

Oral Health Practices of Adult Inhabitants of a Traditional Community in Ibadan, Nigeria

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ABSTRACT

BACKGROUND: Although, the association between oral health care practices and sociodemographic characteristics of populations have been documented, information is sparse on sociodemographic indices influencing oral health practices of residents of traditional communities. The study aimed to describe the oral health practices of adult inhabitants of a traditional community in Nigeria.

METHODS: A descriptive, cross-sectional study involving adult residents in randomly selected houses in Idikan, Ibadan, Nigeria. Data on their oral health care practices was obtained with the use of structured interviewer administered questionnaires. Data was analysed with SPSS and test of association carried out using Chi square.

RESULTS: A total of 390 adult residents participated in the study, of which 56.2% were males. A total of 196 (50.3%) participants used toothbrush solely to clean their teeth, 72 (18.5%) used chewing sticks alone while 119 (30.5%) used both tooth brush and chewing stick. Older residents of the community, those with no formal education and in lower occupational classes were more likely to use chewing stick ($p < 0.05$). The majority (68.7%) cleaned their teeth once daily, 30% cleaned twice while 1.3% cleaned infrequently. Educational level attained and occupational class were significantly related to frequency of oral hygiene. Nearly all (95.4%) of the participants knew that oral health services are available in most hospitals, yet only 35.9% had ever visited a dental centre with a significantly higher proportion being males ($p < 0.05$).

CONCLUSION: The study showed that the oral health practices of a typical traditional community in Nigeria are highly influenced by socioeconomic considerations.

KEY WORDS: Oral health, practices, traditional community.

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INTRODUCTION

Oral health practice is any activity undertaken by an individual for the purpose of detecting oral diseases at an early asymptomatic state, preventing deterioration in oral health or activities that may result or increase the risk of developing oral diseases and conditions¹. Oral health practices involve skills, habits, and lifestyle. It has been shown that our ways of life, habits and lifestyle

are of importance in the aetiology of medical as well as oral diseases². Although most oral diseases are not life threatening, they are of major public health importance in the African region because of their high prevalence and significant impact on general health¹. Furthermore, oral diseases still constitute major health problems in many communities around the world particularly among underprivileged groups in the developed countries and in developing countries like Nigeria^{3,4}. Information from the Global Oral Data Bank (GODB) indicates deterioration, over time, of oral health in developing countries¹ and this trend had similarly been observed in Nigeria⁵. Taiwo et al.³ in a study conducted among the elderly of the Ibadan South East Local Government Area in Nigeria, found a high prevalence of periodontal disease, a disease that is highly preventable by good self oral health practices. Although, the association between oral health care practices and the sociodemographic characteristics of populations have been documented^{6,7}, information is sparse on sociodemographic indices influencing oral health practices of people resident in traditional communities especially in African countries like Nigeria.

This study thus assessed the oral health practices of adult residents of Idikan, a typical traditional Nigerian community. It evaluated the oral health seeking behaviour of the inhabitants and determined the influence of their sociodemographic characteristics on these practices and behaviour.

METHODS

This was a descriptive cross-sectional study of adult residents of Idikan community in Ibadan, Nigeria, conducted over a six-month period. Idikan is a traditional peri-urban community in Ibadan, the largest metropolitan indigenous city in Africa that is steeped in traditional beliefs about health⁸. Within this community is a functional primary oral health care centre subserving different functions of providing preventive and curative services to the people of the community and its environs. The primary oral care centre was established in January 1988 out of the conviction that the health care delivery system at that time was inadequate to fulfil the role of primary and secondary levels of prevention of oral diseases in the society⁹.

METHODOLOGY

Following approval, a representative sample of 390 participants was surveyed using a simple random sampling technique in which houses in the community were selected based on a sampling frame obtained from the database of all the numbered houses in the community. In the selected households, inhabitants aged 18 years or older were approached consecutively until a maximum number of 4 participants had been recruited. Thereafter we moved to the next house selected with the sampling frame until the sample size was reached. Information was obtained with the use of a structured interviewer administered questionnaire that was translated into the local language. Data were collected on sociodemographic characteristics such as age, gender, marital status, occupation, highest level of education attained as well as oral health practices. The participants were asked about their tooth-cleaning habits; materials used for cleaning, the technique and frequency of cleaning and if additional substances were employed in whitening of their teeth. Their oral health seeking behaviour was assessed by their knowledge of where to receive oral health care, their previous visits to a dental centre, and ability as well as willingness to pay for the retention of a troublesome tooth.

