

ORAL HEALTH KNOWLEDGE AND PRACTICE AMONG TRADERS IN IBADAN

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ABSTRACT

Background: Adopting good oral health practices such as regular tooth brushing and flossing; healthy nutritional habits and regular visits to the dentist, play a vital role in the wellbeing of an individual by preventing oral diseases such as dental caries and periodontal disease. Adequate knowledge of factors related to oral health may influence oral health practices leading to improved oral health.

Objective: The objective of this study was to assess the oral health knowledge and practice of a group of adults in Ibadan, Nigeria to enable planning of oral health services.

Method: A cross sectional survey involving 400 randomly selected traders at the Bola Ige Modern Market, Gbagi, Ibadan. A semi-structured interviewer-administered questionnaire was used to obtain information on socio-demographics, oral health knowledge and practice. Data was analyzed using descriptive statistics at $p < 0.05$.

Results: The mean age of participants was 36.9 ± 1.2 , 37.0% had adequate knowledge that tooth decay was related to sweet food substances, but the majority (61.9%) consumed carbonated drinks at least once a week. Only 22.8% had ever visited a dentist in their life time and 5.8% in the last six months. Knowledge of who a dentist was associated with their level of education, with more participants who had tertiary education (83%) having greater knowledge ($\chi^2 = 38.3, p < 0.001$). About 70.3% of the study participants used a toothbrush and toothpaste to clean their teeth.

Conclusion: There is poor oral health knowledge amongst adult Nigerians and they utilize oral health practices that do not engender good oral health.

Keywords: Dental caries, Periodontal disease, Oral health awareness

INTRODUCTION

Oral health can be defined as wellbeing of the oral cavity and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and contributes to general health.¹ Oral diseases are preventable and treatable yet they still represent a global public health problem.² The oral health of individuals in developing countries is said to be deteriorating.³ Which may be as a result of low awareness and inadequate access to oral health care. Also, factors such as cultural beliefs, myths, fallacies and fear of dental clinics militate against good oral health in Nigerians.⁴

The prevalence of common dental diseases such as periodontal disease amongst Nigerians was 60-70% about 40 years ago.⁵ The oral health condition of Nigerians seems not to have improved with time, as, recent studies still reported high prevalence of periodontal disease among Nigerians.^{6,7} Popoola *et al.* reported that 90.0% of a group of adolescents in Ibadan had various forms of periodontal disease, and

94.8% of elderly persons in the same environment were also seen to have periodontal disease.^{6,7} The latter figures are relatively similar to the observations among populations in other areas of Nigeria.⁸ There is also an increase in the incidence of dental caries attributable to a shift from the traditional diet to a more refined one with higher sugar consumption.³ Caries prevalence of 11.2% was recorded among adolescents in Ibadan,⁹ and Arigbede *et al.*¹⁰ in a recent study observed that 35.1% of adults had dental caries.

Furthermore, Nigerian adults were found to have poor knowledge of the aetiology of common oral diseases.¹¹ A considerable number were of the opinion that tooth loss and periodontal diseases are normal consequences of ageing and most had never visited a dental clinic; tooth extraction was the natural expectation of the handful that visited the dentist.⁷ Increase in knowledge may confer a sense of personal control over an individual's oral health practice leading to improved oral health.¹² However, ample knowledge

sometimes may not translate to better practice as shown in a study by Lawal and Bankole.¹³ Improved oral health practice includes activities such as proper tooth brushing, regular flossing and dental visits, which may be achieved by adequate information and motivation.^{14,15} Dentists have been reported to be the main source of oral health information for adult Nigerians, however, due to poor dental utilization pattern accessing adequate information may be challenging.^{7,11}

Therefore, in planning oral health treatment or management, it is important to determine the oral health needs in the community. This can be done by determining the normative and perceived needs. In addition, the baseline knowledge, attitude and practice of the community must also be established. There are previous studies conducted among adults in Ibadan that have assessed normative needs.^{7,16} Consequently, the aim of this survey was to assess the oral health knowledge and practice of traders to enable the Department of Family Dentistry, University College Hospital, Ibadan to plan oral health services at the Remi Babalola Red Cross clinic, Gbagi, Ibadan.

