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Sources and Factors Related to Oral Health-Care Information Among Dental Patients of a Teaching Hospital in Ibadan, Nigeria

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Abstract

Background: The World Health Organization has described oral diseases as a global health problem in developing countries and this is mainly attributed to low level of oral health awareness. It, therefore, becomes imperative to investigate how people are informed about oral health care.

Aim: To determine the sources of oral health-care information and predictors of oral health awareness among individuals seeking dental care at a major tertiary health institution in sub-Saharan Africa.

Methods: A cross-sectional study was conducted among patients aged 16 years and older attending the dental outpatients of a major teaching hospital using structured questionnaires. Data obtained were analyzed with SPSS version 23.

Results: A total of 292 patients with a mean age of 38.4 ($SD = 16.3$) years participated in the study of which 188 (64.4%) had been educated about oral health prior to the dental consultation. The major source of oral health-care information was dental clinics for 174 (92.6%) participants. The educators or resource persons were mainly dentists 105 (55.9%) and nurses or therapists 67 (35.6%). Females were more likely to have received oral health-care information (odds ratio [OR] = 1.8, CI [1.1, 3.0], $p = .021$). Those with previous dental visits were also more likely to have received information about oral health care ($OR = 2.6$, CI [1.6, 4.2], $p < .001$).

Conclusion: Dental clinics and dentists were the major sources of oral health-care information; being female and previous dental visits were significant positive predictors of being a recipient of oral health-care information. Dental public health education through mass and social media should be made a priority to improve access to oral health-care information.

Keywords

oral health care, oral health education, health information, health awareness, dental patients

Introduction

The development and establishment of healthy oral health habits and practices are highly important for good oral health.[1] Acquisition of healthy oral habits and behavior are, however, influenced by the oral health-care information available to individuals to educate them about their oral health.[2,3] This is corroborated by a report that poor oral health status was associated with low level of awareness among Nigerians.[4] Oral health awareness is determined by several factors such as the level of knowledge of oral health as well as sources of information to the target population.[5] Worldwide, oral health-care information can be obtained through several means, which include schools, mass media, caregivers, families, friends, dentists, and dental personnel among others.[6–8]

Furthermore, exposure to oral health-care information, with resultant acquisition of knowledge of oral health has been a strong factor associated with better oral health status.[5] Although good oral health-care practices including dental visitations for preventive reasons have been associated with better oral health status, this is not the case in low-income settings where dental care-seeking behavior is synonymous with oral problems and pain.[9,10] Importantly, these may be consequences of lack of awareness and probable nonavailability of oral health-care information to educate the majority of the population. Investigating the availability

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of oral health-care information among Nigerians, therefore, becomes pertinent. More so, that sparse information offering insight into this aspect of health promotion exists in sub-Saharan Africa. In addition, knowledge of factors influencing the availability of oral health-care information to the populace is almost nonexistent in our environment. Investigating the sources of oral health-care information and factors influencing its availability will be of enormous benefits to public health practice as the factors will be put into consideration when planning oral health intervention programs to improve oral health awareness. This study, therefore, assessed the sources of oral health-care information and predictors of oral health awareness among individuals seeking dental care in a major tertiary health institution in sub-Saharan Africa.

Methods

This study was conducted at the dental outpatients of the University College Hospital, Ibadan, Nigeria, a tertiary health institution that receives patients referred from other levels of health care. The study participants were patients aged 16 years and older attending the hospital's dental clinic for the first time and who were not in pain or any form of distress as at the time of the study and who consented to participate. Those who were unable to fill the questionnaire due to communication barrier were excluded from the study. A minimum sample size of 243 study participants was calculated for the study using a prevalence rate of 20.3% from a previous study[11] and the Kish Leslie formula for sample size calculations for cross-sectional studies.[12] The data collection tool was semistructured questionnaire, which was both self and interviewer administered. The questionnaires were pretested among patients who were non-first-time attendees of the periodontology clinic of the dental center and were not part of the final study. The questionnaire comprised of questions that were categorized under three sections. Section A assessed the patients' sociodemographic characteristics such as age, gender, marital status, and occupation, which were further classified into Class I to III based on a modification of Office of Population Censuses and Surveys that has been used in the environment.[13] Section B assessed the sources of oral health-care information to the patients and the third section had questions on the designation of the person(s) who gave the oral health-care information and the major information received. Prior to administration of the questionnaire, the purpose of the study was explained to the patients as a group while waiting to be seen by the dentist at the reception or individually as the case may be. In cases of self-administration of the questionnaire, the research assistant guided the participants in order to minimize nonresponse to the questions.

