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A descriptive study on the perception of health care workers to dental treatment at a tertiary hospital in Lagos, Nigeria

Oyapero A., Ogunbanjo V.O.

ABSTRACT

Aims: Many oral diseases have a strong connection with systemic conditions while effective delivery of health care often requires the combined efforts of all health professionals. Due to the problems of access to dental care, patients may consult other primary health care providers for their oral health needs. This study was undertaken to assess the oral health knowledge, attitude and practices among various health professionals working in Lagos State University Teaching Hospital, (LASUTH). Methods: This cross-sectional study was conducted at the LASUTH Ikeja, Lagos, Nigeria. A stratified probability sampling method was used to categorize the different health professionals in LASUTH and about 20% of the health workers in each category were enlisted using the nominal roll as a sampling frame. A total of 148 questionnaires were administered during the study on subjects who met the inclusion criteria and gave their informed consent. Results: Females and younger respondents were more likely to visit the dentist than males for routine dental check-up even though the association was not significant. The oral health knowledge and attitude among the various health professionals surveyed in LASUTH was found to be inadequate even though Medical doctors had the overall best responses. There was a significant difference between the attitude of the Medical Doctors and other health professionals on questions about extractions (p = 0.024); dental treatments (*p* = 0.008); dental fillings (*p* = 0.000); artificial teeth (*p* = 0.013); bleeding gums (*p* = 0.002) and replacement of lost teeth (*p* = 0.004). Conclusion: All health professionals can promote oral health by disseminating accurate oral health messages, being appropriate role models by paying attention to their own oral health, encouraging appropriate dental visits and participating in oral health promotion within their scope of duties. It is also recommended that dental items feature more frequently in hospital ground rounds and clinical meetings of to address this deficit.

Keywords: Attitude to dentistry, Dental treatment, Health care workers, Oral disease, Oral health knowledge

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INTRODUCTION

Oral health may be defined as a state of health of oral and related tissues that enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being. Oral diseases may be associated with considerable pain, anxiety, and impaired social functioning. Although most dental diseases are not life-threatening, they are detrimental to the quality of life and can have an impact upon the self-esteem, nutrition and health of an individual [1, 2]. Many oral diseases have a strong connection with systemic conditions while effective delivery of health care often requires the combined efforts of all health professionals [3]. Due to the difficulties of access to dental care, patients may consult other primary health care providers for their oral health needs. Hence, medical practitioners and other health care workers frequently encounter patients with oral and dental problems [4].

All health professionals can promote oral health by disseminating accurate oral health messages, being appropriate role models by paying attention to their own oral health, encouraging appropriate dental visits and participating in oral health promotion within their scope of duties [5]. With proper knowledge, medical professionals could guide patients, friends, families and the community at large on appropriate steps to take to address oral health conditions [6]. They could, however, dismiss a patient's symptoms or wrongly prescribe medication based on inaccurate knowledge or prejudices to dentistry.

Oral health care has usually been excluded from general health care. Some researchers [7–9] have observed that nurses, physicians, and other health care professionals have not been adequately trained to provide oral health advice or screening. In a study by Applebaum et al. [10], only 9% of primary care physicians could identify the high risk sites in the oral cavity for oral cancers, while only 24% knew the most common signs and symptoms of potentially malignant disorders. Similarly, a survey of nurses showed that only 35% identified sun exposure as a risk for lip cancer while only 19% felt that their knowledge of oral cancers was adequate [11]. A survey of nursing assistants in nursing homes also found that they erroneously regarded tooth loss as a natural consequence of aging [12]. These surveys underline the need to bridge the knowledge and attitude gap if non-dental health professionals are to contribute towards the reduction of the burden of oral diseases.

Very few surveys have been done in this Nigeria to determine the perception of medical health workers to dental treatment. The present study was undertaken to assess the oral health knowledge, attitude and practices among various health professionals working in LASUTH.

MATERIALS AND METHODS

This cross-sectional study was conducted at the Lagos State University Teaching Hospital, (LASUTH) Ikeja, Lagos, Nigeria.

