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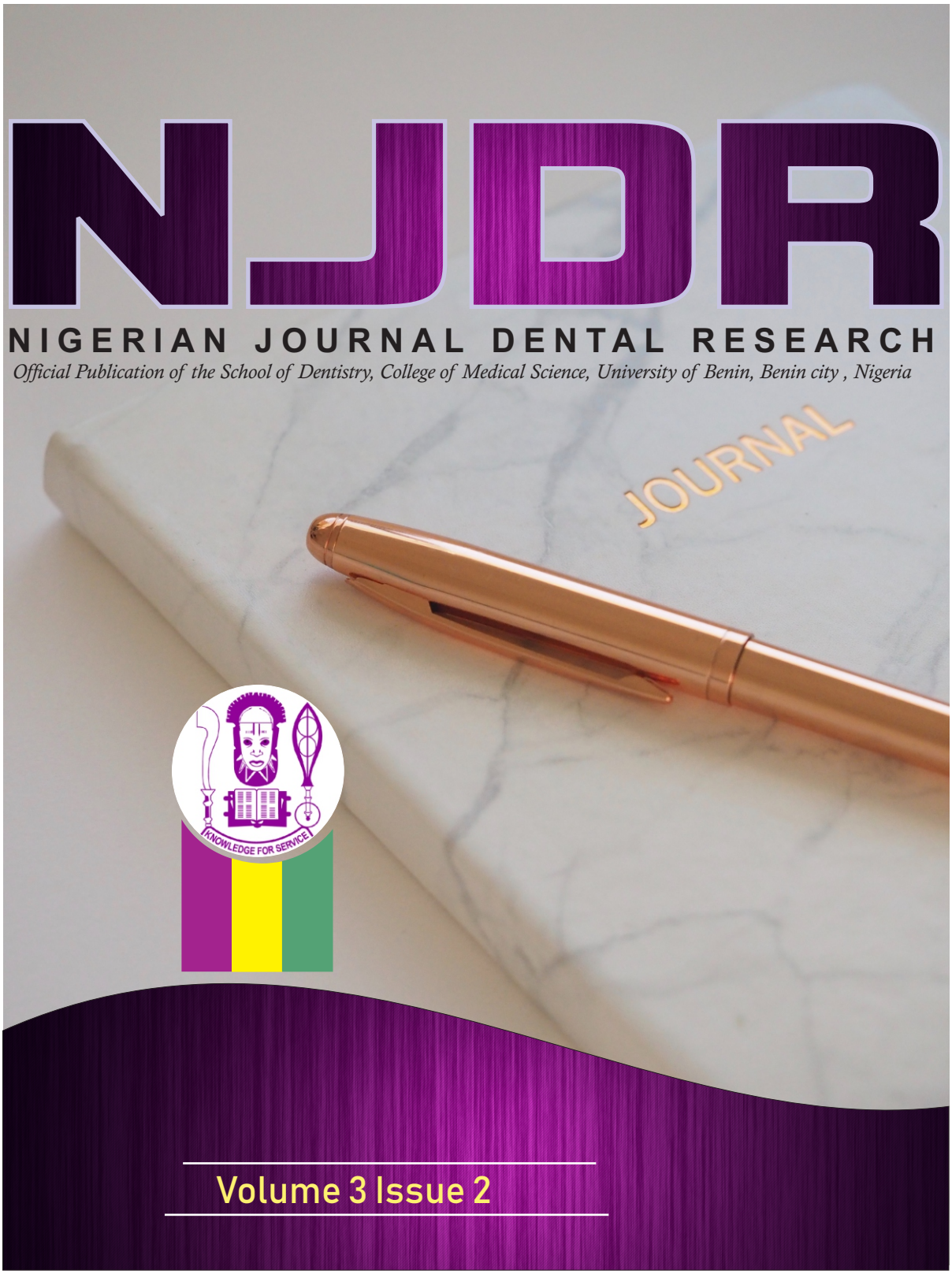

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Dental Service Perception and Utilization in a Tertiary Hospital

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ABSTRACT

Objective: To determine the perception and utilization of dental services among staff of a tertiary hospital.

Methods: A descriptive cross sectional study conducted among staff of the University of Benin Teaching Hospital, Benin City. Data was collected with the use of a self-administered questionnaire to elicit information such as socio-demographic, perception and usage of dental services as well as reasons for non-regular usage of dental services. Chi-squared test was used to test associations between variables at 5% level of significance.

