Factors Associated with Awareness of Dental Care Services among a Population of Adults in Ondo City, Nigeria

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ABSTRACT

Objective: To assess the factors associated with awareness of dental care services among adult residents of a sub-urban community in Nigeria.

Methods: This pilot study, cross-sectional in design was conducted among 263 adult residents attending a dental outreach programme in Ondo city, Nigeria. Data for the study was collected with a pretested structured questionnaire and by oral examination. Data obtained was analyzed with SPSS version 21.

Results: The age of the participants ranged from 17 – 90 years, there were 159 (60.5%) males and 169 (64.3%) had tertiary education. Many 232 (88.2%) were aware of orthodox dental care services prior to the study. The main sources of awareness were social media 67 (28.9%) and friends 58 (25.0%). Only 113 (43.0%) had consulted a dentist. A total of 107 (40.7%) of the participants had good oral hygiene, 135 (51.3%) had fair oral hygiene while 21 (8.0%) had poor oral hygiene. The prevalence of dental caries was 28.5%. A higher proportion of those who had tertiary education were aware of dentistry as a component of health care compared to those with secondary and primary education (94.1% vs 84.6% vs 69.0%, $X2 = 21.084$, $p < 0.001$). There was no significant association between awareness of dental care services and oral health status.

Conclusion: Awareness of dental care services among adult residents in Ondo city was high, although it did not reflect on their oral health status and less than half of those aware had consulted the dentist. It was however associated with higher educational qualification.

Keywords: Dental services, factor, awareness

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INTRODUCTION

A layman's awareness of a dentist is restricted to the knowledge of an individual involved in the treatment of diseases affecting the teeth.[1] Despite this basic description of a dentist by a layman, knowledge of dentistry as well as awareness of orthodox dental care services is poor in underserved communities.[1-4] A previous study conducted in a peri-urban region with a primary oral health care centre had reported that the majority of community dwelling adults in that location were aware of orthodox dental care services.[5] Within the same community, lack of knowledge of orthodox dental care services was also a major reason for seeking alternatives when the need arose.[6] It is, however, uncertain if residents of sub-urban regions with very few or no primary oral health care centres or major tertiary health institutions are aware of orthodox dental care services. This is important because of the high prevalence of unmet dental needs from common and preventable oral diseases among adults in such regions.[7] In addition, these common oral diseases have adverse effects on quality of life as well as on economic productivity.[8]

Thus, individual, group or population-based oral health promotion programmes aimed at precipitating positive behaviour are essential to control these diseases as well as improve utilization of dental care services. In designing such programs, determination of the level of awareness of availability of dental care services as a component of health care is pertinent. This is because lack of awareness of dental care services is a poorly investigated factor for reasons of non-use of dental care services. Importantly, behavioural theorists have identified awareness of event or phenomenon as a vital step in practice of a particular behaviour,[9-12] thus necessitating this study.

Factors such as age, gender and educational status have been associated with awareness of dentists in South-eastern part of Nigeria. [1] Younger age, male gender and having formal education are factors associated with higher level of awareness of who a dentist is.[3-4] Information on factors associated with awareness of orthodox dental care services is sparse in sub-urban regions, making this study important.

Recently, the Faculty of Dental Sciences, University of Medical Sciences set machinery in place to render dental services in Ondo City as part of its mandate to expand access to innovative and quality dental care to underserved populations. This study was carried out prior to commencement of the afore-mentioned dental services and was aimed at assessing awareness of oral health care as a component of healthcare. Findings from this study will contribute to the baseline oral health data and facilitate the design of interventional oral health promotion programmes. This study therefore, assessed the factors associated with awareness of dental care services among adult residents of a sub-urban community in Ondo city, Nigeria.