Data Management

For the purpose of cross-tabulation: age was dichotomized according to the mean; marital status was recoded as married or unmarried; highest educational level attained was classified as none, primary/secondary or tertiary, which included post secondary education; occupation was re-coded using standard occupational classification system designed by the Office of Population Census and Surveys, London (OPCS 1991), modified based on local reality¹⁰, and subjects classified into three socioeconomic groups Class I (skilled workers e.g. professionals), Class II (unskilled workers e.g. artisans and traders) and Class III (dependants e.g. students). The preferred choice of oral care provider of the participants was dichotomized into the choice of hospitals or others; and frequency of cleaning the teeth was re-coded as twice or more and other options, which included once daily or infrequently.

Data analysis

Data were computed and subjected to statistical analysis using the SPSS Version 16 software. Descriptive statistics were presented using frequencies, percentages and proportions for categorical variables while means and standard deviations were used to summarise continuous data. Inferential statistics for bivariate variables was performed using Chi square statistics to test for association between variables and the level of statistical significance was set at a p-value of < 0.05.

RESULTS

Sociodemographic characteristics

A total of 390 inhabitants of the community, aged between 18 and 90 years were surveyed, with a mean age of 38.6 ± 15.6 years. There were 219 (56.2%) males and 171 (43.8%) females. The majority 280 (71.8%) were married; 88 (22.6%) were single, 21 (5.4%) widowed and 1 (0.3%) was divorced. The participants were predominantly unskilled workers such as traders 286 (73.3%); 48 (12.3%) were skilled workers e.g. civil servants, professionals and 56 (14.4%) were dependants. The highest level of education attained by the respondents showed that: 59 (15.1%) had no formal education, 125 (32.1%) had primary education, 173 (44.4%) had secondary education, 9 (2.3%) had post secondary education and 24 (6.2%) had attended tertiary institutions.

Oral health practices

A toothbrush was used solely for daily cleaning of the teeth by 196 (50.3%) participants. The others used: toothbrush and chewing stick 119 (30.5%), chewing stick alone 72 (18.5%) and other materials 3 (0.8%). A total of 118 (30.3%) participants used additional cleaning agents to "whiten" their teeth; these agents included ashes, charcoal and grounded ceramics. The majority 268 (68.7%) cleaned their teeth once daily, 117 (30.0%) cleaned twice or more daily and 5 (1.3%) participants cleaned their teeth infrequently.

The toothbrush or chewing stick was employed for cleaning using horizontal strokes 165 (42.3%), vertical strokes 64 (16.4%), both horizontal and vertical strokes 148 (37.9%) or haphazardly 13 (3.3%). The toothbrush was changed by 152 (48.3%) participants when the bristles are flaying, at an interval of less than three months by 85 (27.0%) and at three months or longer by 78 (24.8%).

Oral health seeking behaviour

Figure 1 indicates the different health care facilities available to participants for oral health care. Most 372 (95.4%) knew that they could get dental care in a hospital or dental centre, and 329 (84.4%) knew that a primary oral health care centre was nearby where they could receive oral health care. Only 138 (35.9%) participants had ever been to a dental centre. All, without exception, had visited because of toothache. When asked if they could pay as much as N5,000 to retain a tooth that was persistently painful, 204 (52.3%) participants were willing to do so while 186 (47.7%) would rather not.

Association between sociodemographic variables and oral health care practices

A higher proportion of participants with post secondary/tertiary education cleaned their teeth at least

twice daily compared to those with no formal education or those who had primary/secondary education (48.5% vs. 25.4% vs. 28.9%, $p = 0.046$). The proportion of skilled workers (47.9%) who cleaned their teeth at least twice daily was higher than those of unskilled workers (27.6%) or dependants (26.8%) whose oral hygiene was at a similar frequency, $p = 0.015$. There was no association between the frequency of cleaning of teeth and age, gender or marital status (Table 1).