Sample size

The sample size of 148 was calculated using a formula for cross sectional studies: $N = Zpq/d^2$. Using a prevalence value of 83.3% from a previous study [13], a sample size of 110 was determined. One hundred and forty-eight respondents were however recruited for the study.

Sample selection

The subjects for the study were consecutively recruited from various health professionals that practice in LASUTH. A stratified probability sampling method was used to categorize the different health professionals in LASUTH. About 20% of the health workers in each category [Medical Doctors (MED), Pharmacists (PHA), Physiotherapists (PHY), Nurses (NUR), Laboratory Scientists (LAB) and Health Records Staff (REC)] were enlisted using the nominal roll as a sampling frame. A total of 148 questionnaires were administered during the study on subjects who met the inclusion criteria and gave their informed consent.

Study setting and location

This study was conducted at the Lagos State University Teaching Hospital, (LASUTH), Ikeja, Lagos, Nigeria. Lagos State University Teaching Hospital is a tertiary health facility situated in the capital of Lagos State. It is a multi-specialist hospital with a bed complement of 741.

Inclusion and exclusion criteria

Permanent staff of the hospital who gave their informed consent to be part of the study was included. Hospital personnel that had a temporary appointment and those that had any objection to participating in the study were excluded.

Data collection

A structured, self-administered and close-ended questionnaire was designed and distributed among 148 health professionals working in LASUTH. The questionnaire used in the study consisted of four parts. The first part obtained socio-demographic data (age, gender, educational qualification and type of health professionals) while the second part consisted of nine questions that assessed the history of dental treatment and dental experience of the medical personnel. The third part included 20 questions to assess the knowledge of the medical personnel on different aspects of dentistry and dental treatment. The 20 knowledge-based questions were on different aspects of dental treatment including

oral surgery, oral medicine/radiology orthodontics, pedodontics, periodontics, conservative dentistry and prosthodontics. The questions were answered in true, false and I do not know formats. The fourth part consisted of 20 questions to assess the attitude towards the dental profession and towards professional dental care among the study subject. These questions were also answered in true, false and I do not know formats.

Data analysis

Data was entered into the Microsoft Excel software and analyzed using SPSS (statistical package for social sciences) for Windows (version 18, Chicago, IL) statistical software package. For data analysis, correct responses were assigned a score of "one" while wrong and ''don't know" responses were assigned a score of "zero" in the knowledge and attitude sections of the questionnaire. The individual scores were added up to give a total score and percentages were calculated for each professional group. Descriptive statistics were obtained and mean percentage scores were calculated for the oral health knowledge and attitude items. The chi-square test was used to determine an association between the scores of the health professionals. The *p*-value less than 0.05 was considered statistically significant.

RESULTS

One hundred and fifty questionnaires were distributed to the health professionals during the study period. The completed questionnaires were checked for completeness and consistency. A total of 148 respondents who were eligible by set inclusion and exclusion criteria and who completed all the aspects of the questionnaire properly were included in the final analysis.

Socio-demographic and diabetic characteristics of the study population

The baseline characteristics of the respondents are given in Table 1. Most of the respondents (45.3%) were in the 30–39 years age category and there were more females (53.4%) enrolled in the study. Majority of participants (81.1%) were of the Yoruba ethnic group while the highest percentage (35.8%) was medical doctors. Most of the respondents (43.9%) had practiced for less than five years (Table 1).

Association between the socio-demographic characteristics of respondents and dental check-up

Females and younger respondents were more likely to have visited the dentist for routine dental check-up even though the association between age/gender of the respondents with routine dental visit was not significant. There was however a significant association between the occupation and level of qualification of the respondents and dental visits. Medical doctors and respondents with postgraduate degree/training were more likely to visit the dentist for routine dental check-up (Table 2).

History of dental treatment in the study population

Over half (50.67%) of the health professionals surveyed had never visited the dentist either for screening or treatment. Among those that had attended the dental clinic, Scaling and Polishing (20.9%) was the most common dental procedure that they had done. Majority of the subjects that had undergone a dental procedure (33.78%) saw the dental staff as cordial and the dental procedure as normal (37.83%). Most of them (27.70%), however, did not return for their follow-up visits (Table 3).