MATERIALS AND METHODS

Settings

This study was carried out in Ondo city, on patients attending an oral health-screening programme at the University of Medical Sciences Teaching Hospital Complex, Laje Road, Ondo city. The data was collected over a period of three weeks. Ethical approval for the study was obtained from the University of Medical Sciences Teaching Hospital Complex, Ethics and Research Committee. Ondo city is the second largest city in Ondo state, Nigeria. It lies between Ondo East and West local government areas. It has an area of 970 square kilometres and an estimated population of approximately 300,000 with agriculture being the main stay of the economy.[12]

Study design and population

The study was cross sectional in design and a pilot study. Data for the study was obtained with structured interviewer-administered questionnaire and by oral examination. Study participants were consecutive adult patients attending the free screening programme. Adult patients who gave informed consent, had been resident in the town for a minimum of six months and without any form of communication barrier were recruited for the study. Critically ill patients were excluded from the study. Dentists who had been trained collected data for the study. The questionnaire was administered in both English and the local language – Yoruba. An independent dentist versed in both English and Yoruba languages translated the questionnaire. The translated questionnaire was back translated into English language by another independent non-dentist and was found similar to the original questionnaire.

The questionnaire comprised of 20 questions. It assessed socio-demographic characteristics of the study participants, awareness of orthodox dental services, what a dentist does, previous dental visits, reasons for such visits and previous oral complaints. The questionnaire was pretested among 20 individuals in Ondo city who were excluded from the study. This was to ascertain the feasibility of the study and assess the validity of the questionnaire.

Oral examination was conducted by two dentists trained by a qualified oral epidemiologist. The routine of examination and scoring was standardized until both intra- and inter-examiner reliability score of 93% was obtained using the Simplified Oral Hygiene Index by Greene and Vermilion.[13] In addition, the same training process was applied to the diagnosis of caries according to the World Health Organisation Oral Health Survey criteria for caries diagnosis.[14]

Oral examination of patients was conducted on functional dental chairs with chair side lamp. Sterile dental probes and mirrors were utilized for oral examination. After obtaining informed consent from each patient, they were directed into a makeshift cubicle with the help of the research assistants. Thereafter, administration of the questionnaire as well as oral examination was carried out to ensure privacy. The dentists were assisted by trained research assistants who recorded oral examination findings into the assessment form of each respondent. The simplified oral hygiene score (OHI-S) was grouped into good (0.1 – 1.2), fair (1.3 – 3.0) and poor (3.1 – 6.0).[13] Caries experience was recorded as Decayed, Missing and Filled Teeth (DMFT).

Data management and analysis

Data obtained was entered into Microsoft excel, checked for correctness and exported to IBM-Statistical Package for the Social Sciences (SPSS) version 21.0 for analysis. Numeric data such as age and DMFT score were summarised by mean, standard deviation and modes. For the purpose of analysis, age was regrouped into young adults (17 – 34years), middle age adults (35 – 64 years) and the elderly (≥ 65 years).[14,15] Categorical variables were summarised using proportions and percentages. Pearson Chi-square was applied to test for associations between categorical variables at 95% confidence interval with test for significance, p set at <0.05.

RESULTS

The screening program attracted 341 individuals. However, a total number of 264 individuals participated in the study. This gave a response rate of 77.1%. The age of the study participants ranged from 17 – 90 years with the modal age being 25 years. The mean age was 41.72 ± 17.42 years. The majority of the participants were males 159 (60.5%), middle-aged adults 125 (47.5%) and 169 (64.3%) had tertiary education (Table 1).

Concerning awareness of dental care services; 232 (88.2%) of the participants were aware prior to the oral health screening program. Of this number, 28.9% acquired the awareness through the social media. Other respondents were informed through friends, family, schools, television or radio, and a combination of the above sources (Figure 1). Of the study participants who were aware of orthodox dental care services, 113 (43.0%) had visited the dentist and toothache 79 (69.9%) was the major reason for dental visits. Also, 175 (66.5%) of them had experienced dental/oral pain of which 83 (47.4%) and 55 (31.4%) went to see the dentist and self-medicated respectively (Table 2).

Table 1: Socio-demographic characteristics of study participants

Socio-demographic characteristics	Frequency (n)	Percent (%)
Age group (age range in years)		
Young adults (17 - 34)	108	41.1
Middle age (35 - 64)	125	47.5
Elderly (≥ 65)	30	11.4
Sex		
Male	159	60.5
Female	105	39.5
Educational level		
Primary	42	16.0
Secondary	52	19.8
Tertiary	169	64.3
Total	263	100.0

