

Authors and Affiliation for article: **ORAL HYGIENE KNOWLEDGE, PRACTICES AND DENTAL SERVICES UTILIZATION PATTERN OF HEALTH PROFESSIONALS IN LAGOS.** Lasu-jds;1(1):22 – 25

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Oral hygiene knowledge, practices and dental services utilization pattern of health professionals in Lagos.

ABSTRACT

Objective: Health professionals are an invaluable group of workers that can potentially promote oral health but there is however, scarcity of information on the knowledge and awareness of health professionals in Nigeria. The present study aimed to determine the knowledge and practices of oral hygiene as well as dental services utilization of health professionals in Lagos State.

Materials and Methods: This was a descriptive study conducted on a cross-section of health professionals (Medical doctors, nurses, pharmacists, physiotherapists, dentists and dental technicians etc.) in LASUTH and General Hospitals in Lagos and Randle. A validated Self-administered questionnaires were used to obtain the participants' bio data, questions assessing knowledge and practices of oral hygiene, as well their utilization of dental services. The data analysis was done with SPSS version 21 and **p-values** <0.05 were taken as significant.

Results: A total of 304 questionnaires were returned filled. Majority 205(67.4%) of participants utilize toothbrush and paste to clean their teeth and 225(74.0%). mainly once daily. Only 70(23.1%) of participants' floss regularly. Most 210(69.1%) of the participants had visited the dentist before and mainly 67(22.0%). for scaling and polishing. A significant proportion of the participants 66(21.7%) felt no need for a dental visit. Only one hundred and forty-six 146 (48.0%) participants had good oral hygiene knowledge which was significantly higher among the medical cadres ($p < 0.005$)

Conclusion: The knowledge, attitude and practice of oral hygiene among this group was limited and there is a need to update their knowledge through the inclusion of dental modules in the training of health workers as well as an increase in the dental component of the continuing medical education program of the hospital.

Keywords: knowledge, practice, health workers, oral hygiene, dental service utilization.

Introduction

Oral health is an integral component of general health and a major determinant of quality of life.

^[1] Oral health means more than healthy teeth. The World Health Organization (WHO) has a definition of good oral health: “Oral health means being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the mouth and oral cavity” ^[2]

Oral diseases and disorders often result in physical discomfort, pain, infection and sometimes tooth loss. ^[3] They also frequently cause difficulty in chewing; swallowing; speaking, and can disrupt sleep and productivity. ^[1, 3] Oral diseases are a major public health concern owing to their high prevalence and their effects on the individual’s quality of life. ^[4] Several oral diseases have important side effects on general health, while systemic conditions may show a mutual influence on oral health. ^[2] The majority of oral diseases are closely related to lifestyles, which means that a change in behavior is required to decrease oral diseases. ^[5]

Over the years, the incidence of dental diseases has significantly decreased in most developed countries because they have adopted a healthy lifestyle ^[6] with preventive strategies both at the individual and population level helps reduce the negative impact of oral diseases including improving quality of life. ^[7]

One critical tool identified for achieving good oral health is the institution of effective and efficient oral hygiene practices. ^[1, 8, 9] Oral hygiene is the level of oral cleanliness of an individual. The value of good oral hygiene practices has increased over the years. ^[7]

Oral hygiene is the practice of the removal of bacteria plaque to keep the mouth clean and healthy. This is essential for the prevention of the two most prevalent dental conditions namely dental caries and periodontal disease. ^[8,9] To achieve and maintain good oral hygiene, and

prevent dental caries and periodontal disease, regular tooth brushing using fluoride containing toothpaste at least twice a day is recommended. ^[8] The use of dental floss for cleaning of interproximal surfaces is also crucial for effective plaque removal. ^[10, 11] In addition to such daily oral care, regular visits to the dentist promote oral health which is an integral part of general health. ^[10]

Raising public awareness about dental visits for check-up may assist in early diagnosis of oral diseases. ^[2] Studies have also shown that there is a direct relationship between increased knowledge of oral hygiene and better oral health. ^[12] However, a proper understanding of oral hygiene practices among our patients is paramount to an effective preventive measure. ^[6]

The health care professionals working in Lagos State hospitals come across a number of patients in their routine practices. With proper knowledge and oral health behavior, they can play an important role in the oral health education of individuals and groups.

There are isolated studies done on physicians, residents, nurses, and pharmacists, ^[12-17] but clear comprehensive data in this field was found wanting. Therefore, this study was conceived to assess the oral hygiene awareness, and practices among the health professionals of Lagos state hospital in Lagos, Nigeria.

Methodology

A cross-sectional survey of 304 health professionals working in three government hospital in Lagos, Nigeria was carried out.