Table 1: Relationship between frequency of cleaning of teeth and sociodemographic characteristics of the participants

Variable	Frequency of daily cleaning of teeth			χ^2	p value
	Twice or more No (%)	Other choices No (%)	Total No (%)		
Age group					
(years) ≤ 39	73 (30.5)	166 (69.5)	239 (100.0)	0.087	0.768
> 39	44 (29.1)	107 (70.9)	151 (100.0)		
Total	117 (30.0)	273 (70.0)	390 (100.0)		
Gender					
Male	61 (27.9)	158 (72.1)	219 (100.0)	1.095	0.295
Female	56 (32.7)	115 (67.3)	171 (100.0)		
Total	117 (30.0)	273 (70.0)	390 (100.0)		
Marital status					
Married	77 (27.5)	203 (72.5)	280 (100.0)	2.955	0.086
Unmarrie	40 (36.4)	70 (63.6)	110 (100.0)		
Total	117 (30.0)	273 (70.0)	390 (100.0)		
Education					
None	15 (25.4)	44 (74.6)	59 (100.0)	6.143	0.046
Primary/Seconda	86 (28.9)	212 (71.1)	298 (100.0)		
Tertiary	16 (48.5)	17 (51.5)	33 (100.0)		
Total	117 (30.0)	273 (70.0)	390 (100.0)		
Occupation					
Skilled workers	23 (47.9)	25 (52.1)	48 (100.0)	8.383	0.015
Unskilled workers	79 (27.6)	207 (72.4)	286 (100.0)		
Dependants	15 (26.8)	41 (73.2)	56 (100.0)		
Total	117 (30.0)	273 (70.0)	390 (100.0)		

The participants who used chewing stick alone to clean their teeth were more likely to be older (31.8% vs. 10.2%, $p < 0.001$), have no formal education (47.5% vs. 13.6% vs. 12.1%, $p < 0.001$) and be unskilled workers or dependants (19.4% vs. 19.6% vs. 12.5%, $p = 0.014$) (Table 2). There was no relationship between the choice of material used to clean teeth and gender or marital status.

Association between sociodemographic variables and oral health seeking behaviour

When asked about their preferred oral care provider; a higher proportion of female respondents (86/171, 50.3%) would recommend a hospital compared to the men (88/219, 40.2%), $p = 0.046$. There was no association between the preferred facility for oral care and age, marital status, educational level or occupational class.

A higher proportion of the participants willing to pay N5,000 to retain a painful tooth would recommend a hospital for dental care than those not willing to pay to retain a troublesome tooth, $p = 0.008$ (Table 3).

Table 2: Material used to clean teeth and sociodemographic characteristics of the participants

Variable	Used for cleaning of teeth			χ^2	p value
	Toothbrush No (%)	Chewing stick No (%)	Both* No (%)		
Age group					
(years) ≤ 39	144 (61.0)	24 (10.2)	68 (28.8)	36.714	<0.001
> 39	52 (34.4)	48 (31.8)	51 (33.8)		
Total	196 (50.6)	72 (18.6)	119 (30.7)		
Gender					
Male	115 (52.8)	39 (17.9)	64 (29.4)	0.889	0.641
Female	81 (47.9)	33 (19.5)	55 (32.5)		
Total	196 (50.6)	72 (18.6)	119 (30.7)		
Marital status					
Married	131 (47.1)	54 (19.4)	93 (33.5)	5.123	0.077
Unmarried	65 (59.6)	18 (16.5)	26 (23.9)		
Total	196 (50.6)	72 (18.6)	119 (30.7)		
Education					
None	16 (27.1)	28 (47.5)	15 (25.4)	39.509	<0.001
Primary/Secondary	161 (54.6)	40 (13.6)	94 (31.9)		
Tertiary	19 (57.6)	4 (12.1)	10 (30.3)		
Total	196 (50.6)	72 (18.6)	119 (30.7)		
Occupation					
Skilled workers	35 (72.9)	6 (12.5)	7 (14.6)	12.464	0.014
Unskilled workers	131 (46.3)	55 (19.4)	97 (34.3)		
Dependants	30 (53.6)	11 (19.6)	15 (26.8)		
Total	196 (50.6)	72 (18.6)	119 (30.7)		

* - Both implies toothbrush and chewing stick used,

** - those who used other materials (3) were excluded

Table 3: Relationship between willingness to pay to retain a troublesome tooth and preferred choice of oral care provider