MATERIALS AND METHODS

A representative sample of 400 men and women from the new Bola Ige modern market, Ibadan, South west Nigeria were recruited. A sample size was calculated based on the oral health knowledge of Nigerians¹¹. The market which had 40,000 lock-up shops and was divided into five sections based on the type of goods sold. Using a table of random numbers a section of the market was selected and 250 shops were alternately selected starting at a random site. The traders in selected shops who were willing to participate were included. Individuals who were younger than 18 years were excluded as well as those not present in their shops at the time of data collection. Permission was obtained from the Chairman of the market for the data collection process and informed consent was obtained from each participant before inclusion.

A semi structured interviewer-administered questionnaire was used to obtain data on socio-demographic characteristics, dietary habits, dental health knowledge and practice, as well as dental clinic attendance pattern. Questionnaire was administered to the participants in their shops by six (6) dental surgeons who were fluent in the Yoruba and English languages. The dental surgeons had earlier undergone a day's training on interpretation and filling of the questionnaire.

Data obtained from the questionnaire were analyzed using SPSS Inc. version 19. Data were presented on

tables and charts; chi square test was used to test association between socio-demographic characteristics of the participants and factors related to oral health at $p < 0.05$.

RESULTS

Data were analyzed from 400 questionnaires that were properly filled; there were 126 (31.5%) males and 274 (68.5%) females. Their age ranges were 18-29 (29.3%), 30-49 (55.5%), 50-69 (13.7%) and >70 years (1.5%) with a mean age of 36.9 ± 1.2 years. Most (94.8%) were Yoruba, 4.5% were Igbo and the others constituted 0.8%. A high percentage (52.3%) were Moslems and 73.8% of the participants were married. The majority (54.3%) had secondary school education, 18.3% tertiary and 6.0% had no formal education.

On their knowledge about causes of tooth decay, 37.0% knew that sugar containing food substances were associated with tooth decay; 24.5% of them thought it was caused by dirt and stains on the teeth; 8.3% by worms while 30.2% had no idea what caused tooth decay (Table 1). More females 115(77.7%) had correct knowledge about the cause of tooth decay ($\chi^2 = 11.1, p = 0.03$).

Less than half (42.8%) of the participants had the correct knowledge on the means of removal of yellow or brown hard deposits on the teeth, 118(29.5%) did not know how these deposits could be removed while 20.8% thought using a toothbrush could remove them. The majority (57.8%) knew who a dentist is, only 22.8% had ever visited a dentist and 5.8% had done so in the last six months. Though quite a number, 163 (40.7%) did not have access to a dentist within a 10 minutes travel time (Figure 2). Table 3 shows the proportion of those who knew who a dentist was, and this increased with the level of education of participants and was statistically significant ($\chi^2 = 38.30, p < 0.001$). Three hundred and fifty-six (89.0%) of the participants did not know what dental floss was.

Many (70.3%) of the study participants used a toothbrush and toothpaste to clean their teeth; 18.3% used chewing stick along with a toothbrush while 7.8% used chewing sticks alone. Level of education was associated with the use of toothbrush and toothpaste as a tooth cleaning aid ($\chi^2 = 33.1, p = 0.007$). Amongst those using toothbrush to clean their teeth, 59.0% changed their brushes once in three months, 4.1% had no particular time while 26.3% did so when the bristles of the toothbrush got frayed. Two hundred and seventy-four (68.3%) of the participants claimed to use fluoride containing toothpaste to clean their teeth but the rest (31.7%) had no idea whether the toothpaste they used contained fluoride or not (Table 2). With regards to

Table 1: Distribution of socio-demographic characteristics of participants and those with correct knowledge of factors related to oral health

