ORIGINAL ARTICLE

Knowledge of Oral Cancer among Dental Patients in South-Southern Nigeria

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ABSTRACT

Background: Despite recent advances in the detection and treatment of oral cancer (OC), the rate of late presentation by patients is still high. The aim of this study was to assess the knowledge about the risk factors and early signs of OC among dental patients in a Nigerian secondary health facility.

Methods: This descriptive cross sectional study design recruited all consecutive patients at the Stella Obasanjo Hospital, Edo state, Nigeria. Data were obtained using a self-administered questionnaire which was given to all participants that gave written informed consent. Data was collected and analysed

Results: All the 250 respondents approached agreed to participate in the present study. The age range was 18 to 84 years with a mean age of 34.1±12.2 years. There were 71(28.4%) males and 179(71.6%) females. Only 140(56.0%) of the respondents were aware of OC and 70(50.0%) of them had the information from internet/ mass media. Only 65(25.6%) were certain that old age is a risk factor of OC. The age, gender, place of residence, level of education and occupation of the respondents did not significantly affect the level of awareness of the respondents (p > 0.05). .

Conclusion: The knowledge of risk factors and early signs of OC was unsatisfactory in the patients. The demographic features of the respondents were not related to the level of awareness of OC

Keywords Awareness; Knowledge; Oral cancer; Risk factors

INTRODUCTION

Oral cancer (OC) is a major public health problem globally, especially in developing countries.[1] It is one of the ten most common cancers worldwide and the five year survival rate is still disappointingly low.[2] It is a serious cause of morbidity and mortality worldwide. Oral cancer comprises about 85% of all head and neck cancers[3] and accounted for 377,713 new cases and 177,757 deaths globally in 2020, representing an increase in new cases from 2018 (354,864 new cases, 177,384 deaths in 2018).[4] Carcinoma of the oral cavity occurring in Africans is poorly documented and most studies carried out are prevalence studies without statistics on survival rate.[4] The burden of oral cancer in Nigeria is unknown mainly because of lack of statistics or under-reporting. Although OC is considered rare in Africa,[5] studies done in Nigeria,[6,7] suggest that it may occur more frequently than has been documented. Oral cancers generally show a broad geographic variation between populations arising from the lifestyle and the varying predisposing factors.[8] In Nigeria, the prevalence rates of OC range from 30% to 72% in different geopolitical locations.[5-7]

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Oral cancers may be derived from: epithelial cell tissues (carcinomas), mesenchymal tissues (sarcomas) and haematolymphoid tissues (leukaemia/lymphomas/plasmacytomas).[9] Oral cavity is one of the most common sites for various malignancies and is often associated with tobacco consumption either as smoking or chewing, alcohol consumption, ill-fitting dentures, infections, age, the presence of premalignant lesions etc.[10] Oral cancer affects the anterior tongue, cheek, floor of the mouth, gingiva or any other part of the oral cavity.[11] The most common risk factors responsible for oral cancer are chemical factors like tobacco and alcohol, oro-dental factors, biological factors like human papillomavirus (HPV), syphilis, dietary deficiencies, chronic candidiasis and viruses, genetic predispositions to name a few.[12,13] Oral carcinogenesis is a multistep process in which genetic events leading to the disruption of the normal regulatory pathways such as functions of oncogenes and tumor suppressor genes.[14]Exposure to tobacco increases exposure to carcinogenic tobacco-specific nitrosamines (TSNA) and to nitrosamines derived from areca nut alkaloids.[15] The family history of head and neck cancer is a significant risk factor.[16] Genetic alterations involving tumor suppressor genes P16 and P53 are frequently observed in head and neck tumors.[17] Globally the incidence rate of oral cancers is high despite the advances in therapeutic and screening methods; this can be attributed to the lack of awareness and knowledge of the disease.[18-22] Studies on awareness and knowledge of oral cancers among the Caucasians and Asians are well documented[23-28], but few studies are seen among the Africans. To the best of our knowledge only one study [7]was reported in the western part of Nigeria. This study therefore aimed to present the awareness and knowledge about risk factors and early signs of oral cancer among patients presenting to the dental clinic in a regional secondary hospital in southern Nigeria.