Study location

Health Professionals from Lagos State Teaching Hospital (LASUTH), a tertiary Hospital and two of the state's general hospital in Lagos, Randle and Lagos Island Hospital were selected

Study design

The sampling method employed in this survey was a convenient sampling. Verbal informed consent was taken from the health professionals. Only the consented health professionals participate in the study. The work force consisted of Medical officers, Dentists, Health Information Managers (Medical record clerks), Nurses, Pharmacists, Physiotherapists, Dieticians, Dental Technicians and Medical Lab Technicians

Inclusion criteria

Health professionals who agreed to participate in the study were considered.

Exclusion criteria

Health professionals who did not give their consent.

Sample size

The minimum sample size was determined using the following formula:

$$N = Z^2 P q/d^2 [18]$$

Where d = degree of accuracy desired, set at 0.05

p = the proportion in the target population estimated to have a particular characteristic,

P = 77.9% (0.779) based on a previous report of tooth brushing. [19]

Z = standard normal deviation, set at 1.96 which corresponds to 95% confidence level.

$$q = 1.0 - p$$

$$N = (1.96)^2 (0.779) (0.221) / (0.05)^2 = 264 + 26 \text{ of none responsive} = 290$$

The questionnaire, which was used in the study, consisted of four parts. The first part comprised of questions relating to demographic data of professionals including age, gender, education and type of health professionals. The second part consisted of questions related to oral hygiene knowledge: the **questions included** signs of poor oral hygiene, prevention of poor oral hygiene by tooth brushing and flossing, the importance of interdental cleaning, importance of dental visit, relationship between oral hygiene and general health. The third part consisted **of questions** to evaluate the attitude of health professional towards dental visits and treatment (ever visited the dentist, was regular visit to dentist necessary, what dental treatment was sought during last visit, what was driving factor for last visit, what was the reason for not visiting the dentist,). The fourth part comprised of questions related to oral hygiene practices amongst the healthcare professionals, which included the oral hygiene method used, tooth brushing frequency and use of water to rinse after meals.

The oral health knowledge score was calculated by giving a score ‘zero’ for every wrong answer and score ‘one’ for every right answer. The highest score that was possible was 12, if the health professional answered all the questions correctly, and lowest was zero, if all the answers were wrong. The individual scores were totaled to yield a final score. The scores of 0-6, 7-9 and 10-12 marks were graded as knowledge level poor, fair and good respectively. Results were expressed in terms of percentage.

Ethical approval

Ethical approval was obtained from the Ethics Committee of Lagos state teaching hospital LASUTH. Ikeja, Lagos.

Data analysis

The data obtained was analyzed with the Statistical Package for the Social Sciences (SPSS) version 21 (SPSS Inc., Chicago, IL, USA). Categorical data was summarized and presented as frequency tables, while quantitative data was presented as mean and standard deviation. Anova and Student t-test were used. $P < 0.05$ was set as statistically significant.

Result

A total of 304 Health professionals, aged 18-60 years participated in this study. Of these 185 (60.9%) were females and 119 (39.1%) were males. Most of the health professionals were in the age group of 21-40 years 252(79.9%), 7 (2.3%) were below 20 years of age. About (42.0%) had post graduate education. About thirty three percent of the participants 99 (32.6%) were Medical doctors, 58 (19.1%) Dentists, 36 (11.8%) Nurses. (Table1)

Females had a mean score of 9.36 ± 1.35 while males had a score of 8.97 ± 1.70 . There was a statistically significant difference between the groups ($p < 0.007$). The Dentist had a highest score of 9.93 ± 0.99 , followed by Medical doctors with a mean score of 9.54 ± 1.63 . There was a statistically significant difference ($p < 0.005$) between the groups. (Table 2)

Figure 1 shows that the participants 146(48.0%) had good oral hygiene knowledge, while 19(6.3%) had poor oral hygiene knowledge.

Majority of the participants 205 (67.4%) used toothbrush to clean their mouth and 225 (74.0%) brush at least once a day. Most of the participants 209 (65.9 %) used medium bristled toothbrushes, 147(48.4%) of them replaced their toothbrush every 3 months and 82(27.0%) replaced their toothbrush when it frayed. About 111(36.5%) and 70(23.1%) used dental floss and mouthwash, respectively, as other cleaning aids. (Table 3)

Majority of the participants 210(69.1%) had visited the dentist at one point or the other, 87(28.6%) visited between six to 12 months. Only 43 (14.1%) had been to the dentist for dental extractions, 16 (5.3%) had filings, 67 (22.0%) had scaling and polishing and 17 (5.6%) had other forms of dental treatment. About 94(31.0%) of the participants had never visited of which 66 (21.7%) of the participants did not visit the dentist because they did not have any dental problems. (Table 4)