Socio-demographics	Frequency	Percentage
Age group (years)		
18 - 29	117	29.3
30 - 49	222	55.5
50 – 69	55	13.7
> 70	6	1.5
Sex		
Male	126	31.5
Female	274	68.5
Marital status		
Single	89	22.3
Married	295	73.8
Divorced/ separated	9	2.3
Widowed	7	1.8
Religion		
Christianity	190	47.5
Islam	209	52.3
Others	1	0.2
Educational level		
No formal education	24	6.0
Primary	57	14.3
Secondary	217	54.3
Post secondary(NCE, Grade II, Technical College)	29	7.3
Tertiary (University, Polytechnic)	73	18.3
Causes of tooth decay		
Dirt and stains on the teeth	98	24.5
Sweets and sweet foods	148	37.0
Worms on the teeth	33	8.3
I don't know	121	30.2
Yellow/ brown hard deposits on the teeth can be removed by		
Tooth brushing	83	20.8
Use of chewing sticks	28	7.0
Cleaning at the dental clinic	171	42.8
I don't know	118	29.6
Do you know who a dentist is?		
Yes	231	57.8
No	169	42.3
Does your toothpaste contain fluoride?		
Yes	273	68.3
No	127	31.7
Do you know what dental floss is?		
Yes	44	11.0
No	356	89.0

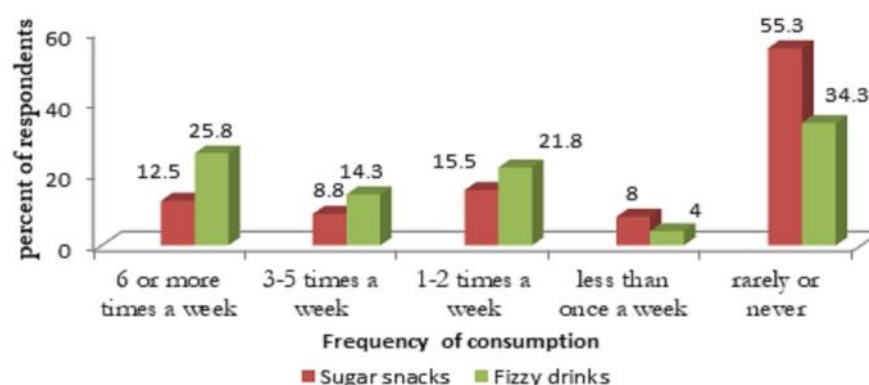


Fig. 1: Frequency of consumption of sugar snacks and fizzy drinks

Table 2: Distribution of participants by oral health practices

Statements on oral health practice	Frequency	Percentage
Do you clean your mouth		
Yes	399	99.8
No	1	0.2
What do you use to clean your mouth		
Chewing stick	31	7.8
Toothbrush and toothpaste	281	70.3
Toothbrush with toothpaste and chewing stick	73	18.3
Others- cotton wool & water, cotton wool & ash	14	3.5
How often do you clean your mouth?		
Not every day	24	6.1
Once daily	217	54.3
Twice daily	146	36.5
More than twice daily	13	3.3
How often do you change your tooth cleaning aid		
Once in 3 months	236	59.0
Once in 6 months	36	9.0
Once yearly	7	1.8
When bristles get spoilt	105	26.3
I don't know when exactly	16	4.1
Have you ever had problems with your teeth/ mouth		
Yes	132	33.0
No	268	67.0
*If yes, how did you attend to the problem		
Purchased drugs from a chemist shop	16	4.0
Used local herbs	15	3.8
Went to the hospital	59	14.8
Nothing	17	4.3
Others	25	6.3

* n= 132 (participants reporting dental problems)

Table 3: Oral health knowledge and practice of participants by socio-demographic characteristics