Data obtained were subjected to statistical analysis using SPSS version 23. Univariate analysis was carried out and the output described using proportions and percentages for categorical variables and means (with standard deviations [*SD*]) for continuous variables. For bivariate analysis, test of association between variables was conducted using Chi square statistics and the level of significance was set at $p < .05$. Multivariate analysis was performed with logistic regression, and Wald test was used to determine the significance of the variables. Ethical approval for the study was obtained from the Institution's Ethics Review Board.

Results

A total of 292 patients participated in the study. There were 145 (49.7%) males. The mean age of the study participants was 38.4 ($SD = 16.3$) years and 161 (55.1%) were married. Most of the participants (251, 86.0%) were of the Yoruba tribe—the predominant tribal group in the city, 221 (75.7%) had tertiary education, and 121 (41.4%) were skilled workers (Table 1).

Previously, many (188, 64.4%) of the study participants had been educated about their oral health, out of which 174 (92.6%) reported that dental center was the major source of information (Table 2).

The instructors or educators were mainly dentists (105, 55.9%) and others were nurses or therapists (Figure 1).

Table 1. Sociodemographic Characteristics of the Study Participants.

Sociodemographic variable	Frequency	%
Gender		
Male	145	49.7
Female	147	50.3
Age (years)		
≤34	135	46.2
35–44	70	24.0
45–54	34	11.6
55–64	24	8.3
≥65	29	9.9
Occupational class		
Skilled	121	41.4
Unskilled	64	21.9
Dependent	107	36.6
Marital status		
Single	113	38.7
Married	161	55.1
Widowed	14	4.8
Divorced	4	1.4
Tribe		
Yoruba	251	86.0
Igbo	22	7.5
Others	19	6.5
Educational level		
Primary	7	2.4
Secondary	30	10.3
Postsecondary	24	8.2
Tertiary	221	75.7
None	10	3.4

Table 2. Sources of Oral Health-Care Information.

Sources of information	Frequency	%
Dental clinic	174	92.6
School	6	3.2
Mass media	3	1.6
Church	3	1.6
Market	1	0.5
Place of work	1	0.5
Total	188	100.0

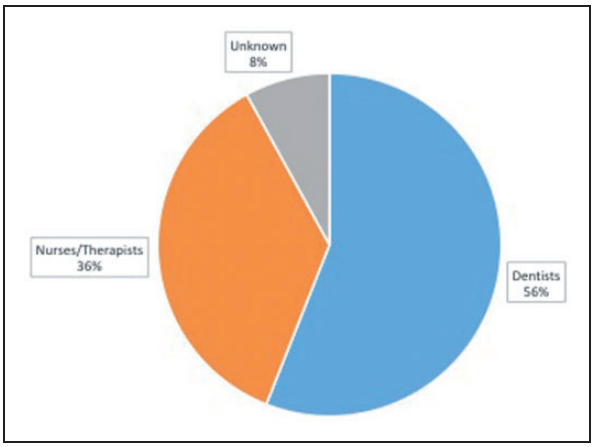

Figure 1. Educators of study participants about oral health.

The oral health education was largely on key messages of oral health education, which were oral hygiene, dental consultation, and diet. It also involved demonstration of tooth cleaning procedure.

Bivariate analysis of the data showed that sex, occupational class, and past dental visit were significantly associated with having been educated about their oral health. A higher proportion of females had been educated about their oral health compared with males (70.7% vs. 57.9%, $p = .022$). A higher proportion of the participants who were skilled workers (73.6%) had been educated about their oral health compared with unskilled workers (65.3%) or dependents (58.9%) ($p = .021$; Table 3).

Those who had previously been to a dental clinic were also more likely to have received oral health education ($p < .001$; Table 3). Multivariate analysis showed that being female, skilled worker, or having previously consulted a dentist were predictors of being a recipient of oral health education (Table 4). Females were nearly twice as likely to have received oral health education as males ($OR = 1.8$, 95% CI [1.1, 3.0], $p = .023$). Skilled workers were also twice as likely as others to have received oral health education ($OR = 1.9$, 95% CI [1.1, 3.5], $p = .024$). Similarly, the odds of having received oral health education was three times greater among those who had consulted a dentist in the past compared with those who had not done so before the index visit to the dental center ($OR = 2.6$, 95% CI [1.6, 4.2], $p < .001$).

Table 3. Factors Associated with Having Received Oral Health Information.

	Has received oral health information			
Variable	Yes, *n* (%)	No, *n* (%)	x^2	*p*
Gender				
Female	104 (70.7)	43 (29.3)	5.230	.022[a]
Male	84 (57.9)	61 (42.1)		
Total	188 (64.4)	104 (35.6)		
Previous dental visits				
Yes	122 (73.5)	44 (26.5)	13.924	<.001[a]
No	66 (52.4)	60 (47.6)		
Total	188 (64.4)	104 (35.6)		
Occupational class				
Skilled	89 (73.6)	32 (26.4)	7.698	.021[a]
Unskilled	36 (65.3)	28 (43.8)		
Dependents	63 (58.9)	44 (41.1)		
Total	188 (64.4)	104 (35.6)		

[a]Statistically significant.