A comparison of health workers responses to questions on knowledge about dental treatment

Table 4 summarizes respondents' answers to the questions about their knowledge of dental treatment. The percentages were calculated based on the number of correct responses to each question. The percentage of correct responses by the respondents ranged from 0–81.1% with most of the health workers having <50% of correct responses in most of the knowledge questions. Medical doctors had better responses in 15 out of the 20 knowledge-based questions. The radiographers had the lowest percentage of correct responses. The top three questions wrongly answered were questions number 10, 11 and 15. There was a significant difference between the knowledge of the medical doctors on questions on dental anesthesia (p = 0.000); cleft repair and surgeries (p = 0.001); dental fillings (p = 0.008); root canal treatment (p = 0.000); oral/systemic connection (p = 0.000); and bacterial nature of dental infections (p = 0.021).

A comparison of health workers responses to questions on attitude to dental treatment

Table 5 summarizes respondents' answers to the questions about their attitude to dental treatment. The percentages were calculated based on the number of correct responses to each question. The percentage of positive responses to attitude questions ranged from 0–79.2% with less than 50% of the respondents having a positive attitude to dental treatment in most of the aspects surveyed. Medical doctors had more positive responses in 14 out of the 20 attitude questions. The radiographers had the lowest percentage of correct responses. The top three questions wrongly answered were questions number 4, 18 and 20. There was a significant difference between the attitude of the medical doctors and other

health professionals on questions about extractions (p = 0.024); dental treatments (p = 0.008); dental fillings (p = 0.000); artificial teeth (p = 0.013); bleeding gums (p = 0.002); replacement of lost teeth (p = 0.004) among others.

DISCUSSION

This study assessed oral health knowledge and attitude of health care professionals in LASUTH. The study was descriptive and cross-sectional and was done using a self-administered questionnaire. It was observed that most of the respondents were medical doctors and nurses, while about 53% of the respondents were female with most of them in the 30–39 years age group. In the present study, 49.33% of the health professionals had previously visited the dentist for routine check-up. This was significant because visiting the dentist for routine check-up can be interpreted as accessing preventive care. The percentage of female health professionals visiting a dentist for routine check-up was higher than their male colleagues. One possible explanation for this tendency is that women care more about their health and their appearance and have greater aesthetic concerns than men. This was in agreement with work by previous researchers [14].

Among the health professionals surveyed in this study, medical doctors were more likely to have visited the dentist for a routine check-up than the other health workers. Similarly, respondents that had a postgraduate training or qualification were more likely to have attended the dental clinic for a routine check-up. This may be attributed to favorable conditions like the

Table 1: Socio-demographic characteristics of the study respondents

		Number (n)	Percentage (%)
Age (years)	20–29	52	35.14
	30–39	67	45.27
	40–49	25	16.89
	50–59	4	2.70
Gender	Female	79	53.37
	Male	69	46.53
Ethnicity	Hausa	2	1.35
	Ibo	21	14.20
	Yoruba	120	81.08
	Others	5	3.37
Occupation	Medical Doctor	53	35.81
	Nurses	37	25.00
	Laboratory Scientists	14	9.46
	Medical Records	14	9.46
	Pharmacists	13	9.29
	Physiotherapists	12	8.11
	Radiographers	5	3.37
Years in Practice	<5	65	43.92
	6–10	43	29.05
	11–15	27	18.24
	16–20	7	4.74
	>20	6	4.05
Qualification	First Degree	129	87.16
	Postgraduate training/ Degree	19	12.84
	Total (Each Subgroup)	148	100

Table 2: Association between the socio-demographic characteristics of respondents and dental check-up