	Socio-demographic Characteristics					χ^2	p value
	Male	Female					
Visited a dentist							
Yes	24(19.4)	67(24.9)				1.5	0.24
No	100(80.6)	202(75.1)					
Causes of tooth decay							
Dirt and stains	38(30.2)	60(21.9)				11.1	0.03
Sweets and sweet foods	33(26.2)	115(42.0)					
Worms on the teeth	10(7.9)	23(8.4)					
I don't know	45 (35.8)	76(27.7)					
	No formal education	Primary	Secondary	Post secondary	Tertiary		
Do you know who a dentist is?							
Yes	8(3.5)	30(13.1)	109(47.20)	23(10.0)	61(26.4)	38.3	< 0.001
No	8(10.1)	14(17.7)	51(64.6)	3(3.8)	3(3.8)		
I don't know	8(8.9)	13(14.3)	57(63.3)	3(3.3)	9(10.0)		
Tooth cleaning aid used							
Chewing stick	1(4.2)	7(12.3)	21(9.7)	2(6.9)	-		
Toothbrush & toothpaste	12(50.0)	35(61.4)	155(71.8)	22(75.9)	57(78.1)	33.1	0.007
Toothbrush/paste & chewing stick	9(37.5)	10(17.5)	36(16.7)	4(13.8)	14(19.2)		
Others- cotton wool & water/cotton wool & ash	2(8.3)	5(8.8)	4(1.9)	1(3.4)	2(2.7)		

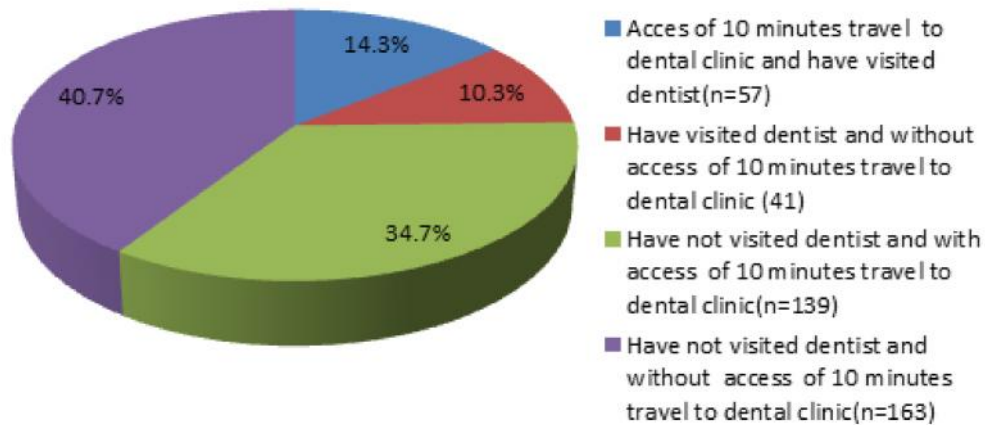


Figure 2: Access to dental clinic and pattern of visit

frequency of mouth cleaning- 54.3% did so once a day, 36.5% twice daily and 5.3% did not clean their mouth daily. The participants consumed sugar containing food substances regularly with majority (61.9%) taking carbonated drinks at least once a week: 25.8% (≥ 6 times), 14.3% (3-5 times) and 21.8% (1-2 times) (Figure 1).

One hundred and thirty-two participants (33.0%) had a history of dental problems and had used the following remedies- local herbs (3.8%), medication from chemist shop (4.0%), no treatment (4.3%), visited hospital (14.8%) although it was not indicated whether it was a dental clinic. Most (98.8%) thought it was important to take care of one's teeth and gums and majority (60.0%) said they cleaned their teeth to avoid having bad breathe while 31.0% did so to prevent tooth decay.

DISCUSSION

The aim of this data collection and analysis was to determine the knowledge and practice of the traders at the neighboring Gbagi market to enable us plan oral health services.