Table 4. Predictors of Being Recipients of Oral Health-Care Information.

Variable	Categories of variable	*OR*	CI	*p*
Gender				
	Female	1.8	[1.1, 3.0]	.023[a]
	Male[b]			
Previous dental visits				
	Yes	2.6	[1.6, 4.2]	<.001[a]
	No[b]			
Occupational class				
	Skilled	1.9	[1.1, 3.5]	.024[a]
	Unskilled	0.8	[0.5, 1.7]	.753
	Dependents[b]			

Abbreviations: *OR*, odds ratio; CI, confidence interval.
[a]Statistically significant.
[b]Reference category for comparison.

Discussion

This study assessed the sources of oral health-care information among dental patients attending a major tertiary health-care center in Nigeria. The findings showed that the major source of oral health-care information mentioned by the patients was the dental center. In addition, the dentist was the main personnel involved in the educational activities as observed from our results. This finding suggests the dependence on dentists for oral health-care information. The finding is corroborated by a previous study in Nigeria

where the dental center was the source of information about implant as a tooth replacement option.[14] Similar finding was also documented in Iran.[15] The dependence on the dentists for enlightening the populace is fraught with problems of large population coverage due to the low dentist population ratio in the country and may have contributed enormously to the existing low level of oral health awareness. On the other hand, limited sources of oral health-care information apart from what dental practitioners provided may be partly responsible for the high prevalence of preventable common oral diseases such as periodontal diseases in the country.[16,17]

Furthermore, many of those who sought dental care were not educated about their oral health prior to their visit to a dental center. This becomes worrisome as only few consult with the dentist in this environment.[10] In addition, the dental care-seeking behavior is pain and problem driven,[9,10,18] further contributing to high probability that only a few may get educated about their oral health if other sources of oral health awareness are not improved upon. Exploring the role of other personnel as noted in the study such as public health nurses and therapists is important. The roles of these personnel in educating the populace especially in the face of shortage of dentists in the country become imperative. Involvement of these personnel to enhance wider coverage of disseminating oral health-care information will go a long way to improve the level of awareness among the Nigerian populace.

The school, place of work, and the market were less frequently mentioned avenues of receiving oral health-care information by respondents. These are other avenues that must be borne in mind when planning oral health education programs at the community level. The school has been noted as a major source of health education.[7] The school becomes more important among children and teachers due to the fact that both of them spend a significant part of their time there. Others sources of information about oral health that have been documented by other authors, which is not the case in the study, are the home, families, and relatives. In Michigan, dentists and dental clinics were rated second to home and family members as a source of oral health-care information.[19] Furthermore, in Saudi Arabia, the respondents mentioned the home most frequently as source of information about implants as a tooth replacement option.[6] The finding from the latter study suggests that the home is an important avenue for exchanging information. It will thus be worthwhile during health education sessions to mention the importance of passing down information received by the participants to family members and friends. This is corroborated by the finding of a higher compliance rate of preventive oral health behavior such as dental flossing acquired through family members.[20]

The mass media was another less frequently mentioned source of oral health-care information. The role of the mass media in providing oral health-care information is negligible when compared with findings from Iran[15] and Sri Lanka.[7] In Iran, the proportion of individuals reporting mass media as their source of oral health-care information was comparable to that of those who mentioned dentists as their source of information.[15] The latter study in Iran showed that their setting is different from that in Nigeria as they are not totally dependent on dentists for oral health education. In addition, findings from Sri Lanka showed that mass media were the major sources of information about prevention of oral cancer.[7] The role of mass media as an important alternative will need to be explored.

The findings showed that female gender, previous dental visits, and being a skilled worker were significant predictors of being a recipient of oral health-care information. Female gender has been reported as a predictor of higher oral health literacy scores.[15] Furthermore, women are more closely involved with taking care of children and thus bear greater responsibility in acquiring information to improve their health. The female gender also has been associated with good oral health practices and invariably is more conscious about oral health and general health.[18] Skilled workers also had a greater odd of being educated about oral health. Individuals in high occupational class had been documented previously to exhibit better oral health practices than those in the lower classes.[10] The fact that individuals in this occupational class are well informed about their oral health may be responsible for the good oral health practices reported among them. In addition, it may also be linked to the level of education that these individuals must have attained to be in that occupational class. Higher educational qualification is a significant predictor of higher literacy scores.[15] Previous dental consultation was also a significant factor associated with being informed about oral health. This is not surprising since one of the roles of the dentist is provision of oral health-care information to educate his or her patients either for prevention of oral diseases or for curative purposes. Importantly, dentists being the major source of oral health-care information to the participants as well as the dental center serving as the main site of awareness are pointers to the dependence on dentists as educators warranting other sources of information that must be investigated and utilized if the level of oral health awareness in Nigeria and similar settings is to improve in the future.