METHODOLOGY

This cross-sectional study design was conducted at the Stella Obasanjo Hospital, Edo State, Nigeria from February to November, 2019 on all consecutive adults dental patients (having dental complaint) aged 18 years and above. Those who had no formal education could not read in English language and who refused to participate in the study were excluded. All respondents were assured of anonymity and confidentiality. The prevalence of oral cancer among dental patients in Benin-City of 18.7% reported in a previous study[3] was used as a reference value for the calculation of sample size. The minimum sample size for statistically meaningful deductions was determined using the statistical formula of Fisher for calculating sample size: $N= Z^2P(1-P)/d^2$. Where N is the minimum sample size for a statistically significant survey, Z is normal deviant at the portion of 95% Confidence interval (C.I) = 1.96, P = 18.7%, and d is margin of error acceptable or measure of precision = 0.05. Using this formula, the minimum sample size (N) is 234. However, the sample size was increased to 250 to compensate for 10% attrition.

The data was collected with a 20-item self-administered questionnaire which was pre-validated from a previous study.[19] The questionnaire was pretested among 10 patients and were not part of the present study and modifications of were made accordingly on the questionnaire. The questionnaire was divided into three sections to collect information of demography (6-items); awareness of oral cancer (2-items); knowledge of oral cancer (12-items). The questionnaire was administered in the waiting room of the department. The awareness of oral cancer was assessed with "yes" and "no" responses. The general knowledge of oral cancer, knowledge of risk factors, and knowledge of early signs of oral cancer were also assessed based on "yes" , "no" and "don't know" responses. Data were entered in computer and analysed using Statistical Package for Social Sciences (SPSS) version 21(IBM, Chicago USA). Both descriptive and inferential statistics were performed. In the descriptive statistics, qualitative data were presented as frequencies and percentages, and quantitative were presented as means and standard deviations. In the inferential analysis, Chi-square test was used to examine the differences between the categorical variables. A p-value less than 0.05 was considered statistically significant.

RESULTS

All the 250 respondents approached agreed to participate in the present study giving a response rate of 100%. The reliability of the questionnaire as calculated by Cohen's kappa was 0.85. Table 1 shows the demographic characteristics of the respondents. The age ranged from 18 to 84 years with a mean age of 34.1±12.2 years. There were 71(28.4%) males and 179(71.6%) females. Majority (48.0%) of the respondents in the study were within the age group of 18-30 years.

Table 2 shows the awareness of oral cancer among the respondents. Only 140(56.0%) of the responded had awareness of OC and 70(50.0%) of them had the information from internet/ mass media (television, radio, newspaper). This was followed by family/friends 42 (30.0%).

Table 1: Demographic characteristics of the respondents

Characteristics	Frequency(n=250)	Percent
Age group (years)		
18-30	120	48.0
31-50	96	38.4
51-70	24	9.6
>70	10	4.0
Sex		
Male	71	28.4
Female	179	71.6
Place of residence		
Rural	50	20.0
Urban	200	80.0
Level of education		
Primary	19	7.6
Secondary	78	3.6
Tertiary	152	60.8
Occupation		
Skilled	134	53.6
Semi-skilled	82	32.8
Unskilled	34	13.6
Habit		
Alcohol use	13	5.2
Smoking	11	4.4
Alcohol use + smoking	3	1.2
None	201	81.2

Table 2: Awareness and source of information of oral cancer by respondents

Variable	Frequency (%)
Awareness(n=250)	
Yes	140(56.0)
No	110(44.0)
Source of information (n=140)	
Media/internet	70(50.0)
Family/ friends	42(30.0)
Dentist	20(14.3)
Physicians	5(3.6)
Others	3(2.1)