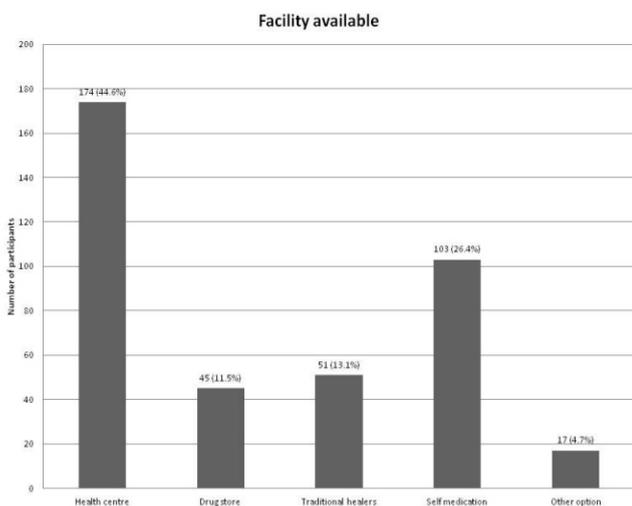
	Preferred facility for oral care			χ^2	p value
	Hospital No (%)	Other facilities No (%)	Total No (%)		
Willing to pay N5,000 to retain tooth					
Yes	104 (51.0)	100 (49.0)	204 (100.0)	7.013	0.008
No	70 (37.6)	116 (62.4)	186 (100.0)		
Total	174 (44.6)	216 (55.4)	390 (100.0)		

The proportion of males who had ever been to a dental centre was higher than that of females (40.6% vs. 28.7%, $p = 0.014$). There was no relationship between previous visits to a dental centre and age, marital status, educational level or occupational class (Table 4).

Table 4: Previous visitation to a dental centre and sociodemographic characteristics of the participants

Variable	Frequency of daily cleaning of teeth			χ^2	p value
	Twice or more No (%)	Other choices No (%)	Total No (%)		
Age group					
(years) ≤ 39	77 (32.2)	162 (67.8)	239 (100.0)	2.708	0.100
> 39	61 (40.4)	90 (59.6)	151 (100.0)		
Total	138 (35.4)	252 (64.6)	390 (100.0)		
Gender					
Male	89 (40.6)	130 (59.4)	219 (100.0)	6.032	0.014
Female	49 (28.7)	122 (71.3)	171 (100.0)		
Total	138 (35.4)	252 (64.6)	390 (100.0)		
Marital status					
Married	96 (34.3)	184 (65.7)	280 (100.0)	0.524	0.469
Unmarried	42 (38.2)	68 (61.8)	110 (100.0)		
Total	138 (35.4)	252 (64.6)	390 (100.0)		
Education					
None	22 (37.3)	37 (62.7)	59 (100.0)	0.413	0.813
Primary/Secondary	103 (34.6)	195 (65.4)	298 (100.0)		
Tertiary	13 (39.4)	20 (60.6)	33 (100.0)		
Total	138 (35.4)	252 (64.6)	390 (100.0)		
Occupation					
Skilled workers	15 (31.2)	33 (68.8)	48 (100.0)	1.173	0.556
Unskilled workers	100 (35.0)	186 (65.0)	286 (100.0)		
Dependants	23 (41.1)	33 (58.9)	56 (100.0)		
Total	138 (35.4)	252 (64.6)	390 (100.0)		

Figure 1



DISCUSSION

This present study assessed the oral health practices of a traditional community in Africa a continent where there is a high prevalence of common oral diseases like periodontal diseases and where access to as well as availability of oral health care is limited, particularly in rural, traditional and peri-urban regions³. Findings from this study showed that this traditional community is predominantly made up of unskilled workers and those with low educational qualifications, a finding consistent with those of previous reports on this community^{8,9}.

Considering that there are gaps of many years between the different studies and the present one, it is remarkable that the Idikan community is still predominantly of low socioeconomic class.