		Have you ever had a dental check-up	
		No	Yes
Age (years)	20–29	26	26
	30–39	33	34
	40–49	15	10
	50–59	1	2
		$p = 0.732$	
Gender	Female	35	44
	Male	40	29
		$p = 0.097$	
Ethnicity	Hausa	2	0
	Ibo	15	6
	Yoruba	58	62
	Others	0	3
		$p = 0.052$	
Occupation	Medical Doctor	16	37
	Nurses	23	14
	Laboratory Scientists	9	5
	Medical Records	10	4
	Pharmacists	7	6
	Physiotherapists	6	6
	Radiographers	4	1
		$p = 0.013$	
Years in Practice	<5	34	31
	6–0	21	22
	11–15	11	16
	16–20	5	2
	>20	4	2
		$p = 0.556$	
Qualification	First Degree	71	58
	Postgraduate training/ Degree	4	15
		$p = 0.013$*	
Total (Each Subgroup)		75 (50.67)	73 (49.33)

*Significant

Table 3: History of dental treatment in the study respondents

		Number (n)	Percentage (%)
Have you ever had dental treatment?	Yes	63	43.57
	No	85	57.43
Which dental treatment did you receive?	Not Applicable	85	57.43
	Routine extractions	16	10.81
	Third molar surgery	5	3.37
	Fillings	6	4.05
	Scaling and polishing	31	20.94
	Root canal treatment	2	1.35
	Orthodontics	1	0.70
	Periodontics	2	1.35
What was the attitude of the dental staff?	Not Applicable	85	57.43
	Cordial	50	33.79
	Aloof	11	7.43
	Hostile	2	1.35
How would you describe the treatment?	Not Applicable	85	57.43
	Normal	56	37.84
	Difficult	2	1.35
	Traumatic	5	3.38
Did you return for follow up?	Not Applicable	85	57.43
	Yes	22	14.87
	No	41	27.70
Total (Each Subgroup)		148	100

Table 4: A comparison of health workers responses to questions on knowledge about dental treatment

	Percentage (%) with Correct responses							
	MD	NUR	LAB	REC	PHA	PHY	RAD	*p*-value
1. The only treatment for a painful tooth is extraction.	50.8	48.6	35.7	14.3	35.4	33.3	20.0	0.960
2. Tooth extraction can only be done under local anesthesia.	71.1	12.9	6.5	3.2	7.7	8.3	0.0	0.000*
3. Dentists can repair fractures and remove tumors.	69.8	59.5	35.7	35.7	53.8	16.7	20.0	0.001*
4. Dentists can repair cleft lip and palate.	56.6	54.1	42.9	57.1	38.5	58.3	0.0	0.632
5. Dental fillings can halt tooth decay.	45.3	56.8	14.3	35.7	30.8	33.3	20.0	0.008*
6. Root canal treatment could be an alternative to tooth extraction.	58.5	28.6	27.0	50.0	7.7	25.0	20.0	0.000*
7. Dark colored teeth can be made whiter by the dentist.	66.0	54.1	57.1	57.1	46.2	50.0	40.0	0.178
8. Elderly people should have less teeth as they age.	62.3	51.4	35.7	35.7	38.5	16.7	0.0	0.073
9. Pregnancy and diabetes can affect the gums.	69.8	64.9	21.4	35.7	46.2	33.3	20.0	0.017*
10. Toothpicks should be used to clean in between teeth.	24.5	18.9	35.7	35.7	23.1	50.0	40.0	0.756

Table 4: *(Continued)*

11. The treatment for shaking teeth is tooth extraction.	37.7	35.1	28.6	0.0	23.1	41.7	20.0	0.026*
12. Baby teeth may not be treated since they will eventually fall off.	56.6	43.2	28.6	7.1	30.8	33.3	40.0	0.033*
13. Children can acquire the bacteria that cause dental disease from their mothers.	43.4	27.0	21.4	35.7	15.4	16.7	20.0	0.147
14. Sucking the lips and thumb can affect the arrangement of children's teeth.	69.8	70.3	42.9	50.0	53.8	50.0	0.0	0.087
15. Scattered teeth can be rearranged in less than 1 year.	11.3	35.1	21.4	14.3	23.1	16.7	20.0	0.180
16. All types of artificial teeth can be removed at night before the patient sleeps.	34.0	18.9	28.6	21.4	23.1	16.7	20.0	0.970
17. The dentist can detect systemic diseases from oral findings.	77.4	64.9	42.9	57.1	38.5	41.7	0.0	0.000*
18. Tooth decay and gum disease are not caused by bacteria.	81.1	62.2	28.6	42.9	53.8	50.0	60.0	0.021*
19. Spending too much time on brushing will not damage the tooth structure.	52.9	45.9	57.1	14.3	30.8	25.0	40.0	0.054
20. Fluoride makes tooth enamel more resistant to decay.	71.7	40.5	35.7	42.9	38.5	41.7	0.0	0.003*

