexual practice and the alcohol drinking habits of the surveyed shisha smokers; hence the need for a qualitative study exploring these behaviors among this population group. Therefore, we recommend that a bigger and more extensive study should be conducted among

shisha smokers in Nigeria, exploring their HNC risk factors, using both qualitative and quantitative research methods.

In conclusion, this study showed that a significant proportion of the surveyed shisha smokers are at higher risk of developing HNC, should they continue in their risky behaviors. In order to prevent young people from developing this killer disease, urgent public health intervention programs need to be done.

CONFLICT OF INTEREST

Authors of this study have no conflict of interest to declare.

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