Half of the study participants in this study used toothbrush as their sole teeth cleaning material, a few (18.5%) used chewing stick, while 30.5% used both toothbrush and chewing stick as their teeth cleaning material. This contrasts with the report from a study conducted in the same town amongst the elderly population, where the majority used chewing sticks³. Furthermore, from a study carried out among Kanuri women of Northern Nigeria, the choice of tooth cleaning material was such that 2.2% used ordinary water to rinse their mouth, only 7.9% used toothbrush, 54.9% used chewing stick, and 34.9% used charcoal as their sole teeth cleaning material¹¹. On the other hand, the proportion of participants utilizing toothbrush alone in this study is lower than that reported amongst adolescents and children in the Eastern part of Nigeria, where 80% used toothbrush only to clean their teeth daily¹². The differences between the proportions using toothbrushes to clean their teeth in these studies may be attributable to the level of education of inhabitants of the communities. This may translate to knowledge about the use of toothbrush as a cleaning implement that is taught in schools as was the case in the study from the Northern part of Nigeria where a large number of respondents had no form of formal education. Additionally, cultural influences may also account for the use of chewing stick in African communities. For example, African immigrants in Philadelphia, USA were reported to be using chewing sticks despite being in such a highly enlightened society because of their culture and hence belief in the efficacy as a tooth cleaning agent and perceived medicinal properties^{13,14}.

Additional cleaning agents were used by many of the respondents, these agents were ashes, charcoal and ground ceramics. The use of charcoal and ashes as sole teeth cleaning material and for tooth whitening has been similarly documented among Kanuri women in Northern Nigeria and among Somalians of North Eastern Africa^{11,13}. These practices appear to be age-long and are habits passed down through generations and sustained in the belief that the additional cleaning agents have tooth whitening benefits.

Only a third of the respondents in this study cleaned their teeth twice daily, a proportion lower than what was reported amongst Tanzanian women, Mongolian students, nomadic Somalians, Danish adults and in other industrialized countries^{13,15-17}. However, it is similar to the proportion that was documented in Kuwait among male college health students¹⁸. The once daily cleaning of teeth is typical of most African communities as it is

regarded as the norm and is taught and practiced from childhood, although this is inadequate as a form of primary oral health preventive behaviour.

The predominant teeth cleaning technique employed by the respondents in this study are the horizontal strokes. This is similar to documentations from rural China¹⁹ but inconsistent with findings from the urban areas of China where the Chinese “Love Teeth Day” (LTD) recommended technique was mostly employed¹⁹. The choice of this method of cleaning the teeth in this traditional African community could be due to the ease associated with the use of horizontal strokes technique, a traditional technique. Cleaning of teeth is, wrongly, considered a relatively unimportant activity that could be handled leisurely and should not involve considerable length of time or technique.

Changing of toothbrush as soon as the bristles flay or at an interval of three months or less by most of respondents in this study, may be attributed to the influence of the regular oral health education programmes carried out by dentists at the Primary Oral Health Care Centre located within the community. This was suggested by the awareness of the overwhelming majority of the respondents about the centre. Another explanation may be that since the respondents were adults, they could have noted the reduced efficacy of the toothbrushes or experienced injuries from the toothbrushes when the bristles are flaying and thus change the brushes at such times.

The oral health practices of the adult inhabitants of the typical African community studied was highly influenced by age, educational status and occupational class. Participants were more likely to engage in positive and encouraging oral hygiene practices if they were younger, have a higher level of educational attainment or were skilled workers. The common factor in all three sociodemographic indices is education. Education is a veritable tool, which is easily linked to awareness of general hygiene and practice of safe oral hygiene measures¹⁹. Individuals with higher levels of education are more likely to, thus, be aware of orthodox practices, what is encouraged and reasons why certain health care practices are safe and why some are inimical to health. The use of chewing sticks by the older inhabitants is culture related; it is a practice that has been passed through generations but is presently receiving less support from younger, more educated Africans.

The oral health seeking behaviour of the respondents in this study is problem driven. Only 35.9% had consulted a dentist in the past, because of toothache. This is similar to the pattern reported from other rural, indigenous African⁵, Asian¹⁸⁻²⁰ or Australian populations²¹ where individuals are less likely to seek oral health care for

preventive reasons but will only consult a dentist when their tooth/teeth ache. Furthermore, educational achievement or occupational class were not found to improve the health seeking behaviour of the participants of the traditional African community, which was the setting for the present study. Contrastingly, as noted above, education and occupational class were associated with better oral health practices but not with utilisation of dental services for preventive care. It would therefore seem that more oral health targeted educational enlightenment programmes will need to be done to improve the general health seeking behaviour of individuals from indigenous communities across the globe.

In conclusion, the study has shown that the oral health practices of inhabitants of typical African populations are largely influenced by age and socioeconomic factors. Additionally, the oral health seeking behaviour in such communities is problem driven.

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