*Significant

Table 5: A comparison of health workers responses to questions on attitude to dental treatment

	Percentage (%) with positive responses							
	MD	NUR	LAB	REC	PHA	PHY	RAD	P value
1. I would not recommend tooth extraction for anyone.	66.0	73.0	42.9	42.9	46.2	41.7	20.0	0.024*
2. Dental treatments are unnecessarily scary.	64.2	56.8	50.0	50.0	38.5	50.0	20.0	0.155
3. I believe that dental treatments are too painful.	67.9	51.4	28.6	42.9	53.8	16.7	20.0	0.008*
4. I think dental treatments can have long and unnecessary appointments.	37.7	37.8	35.7	28.6	30.8	25.0	20.0	0.878
5. Dental fillings will eventually fail and so are unnecessary.	75.5	21.6	14.3	28.6	38.5	25.0	20.0	0.000*
6. It is unnecessary to see a dentist when I do not have toothache.	66.0	40.7	42.9	35.7	46.2	50.0	0.0	0.162
7. I feel that artificial teeth are uncomfortable and patients cannot chew with them.	56.6	18.9	28.6	35.7	30.8	50.0	0.0	0.013*
8. Bleeding gums are nothing to worry about.	77.4	40.5	14.3	42.9	46.2	66.7	40.0	0.002*
9. I think the replacement of a lost tooth is unnecessary.	75.5	45.9	35.7	35.7	46.2	16.7	60.0	0.004*
10. I am very scared of getting infected at the dental clinic.	52.8	21.6	42.9	42.9	30.8	41.7	60.0	0.311
11. I believe other teeth will become affected if a patient has an extraction.	58.5	27.0	38.6	14.3	30.8	25.0	40.0	0.100
12. I believe that 'Touch and go" medicine should be used for toothache.	52.8	35.1	28.6	21.4	38.5	0.0	0.0	0.026*

Table 5: *(Continued)*

13. I believe that tooth extraction is the most important thing dentist do.	69.8	45.9	21.4	28.6	30.8	16.7	40.0	0.014*
14. Dentists may have a role in identifying dead people.	73.6	29.7	7.1	28.6	30.8	16.7	0.0	0.000*
15. I believe dentist should limit themselves to treating "teeth".	66.0	29.7	14.3	42.9	15.4	41.7	40.0	0.006*
16. I do not think dentist and their staff show empathy towards their patients.	58.5	54.1	28.6	35.7	46.2	25.9	40.0	0.442
17. I believe artificial teeth are made from dead people's teeth.	69.8	64.9	21.4	42.9	69.2	41.7	0.0	0.008*
18. Mouthwashes alone should take care of mouth odor.	17.0	18.9	14.3	7.1	15/4	8.3	0.0	0.223
19. I think people should be concerned about swollen gums	79.2	64.9	28.6	78.6	61.5	50.0	20.0	0.015*
20. I think women intending to get pregnant should visit the dentist.	47.2	37.8	21.4	45.7	15.4	25.0	0.0	0.000*

proximity of dental centre, rotations by medical doctors through the dental clinic during their specialist training as well as regular contact between dental residents on specialist training with their medical colleagues. It was also encouraging to note that the prevailing reason for dental attendance among the respondents was for scaling and polishing which is mainly a preventive procedure. This was in agreement with the findings of Kaur et al. but, however, in contrast to the work of previous researchers who observed that toothache was the main reason why health professionals visited the hospital [15–17].