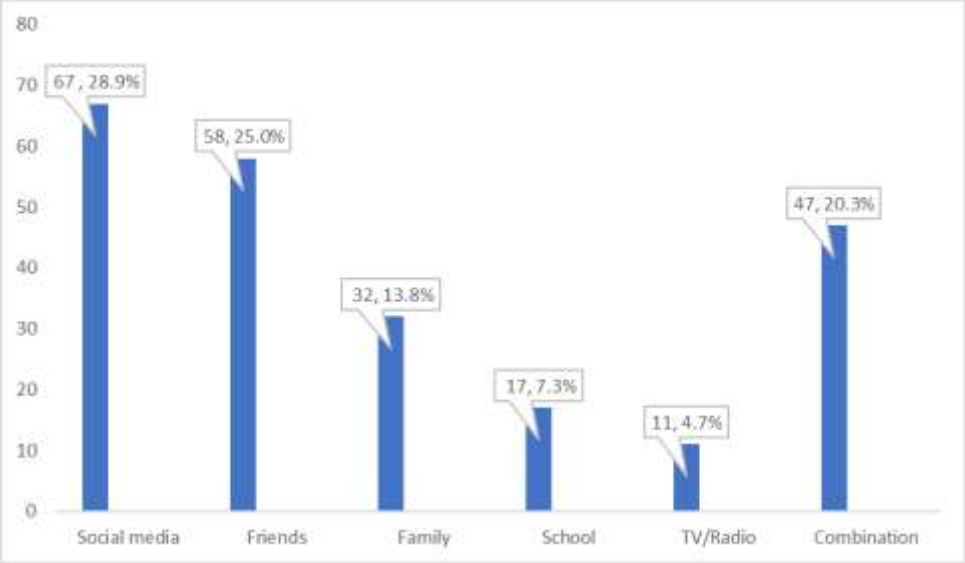

Figure 1: Diagram showing the media of acquisition of awareness of dental care services

Table 2: Dental visit and illness behaviour of study participants who had awareness of dental care services

Behavioural characteristics	Frequency (n)	Percent (%)
Consultation with dentist		
Yes	113	43.0
No	119	45.2
Not sure	31	11.8
Total	**263**	**100.0**
If yes, reason for dental clinic visit		
Routine check up	22	19.5
Toothache	79	69.9
Trauma	6	5.3
Others	6	5.3
Total	**113**	**100.0**
Experienced dental/oral pain		
Yes	175	75.4
No	57	24.6
Total	**232**	**100.0**
If yes, what did you do first on experiencing oral pain?		
Consulted a doctor	15	8.6
Consulted a dentist	83	47.4
Went to the pharmacy	8	4.6
Self-medicated	55	31.4
Others	14	8.0
Total	175	100.0

Table 3: Association between socio-demographic characteristics and awareness of dental care services

Variable	Awareness of dental care services Yes n (%)	No n (%)	Total n (%)	χ2	p-value
Age group					
Young adults	99 (91.7)	9 (8.3)	108 (41.1)	4.129	0.145
Middle age	105 (84.0)	20 (16.0)	125 (47.5)		
Elderly	28 (93.3)	2(6.7)	30 (11.4)		
Total	**232 (88.2)**	**31 (11.8)**	**263 (100.0)**		
Sex					
Male	142 (89.3)	17 (10.7)	159 (60.5)	0.464	0.311
Female	90 (86.5)	14 (14.3)	104 (39.5)		
Total	**232 (88.2)**	**31 (11.8)**	**263 (100.0)**		
Educational status					
Primary	29 (69.0)	13 (31.0)	42 (16.0)	21.084	< 0.001*
Secondary	44 (84.6)	8 (15.4)	52 (19.8)		
Tertiary	159 (94.1)	10 (5.9)	169 (64.3)		
Total	232 (88.2)	31 (11.8)	263 (100.0)		

**Statistically significant*

Oral examination revealed that 107 (40.7%) of the participants had good oral hygiene, 135 (51.3%) had fair oral hygiene while 21 (8.0%) had poor oral hygiene. The prevalence of caries was 28.5% with a mean DMFT of 1.01 ± 1.64. Decayed teeth, missing teeth and filled teeth contributed 44.8%, 49.6% and 5.6% respectively to the mean DMFT value.

The relationship between awareness of orthodox dental care services and socio-demographic characteristics of the participants was such that a higher proportion of those with tertiary level of education were aware of dental care services compared to others ($p < 0.001$). The relationship between other sociodemographic characteristics and awareness of dental care services was not statistically significant (Table 3).