Discussion

In the present study, it was observed that the females had a higher oral health knowledge score than the males. Similar to the report of Baseer et al ^[19] and contrary to that of Kaur et al. ^[2] However, the difference between gender was statistically significant but was not in Kaur et al. ^[2] Further, it was observed that the dentists had a highest score followed by doctors, nurses and technicians. Similar to the report of Baseer et al, ^[19] but in contrast to that of Kaur et al ^[2] where the score of the pharmacist followed that of the doctor. There was a statistically significant difference between the groups similar to report from other studies. ^[2, 19]

Almost all the health professionals cleaned their tooth with toothbrush and toothpaste. Similar to reports from other studies. ^[2, 19] Furthermore, 3.6% of the participants used a combination of toothpaste/toothbrush and “chewing” stick. This was similar to the reports by Aliya et al ^[14] and Baseer et al ^[19] in their studies among health professionals.

Majority of the participants brushed once a day. The result was in contrast to the report of Etetafia et al., ^[12] in their study among Medical Practitioners in Delta State, Nigeria where 56.1% of the participants brushed twice or more daily.

Inter-dental area is the most common site of plaque retention and the most inaccessible to toothbrush, and as a result toothbrush is not enough to remove dental plaque from the teeth; this must be complemented by the use of interdental aids like dental floss and interdental brushes. In the present study, there was generally a failure in the use of dental floss as a preventive tool, as only 36.5% of the health professionals used dental floss. This was similar to reports from other studies, ^[2,14,17, 19] but higher than what was reported in the studies of Ibrahim et al ^[16] and Akhionbare et al. ^[20] This emphasizes the urgent need for educating and motivating the participants to use this efficient method for oral health care.

Furthermore, 17.4% of the participants used wooden toothpicks, the use of which should be discouraged as it can easily traumatize the gingiva and can result in gingivitis and periodontitis. Most 94.7% of the participants claimed that they clean their tongue either with tooth brush or tongue cleaner. Also, only 49.7% rinsed their mouth after eating food. This was a clear indication that the participants are not aware of the basic method of maintaining oral hygiene. This study showed that (64.8%) of the participants used medium bristled toothbrushes. However, only 48.4% of the participants routinely changed their toothbrush within 3 months; Similar to the study of Aliyu et al. ^[14] this was higher than the 28.8% reported by Bashiru and Anthony. ^[21] The American Dental Association recommends a change of toothbrush every 3–4 months or even earlier if the brush head appears frayed. ^[22]

Majority (87.7%) of the health professionals in the present study claimed that regular visit to the dentist was necessary. This was in accordance to previously reported studies. ^[2, 19]

In the present study, about (69.1%) health professionals had visited the dentist previously, which was higher than what was reported (43.5%) in a study by Baseer et al. ^[19] This was a favorable dental attitude and may be attributed to the favorable conditions like working in medical facility with proximity to a dental center, and their socioeconomic and educational factors.

Visiting the dentist for routine check-up was defined as a preventive dental care behavior. In this study, (22.0%) of the health professionals visited the dentist for routine check-up. Similar to the report of Prusty. ^[4] Contrary to the report from Baseer et al ^[19] where 65.2% of the health professionals visited the dentist for routine check-up

The awareness of the crucial role of regular dental checkups in preventing and detecting dental diseases is another gap in public education. It is the responsibility of dentists, to educate and motivate people to visit them.

The most common reason for visiting the dentists was scaling and polishing similar to the report of Kaur et al.^[2] The commonest driving factor for visiting the dentist was pain. This was similar to a previous study.^[19]

The percentage of last treatment in this study was, partially in line with that of Etetafia et al,^[12] who reported that 37.4% never visited a dentist, 19.5% had dental extractions, 10.6% had fillings, 33.3% had scaling and polishing and 36.6% had other forms of dental treatment.

The most common reason mentioned by the health professionals for not visiting the dentists was that they had no dental problems; this was in contrast to Kaur et al^[2] where busy schedule was the reason for not visiting the dentist.

The major limitation of this study is the reliance on self-reported information; such information is often subject to response bias and the responses may have been influenced by the social acceptability.

Conclusion: The knowledge, attitude and practice of oral hygiene among this group was limited and there is a need to update their knowledge through the inclusion of dental modules in the training of health workers as well as an increase in the dental component of the continuing medical education program of the hospital.