The majority of the respondents that had attended for dental treatment viewed the dental personnel as cordial and the procedure undergone as atraumatic. The attitude of dental personnel and the occasional trauma associated with some dental procedures may be a barrier to dental treatment for those who have had a negative experience. Some studies have shown that previous traumatic dental experiences are often correlated with a high level of dental anxiety [18–20]. There is also an association between dental fear and less frequent dental attendance, poorer oral health, and greater functional impairment. The positive attitude encountered in this group of respondents should be exploited to motivate them and their patients to seek preventive dental services routinely.

This study addressed the knowledge and attitude of health workers regarding dental treatment and practice. There was a considerable lack of oral health knowledge among most of the health professionals on different aspects of dental treatment. This lack of knowledge may be a significant barrier to the prompt identification and referral of dental conditions as well as in the preventive advice that health workers should give to patients. The knowledge of medical doctors was generally higher than that of other health workers while nurses had the second best responses. Radiographers were observed to have the worst responses out of the health workers surveyed. It is significant to note that health workers that have a high level of interaction with patients in the clinics had better responses.

Physicians, nurses and other health professionals that work directly with patients may gain information and experience in general dental health during their careers due to their constant clinical interaction with patients. In the developing nations, there is a high prevalence of oral disease while there is poor access to oral health services [15]. In many countries, young children are not examined by a dentist until they are three years old, but they see primary-care providers, including physicians very frequently for health screenings [21]. Physicians are often the primary source of preventive information for most patients since they establish a relationship with them from an early stage. Integration of oral health information into health education sessions can address the common determinants of health and improve the ability of the patients to take appropriate preventive actions [22]. There is thus a significant need to improve the knowledge of health workers on different aspects of dental treatment and this need is greatest among health workers that are not involved in clinical activities.

Correspondingly, medical doctors had a more positive attitude on different aspects of dental treatment compared to other health workers. Less than 50% of the respondents had a positive attitude to different aspects of dental treatment. Majority of the health workers were scared of dental treatments, felt that dental treatments were usually painful and believed that dental fillings were unnecessary. Most of them also believed that extractions were the most important thing that dentists do and did not see a need to relate patients' systemic health with their oral health. Some chronic conditions as well as illnesses in immunocompromised patients have oral manifestations

which could promptly alert health workers. Oral health care needs to be addressed by all health workers and should be integrated into comprehensive health-promoting strategies and practices [23]. The common risk factor approaches for chronic diseases require collaboration between health professionals [24]. Thus, oral health promotion is needed within health care practices of physicians and nurses [25].

Changes to attitudes, perceptions and knowledge are important precursors to changes in behavior. Medical professionals often are the first point of contact for patients with dental diseases, i.e., halitosis, bleeding gums, toothache and oral cancer. All members of the health profession have the potential to promote oral health by supporting accurate oral health messages, showing exemplary oral health related behaviors, encouraging appropriate dental visits and participating in explicit oral health promoting activities within their scope of duties. A limitation of the study was its descriptive nature and also that the data collection was limited to a Tertiary facility. Future studies could explore the knowledge and attitude of health workers in secondary and primary care facilities as well as rural health care workers who attend to a significant part of the population. Future studies could also explore the role of medical clinics as an avenue for screening for oral health conditions.

CONCLUSION

There was a moderate level of demand for preventive dental services among the respondents surveyed, while female health workers were more likely to access dental services. The oral health knowledge and attitude among the various health professionals surveyed in LASUTH was found to be inadequate even though medical doctors had the overall best responses. The knowledge of health workers on oral health and their attitude to dentistry must improve if a positive impact must be made on the oral health status of their patients. Continuing medical education for health professionals should include oral health topics to improve their knowledge of oral health. It is recommended that Dental items feature more frequently in hospital ground rounds and clinical meetings of to address this deficit. The general practice/ family medicine residency program should also consider the inclusion of a dental rotation in their training.

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Author Contributions

Oyapero Afolabi – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Ogunbanjo V.O. – Substantial contributions to conception and design, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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