Fewer participants in this study knew that dental caries was associated with sugar containing food when compared with a group of Nigerian primary school teachers, but similar to observations amongst Tanzanian adults (43.7%) and Saudi Arabian school teachers (37%).^{11,17,18} In contrast, to this finding, more adults from Burkina Faso (86.0%), China (64.3%) and India (67.0%) were seen to have better knowledge with regards to the relationship between caries and sweet food substances.^{19,20,21} However, the main source of oral health information for Nigerians is the dentist, the higher level of oral health knowledge amongst the Chinese and Indians may be due to the fact that a

greater proportion of them had visited the dentist in their lifetime unlike our observed population among whom less than a quarter had seen a dentist.^{11, 20,21}

Dental visit patterns have not changed significantly over the years as seen in this survey and previous studies among Nigerians. Taiwo *et al.*¹⁶ in a study among adult diabetics reported that 51.1% had never visited a dentist. Similarly in a more recent study among elderly persons Taiwo *et al.*⁷ observed that 65.7% had never been to a dental clinic in their lifetime. This is similar to findings by Ephraim-Emmanuel *et al.*²² amongst a group of Nigerian adults in two communities in Bayelsa state. The frequency and reason for visiting a dental clinic in this study was mainly on account of pain as also observed among the adults in Otuogidi and Oloibiri communities.²² Pain was also the primary reason adults in Saudi Arabia, Nepal and Pakistan visited the dentist.^{18,23,24}

More females in this study knew about the cause of tooth decay and similarly among teachers in Al Kharj, Saudi Arabia²⁰ unlike observations by Petersen *et al.*¹⁹ in a study conducted in Burkina Faso. The tendency for females to care more for their appearance and health related issues may account for this difference in the level of knowledge.²⁵

Toothbrush and toothpaste are commonly used as aids for cleaning the mouth amongst Nigerian adults as was observed in this population.^{22,25} However, in studies amongst other groups of Nigerians quite a sizable number of the participants used chewing sticks alone as a tooth cleaning aid.^{7,22} The latter study populations were primarily rural in one study and elderly individuals in the other and these may have been the reasons for their findings. Also, the frequency of changing the tooth cleaning aid amongst the individuals

using toothbrush to clean their mouth in this population of adults was similar to that observed amongst adults in China unlike teachers in Saudi Arabia where more than half of the study population changed their toothbrush monthly.^{18,20} Cost of tooth cleaning aids and lack of awareness on the need for frequent change of these devices may account for the difference in our observation.

The number of individuals who claimed to use fluoridated toothpaste was more than those in other studies (28.7%, 30%, 93%).^{18,20,23} In some of these preceding studies, herbal formulations were more commonly used unlike in this environment in which most toothpastes available in the market are fluoridated. A certain proportion of the participants in this survey had no idea if the toothpaste they used had fluoride and this was similar to that observed by Petersen et al.¹⁹ in their study. Lack of awareness about the importance of fluoride may account for this.¹⁹

Furthermore, fewer individuals in this survey cleaned their mouth as frequently as adults in previous studies involving Nigerians^{7,11} and also adults in Burkina Faso, Nepal and Pakistan respectively.^{19,23,24} Inadequate information and poor educational background are the main reasons attributed to brushing once daily;²⁵ this was reiterated by the finding that more individuals in the aforementioned studies had better levels of education compared to those in the surveyed population. However, some adults in Bayelsa state, Nigeria had a similar pattern of mouth cleaning frequency as those in Burkina Faso, Nepal and Pakistan.^{22,19,23,24}

The average Nigerian adult takes various forms of refined sugar regularly, as observed in our adult population.^{7,11} This is also similar to that of persons in the study by Parveen et al.,²¹ though not as many individuals (57.9%) consumed sugary snacks and drinks at the same frequency of six times or more daily. Fewer (19%) similarly aged adults in Burkina Faso consumed soft drinks at the same rate regularly.¹⁹ The pattern of sugar snack and drink consumption is a reflection of the gradual trend towards a more westernized diet among Nigerians. But, most participants in this survey rarely took confectionaries such as sweets, which is in agreement with findings amongst adults in Burkina Faso¹⁹ unlike 85.7% of adults in a study by Abiola *et al.*²⁶ who consumed sweets once a week.

CONCLUSION/RECOMMENDATION

It was observed that the levels of oral health knowledge and practice were generally poor among traders in Bola Ige model market, Gbagi.

As such community-oriented oral health promotion programmes and the establishment of a nearby dental clinic would enhance knowledge; improve oral health practice and the general well being of individuals.

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