Table 4: Association between oral health status and awareness of dental care services

Oral health status	Awareness of dental care services Yes n (%)	No n (%)	Total n (%)	χ2	p-value
Oral hygiene					
Good	93 (86.9)	14 (13.1)	107 (40.7)	0.560	0.768
Fair	121 (89.6)	14 (10.4)	135 (51.3)		
Poor	18 (85.7)	3 (14.3)	21 (8.0)		
Total	**232 (88.2)**	**31 (11.8)**	**263 (100.0)**		
Caries presence					
No	166 (88.3)	22 (11.7)	188 (71.5)	0.005	0.548
Yes	66 (88.0)	9 (12.0)	75 (28.5)		
Total	232 (88.2)	31 (11.8)	263 (100.0)		

The association between oral examination findings and awareness of orthodox dental care services showed that a non-dominant proportion of participants with caries had dental awareness in comparison with those without dental caries (Table 4).

DISCUSSION

This study assessed the awareness of dental care services as a component of healthcare among adult residents of Ondo city in Nigeria. Findings from this study showed that the majority of the participants were aware of dental care services as a component of healthcare. The major contributor to the source of awareness was social media. This finding enjoys

support from a study in the Middle East[16] on the emerging dominant role of social media in promoting oral health. Contrasting report to this was observed among dental patients attending a major tertiary health institution in the country where the dentist was the major source of oral health information.[17] The differences in the two studies may be ascribed to the increasing popularity of social media in dissemination of information in the present age. Friends and family came next to social media as the source of awareness of dental care services. This is impressive as they have been reported by others as important sources of oral health information.[18] Television and radio made the least contribution in acquisition of awareness of dental care services by the participants. This may be a pointer to the poor oral health information content of the available television and radio programme at present as these routes had been reported to be a major source of oral health education in the country.[19] The importance of incorporating mass media as a form of oral health information has been recommended.[17]

Dental visits were suboptimal in participants who had awareness of dental care services. Although awareness has been noted as an early precursor for behavioural change,[10] other intermediary factors like self-perceived susceptibility to oral disease, access, cost and benefits of dental care uptake can modify desired behavioural outcomes.[20] This may account for the observation with respect to dental visits in this study. Furthermore, dental visits were mainly prompted by toothache. This is in agreement with previous studies.[5, 21-23] This finding has been blamed on the notion held by the Nigerian populace that clinic visits are pointers to ill-health.[12] Hence, dental visits by individuals are delayed until the onset of pain or the pain becomes unbearable. The majority of the study participants who had awareness of dental care services rightfully sought dental care on dental/oral pain experience. This observation is logical as awareness is linked with knowledge to exhibit desired behaviour.[20]

The level of education of the people had a direct relationship with their awareness of dental care services, as participants with less of formal education were less likely to have awareness of dental care services relatively. Individuals with a higher level of education were more likely to be exposed to information about dental care and oral health preventive measures.[5, 24] Furthermore, report of lack of awareness and complete ignorance of oral health amongst the common people with little or no formal education in Mumbai [25] corroborates our findings.

Less than half of the study participants had good oral hygiene, corroborating the results of previous studies in similar Nigerian populations.[26] The prevalence of caries (28.5%) observed in this study is within the reported Nigerian prevalence range of 22.6% and 35.5% [26-27]. Poor dental awareness has been suggested to be a major contributor to the observations in prior studies.[11-12] However, in this study, the noted large spread of dental awareness in the study participants had no influence on the oral health status. This observation calls to attention the potential limitations of focusing solely on education to bring about behavioural change beneficial to oral health.[28] Consequently, there is the need for multi-factorial approach in precipitating good oral health behaviour as advanced by health promotion.[28]

CONCLUSION

This study showed that awareness of dental care services among adult residents in Ondo city was high, although it did not reflect on their oral health status and less than half of those aware had consulted the dentist. It was however associated with higher educational qualification.

The role of social medial in promoting awareness of dental care services was evident. However, there is a need to harness the potentials of other media of acquisition of dental care awareness as well as direct attention to other determinants vital to facilitate significant change in behaviour and promotion of oral health.

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Conflict of interest
None declared

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