Table 3 shows the knowledge of oral cancer among the respondents. One hundred and thirty five (54.0%) of the respondents knew that OC is preventable. On the question that oral cancer can be treated, though 138(55.2%) answered yes, 97(38.8%) answered they don't know. One hundred and thirty-five (54.0%) of the respondents don't know if OC is contagious while 54(21.6%) claimed it is contagious. Only 65(25.6%) were certain that old age is a risk factor of OC. Seventy-four(29.6%) said that smoking is not a risk factor of OC. Also 119(47.6%) claimed that excess alcohol consumption was not a risk factor. Only 32(12.8%) respondents knew that excessive exposure to sunlight is a risk factor. When asked if non-healing ulcer is an early sign of oral cancer, 145(58.0%) said yes. Only 103(41.2%) respondents knew that red patch is an early sign of oral cancer. On the question of if white patch is an early sign of oral cancer, 168(67.2) of the respondents responded negative. In the same vain, 104(41.6) respondents answered that lump is not an early sign of OC.

Table 4 shows the association between awareness and the demographic characteristics of the respondents. The younger respondents had more awareness of OC compared to older ones but this observation was not significant (p = 0.617). Though females had better awareness of OC than their male counterparts, this finding was not significant(p = 0.830). Individuals living in rural settings lacked awareness of OC compared to the urban dwellers, however this observation was not significant (p = 0.750). Level of education was found not to affect lack of awareness (p = 0.081). As regard occupation of the respondents, unskilled respondents lack awareness compared to skilled people but observation was not significant (p = 0.274).

Table 3: Knowledge of oral cancer among respondents

Knowledge domain	Frequency (%)
Oral cancer is preventable	
Yes	135 (54)
No	13 (5.2)
Don't know	102 (40.8)
Oral cancer can be treated	
Yes	138 (55.2)
No	15 (6.0)
Don't know	97 (38.8)
Oral cancer is contagious	
Yes	54 (21.6)
No	61 (24.4)
Don't know	135 (54.0)
Old age is a risk factor for oral cancer	
Yes	64 (25.6)
No	181 (72.4)
Don't know	5 (2.0)
Smoking is a risk factor	
Yes	173 (69.2)
No	74 (29.6)
Don't know	3 (1.2)
Alcohol drinking is a risk factor	
Yes	123 (49.2)
No	119 (47.6)
Don't know	8 (3.2)
Exposure to sunlight is a risk factor	
Yes	32 (12.8)
No	216 (86.4)
Don't know	2 (0.8)
Non healing ulcer is an early sign of oral cancer	
Yes	104 (41.6)
No	145 (58.0)
Don't know	1 (0.4)
Red patch is an early sign of oral cancer	
Yes	103 (41.2)
No	142 (56.8)
Don't know	5 (2.0)
White patch is an early sign of oral cancer	
Yes	79 (31.6)
No	168 (67.2)
Don't know	3 (1.2)
Lump is an early sign of oral cancer	
Yes	141 (56.4)
No	104 (41.6)
Don't know	5 (2.0)

DISCUSSION

Unfortunately, most oral cancers, even in developed countries, are detected in late stages[13]. A commonly cited reason for late presentation is the inability to recognise the early signs of oral cancers[14]. Thus raising awareness and educating the public on early signs of cancer should enable patients to present at an early stage resulting in improved survival. Data on the level of oral cancer awareness and knowledge in Nigeria is scarce, making planning of public health policies to improve survival of the patients with the disease very challenging. Hence this study was carried out to determine the level of awareness and knowledge of oral cancer among the Nigerian general population.

The questionnaire employed in this study was pre-validated in previous study[19]. The reliability was good (k= 0.85). The predominance of female individuals in our study (73.2%) is in accordance with other reports[9,14,18] and may be explained by random variation or by the fact that there is greater proportion of women attending hospitals. Habits of alcohol consumption and smoking in the present study are encouraging as 81.2% of the responded neither smoke nor consume alcohol.