A major limitation of the study is that the use of cross-sectional study design limits the cause effect interpretation of the results of this study. However, cross-sectional study is a building block for other studies to provide greater evidence. Analytical studies, on the other hand, could have been more complex with several confounders that might have affected the interpretation of the results as well.

Conclusion

Dental clinics and dentists were the major sources of oral health-care information; being female and previous dental visits were significant positive predictors of being a recipient

of oral health-care information. Dental public health education through mass and social media should be made a priority to improve access to oral health-care information.

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References

1. Kumar TS, Dagli RJ, Mathur A, et al. Oral health status and practices of dentate Bhil adult tribes of southern Rajasthan. *India Int Dent J* 2009; 59: 133–140.
2. Jain S, Bhat N, Asawa K, et al. Effect of training school teachers on oral hygiene status of 8-10 years old government school children of Udaipur City, India. *J Clin Diagn Res* 2016; 10: ZC95–ZC99.
3. Prabhu S and John J. Oral health education for improving oral health status of school children—a systematic review. *J Dent Med Sci* 2015; 14: 101–106.
4. Sofola O. Implications of low oral health awareness in Nigeria. *Niger Med J* 2010; 51: 131.
5. Gaszynska E, Klepacz-Szewczyk J, Trafalska E, et al. Dental awareness and oral health of pregnant women in Poland. *Int J Occup Med Environ Health* 2015; 28: 603–611.
6. Al-Johany S, Al Zoman HA, Al Juhaini M, et al. Dental patients' awareness and knowledge in using dental implants as an option in replacing missing teeth: A survey in Riyadh, Saudi Arabia. *Saudi Dent J* 2010; 22: 183–188.
7. Ariyawardana A and Vithanaarachchi N. Awareness of oral cancer and precancer among patients attending a hospital in Sri Lanka. *Asian Pac J Cancer Prev* 2005; 6: 58–61.
8. Zhu L, Petersen PE, Wang HY, et al. Oral health knowledge, attitudes and behaviour of adults in China. *Int Dent J* 2005; 55: 231–241.
9. Lawal FB, Ibiyemi O, Taiwo JO, et al. Dental care seeking behaviour of children in a rural Nigerian community. *Afr J Med Med Sci* 2016; 45: 143–149.
10. Lawal FB, Taiwo JO and Oke GA. Oral health practices of adult inhabitants of a traditional community in Ibadan, Nigeria. *Niger J Med* 2013; 22: 212–217.
11. Lasisi TJ, Lawal FB and Fasanmade AA. Oral health awareness, practices and status of patients with diabetes attending a tertiary health institution in Nigeria. *Niger J Med* 2016; 25: 307–314.
12. Kish L. *Survey sampling*. New York, NY: Wiley Interscience Publication, 1965.
13. Lawal FB, Arowojolu MO. Sociodemographic status of patients seeking routine scaling and polishing in a resource challenged environment. *West Afr J Med* 2015; 34: 193–196.
14. Gbadebo OS, Lawal FB, Sulaiman AO, et al. Dental implant as an option for tooth replacement: The awareness of patients at a tertiary hospital in a developing country. *Contemp Clin Dent* 2014; 5: 302.
15. Sistani MM, Yazdani R, Virtanen J, et al. Oral health literacy and information sources among adults in Tehran, Iran. *Community Dent Health* 2013; 30: 178–182.
16. Lawal F and Dosumu E. Periodontal status and treatment needs of primary school teachers in the absence of formal school oral health programme. *Niger Dent J* 2014; 22: 32–37.
17. Taiwo JO, Jeboda SO, Motayo TO, et al. Periodontal health of the elderly people in South East local government area in Ibadan, Nigeria. *Afr J Med Med Sci* 2004; 33: 285–291.
18. Mathur MR, Tsakos G, Parmar P, et al. Socioeconomic inequalities and determinants of oral hygiene status among Urban Indian adolescents. *Community Dent Oral Epidemiol* 2016; 44: 248–254.
19. Woolfolk MW, Lang WP and Faja BW. Oral health knowledge and sources of information among elementary schoolchildren. *J Public Health Dent* 1989; 49: 39–43.
20. Luciano M, Overman VP, Frasier PY, et al. Survey of oral health practices among adults in a North Carolina Hispanic population. *J Dent Hyg* 2008; 82: 20.

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