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Table 1: Demographic data

Variable	Frequency	%
Age		
18-20	7	2.3
21-40	243	79.9
41-60	54	17.8
Gender		
Female	185	60.9
Male	119	39.1
Marital status		
Married	138	45.4
Unmarried	166	54.6
Educational Status		
Diploma	52	17.1
Tertiary	125	41.1
Post graduate	127	41.8
Profession		
Dental Technicians	26	8.6
Dentists	58	19.1
Dietitians	11	3.6
Health Information Managers	17	5.6
Medical Doctors	99	32.6
Med Lab Scientists	20	6.6
Nurses	36	11.8
Pharmacists	22	7.2
Physiotherapists	15	4.9
Total	304	100.0

Table 2: Comparison of the mean knowledge score of study participants.

Mean Knowledge score			
Variable	N	Mean $\pm$ SD	P value
Gender			
Female	185	9.36 $\pm$ 1.35	<0.007
Male	119	8.97 $\pm$ 1.7	
Occupation			
Dental Technicians	26	9.15 $\pm$ 1.29	<0.005
Dentists	58	9.93 $\pm$ 0.99	
Dietitians	11	8.36 $\pm$ 1.50	
Health Information Managers	17	7.71 $\pm$ 1.26	
Medical Doctors	99	9.54 $\pm$ 1.62	
Med Lab Scientists	20	8.95 $\pm$ 1.28	
Nurses	36	9.53 $\pm$ 1.16	
Pharmacists	22	8.23 $\pm$ 1.27	
Physiotherapists	15	7.67 $\pm$ 1.63	
Total	304	9.21$\pm$1.52	

Figure 1: Mean knowledge Score of participants

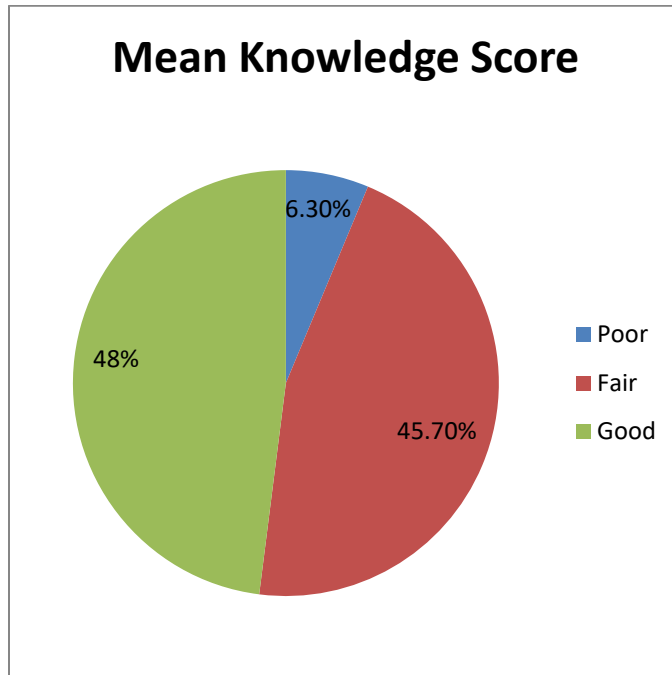


Figure 1

Table 3: Oral hygiene practices of the participants

Variables	Frequency	Percent
What do you use to clean your teeth		
Toothbrush	205	67.4
Chewing stick	88	28.9
Chewing stick and toothbrush	11	3.6
Frequency of tooth brushing		
Once	225	74.0
Twice	60	19.7
>Twice	19	6.3
Type of brush used		
Soft	49	16.1
Medium	197	64.8
Hard	54	17.8
Nothing	4	1.3
Change of tooth brush		
Monthly	45	14.8
Once in 3months	147	48.4
When brush fray	82	27.0
Occasionally	30	9.8
Other Cleaning aids		
Floss	111	36.5
Mouthwash	70	23.1
Toothpick	53	17.4
Nothing	63	20.7
Others	7	2.3
Tongue Cleaning		
Toothbrush	270	88.8
Tongue scraper	18	5.9
No	16	5.3

Water Rinsing

Yes	151	49.7
No	153	50.3
Total	304	100.0

Table 4: Dental Service Utilization pattern of the participants

Variables	Frequency	Percent
Have you ever visited a dentist		
Yes	210	69.1
No	94	30.9
Last Dental Visit was		
When in Pain	38	12.5
6-12months	87	28.6
2--5years	64	21.1
>5yrs	21	6.9
None	94	30.9
Reason for Last Dental Visit		
Extraction	43	14.1
Filling	16	5.3
S&P	67	22.0
Checkup	67	22.0
Others	17	5.6
None	94	31.0
If No, Why		
No Dental Problems	66	21.7
Fear	5	1.6
Lack Of Time	17	5.6
Other	4	1.3
Cost	2	0.7
Total	304	100