Table 4: Association between demographic characteristic and awareness of oral cancer among the respondents

| Variable | Awareness | | x | p-value |
	No(n=110)	Yes(n=140)		
Age (years)				
18-30	52(47.3)	68(48.6)		
31-50	46(41.8)	50(35.7)	1.792	0.617
51-70	8(7.3)	16(11.4)		
>70	4(3.6)	6(4.3)		
Sex				
Male	32(29.1)	39(27.9)	0.046	0.830
Female	78(70.9)	101(72.1)		
Place of residence				
Rural	21(19.1)	29(20.7)	0.101	0.750
Urban	89(80.9)	111(79.3)		
Level of education				
Primary	5(4.5)	14(10.0)	5.026	0.081
Secondary	41(37.3)	37(26.4)		
Tertiary	64(58.2)	89(63.6)		
Occupation				
Skilled	54(49.1)	80(57.1)	2.590	0.274
Semi-skilled	42(38.2)	40(28.6)		
Unskilled	14(12.7)	20(14.3)		

The probable reason could be the level of education of the respondents[23]. Heterogeneous reports are documented globally regarding level of awareness of oral cancer. The level of oral cancer awareness in the present study was alarmingly low, with only 56.0% were aware of oral cancer. This findings is similar to that reported in previous study in Jordan[11] (45.6%) and the UK [17](56.0%). However, this rate of awareness is much lower than that reported in Australia[22] (79%) India,[19] (91.2%) Malaysia,[24] (84.2%) Sri Lanka,[23] (95.0%)USA,[18] (84.5%) and Yemen[16] (71.5%). The likely reason for the low level of awareness may be the low prevalence of oral cancer reported in Africa with Nigeria inclusive. Additionally, lack of current public health education programmes focussing on oral cancer could also be a probable reason. Interestingly oral cancer prevalence is high in countries where level of awareness is higher.

In the present study, the age, gender, place of residence, level of education and occupation of the respondents did not significantly affect the level of awareness of the respondents unlike in a previous study that reported association between awareness and demographic features. [19] The importance of public media in health education cannot be over-emphasized; this could be the reason why majority of the respondents knew about oral cancer through public media. The result of this present study support previous findings, which reported that mass media as a common source of information regarding oral cancer. Disappointingly, it was only 14.3% and 3.57% had head of oral cancer from dentists and physicians respectively. This is a clarion call on both professionals to practice their pivotal role in informing the public about oral cancer.

The respondents in the present study showed an insufficient knowledge regarding risk factors and early signs of oral cancer. Although over 60% of the participants can identify smoking as a risk factor, only small proportion of respondents were aware that alcohol consumption, old age and exposure to sunlight are also potential risk factors. These findings support most previous studies, which reported greater public knowledge of tobacco as a risk factor compared with other risk factors.[11,17,19,22,25] The greater awareness of smoking as a risk factor could be attributed to anti-smoking media campaign. Hence educating the public about other potential risk factors such alcohol consumption and sun exposure is of paramount importance.

The results of our study showed very low knowledge regarding the early signs of oral cancer. Only 56.4% of the responded identified lump as an early sign of oral cancer while less than 50% of the respondent could only identified red/white patches and non-healing ulcer as early signs of oral cancer. Lack public awareness regarding early signs of oral cancer was also reported in previous study.[16,18,19,22] It has been reported that lack of public knowledge of early signs of oral cancer leads to late presentation and consequently decreasing the survival rate. [24] Hence raising awareness and educating the public on early signs of oral cancer is mandatory for early diagnosis and

treatment of the disease. There were some potential limitations to be considered in interpretation of the findings in the study. One of the limitations of the study was the fact that the sample was limited to the patients that presented to the dental clinic so that generalisation of the findings should be with precautions. Lastly, it was a single centre study.

Conclusion: The knowledge of risk factors and early signs of OC was unsatisfactory in the patients. The demographic features of the respondents were not related to the level of awareness of OC. Both professional efforts and public education in improving awareness and knowledge of risk factors and early signs are clearly needed.

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