Results: Data from three hundred and eight six (386) participants were recorded and analyzed. Those within the 21–30years age group were in the majority (38.3%), females constituted 54.6% and with majority of the respondents (70%) with tertiary level educational as well those in non-clinical departments (69.7%).The overall perception revealed that 34.0% have high perception for dental services with only 4.7% having good dental services utilization. Binary logistic regression of perception revealed that, those aged 41-50 are less likely with odds of 0.105, (P <0.001), educational level below tertiary are less likely to have high perception with P < 0.05. On utilization, those aged 41-50,educational level below tertiary are less likely, P < 0.05, while those in the non-clinical department are more likely to utilize dental services with odds' 3.036 and P=0.001.

Sixty one percent had visited the dentist with 33% of such visits due of tooth pain. Lack of time, absence of symptoms, complex hospital routine and fear or anxiety for dental procedures accounted for most reasons for non- regular utilization of dental services.

Conclusion: Bivariate logistic regression revealed that older age and higher educational levels are predictors of perception; and that older age, educational levels and type of department were predictors of dental service utilization and they were statistically significant P<0.05.

Keywords: Perception, Utilization, Dental services, Staff

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Oral health is an important and essential part of overall health and quality of life.[1]Periodontal diseases and dental caries are the commonest oral diseases globally.[2] However, the greatest burden of these diseases are found to be in developing countries, including Nigeria.[3] Normative needs, dentists' assessment of dental status, are traditionally used to provide measures of dental health status and for policy decisions. It has been suggested that perceived need, perceptions regarding the need for dental care, play a key role in whether people will, in general, seek dental care, and that a lack of perceptions regarding need constitutes an important barrier to the utilization of dental care services. Perception of a good dental service may be determined by patient's experience with dental health care services provided and this has an impact on the success of the dental practice. Criteria for good dental practice as expressed by various patients, influence their behavior in terms of compliance with clinical advice, anxiety for dental procedures and more utilization of dental care.[4] Various studies have shown that patient's satisfaction with oral health care may be affected by the characteristics of the delivery system, treatment outcome, availability of and accessibility to care, cost, and continuity of care, interpersonal factors and pain associated with care.[4,5]

Dental services refer to services provided by a qualified dental professional aimed at preventing, diagnosing, and treating diseases and disorders of the oral cavity and related structures.[6] Dental service utilization is the percentage of the population that access dental services in a specified period,[7, 8] and it is seen as an integral facilitator of oral health.[9] Usage of dental services is one of the indicators of oral health behavior as it reveals the number of visits per year of the number of people with at least one visit during the previous year.[11] Regular utilization of dental services is

required in order to attain optimum oral health, which is an important component of general health.[2] Usage of dental services amongst Nigerians in general is poor and service utilization is often motivated by pain and need for emergency care.[3]

Studies from the African continent highlight poor usage of dental services across urban and rural population as a result of economic difficulties, dwindling health funding, poor perceived oral needs, misconceptions about oral health, inadequate facilities and shortage of dental practitioners.[7-10] Patients' satisfaction has also been considered an important indicator of the efficient utilization of health services, dental services inclusive.[8] Civil Servants in the tertiary health centers constitute a proportion of workforce in Nigeria. Therefore as a community of Nigerian workforce, information regarding dental health care and services among them may reveal the situation of the same in the larger community.[2]

Studies have been carried out in relation to the utilization of dental services amongst various populations in different locations.[7-10] However, literature search through general data search, focused searches and references did not reveal research work on perception and utilization of dental services among the entire staff, clinical and no clinical of a tertiary hospital.

The objectives of this study were to assess the perception of staff of the University of Benin Teaching Hospital towards dental services, determine level of utilization as well as barriers to regular utilization of dental services.

MATERIAL AND METHODS

Ethical consideration

The protocol for this study was reviewed and approval granted by the Ethics and Research Committee of the University of Benin, Benin City, Nigeria. Written informed consent was obtained from participants, using the Nigerian National Health Research Ethics Code model.[12]

Study design/setting

This descriptive cross sectional study was conducted among staff of the University of Benin Teaching Hospital (UBTH), Benin City, Nigeria between April and May, 2015. UBTH is a tertiary hospital with various specialized units and departments including the full complements of all the dental departments, paramedical and support services. The hospital renders health care services to people in the immediate and neighbouring communities and states. It also serves as a center for training and research

Target population

The target population for this study was all staff of University of Benin Teaching Hospital.

Selection criteria

Staff of the University of Teaching Hospital that agreed and consented were included while non-staff, staff that didn't consent and staff in the dental departments were excluded

Sample size/Sampling

The minimum sample size calculated based on the sample size calculation formula[13] was 386 and a multistage sampling technique was used to select the study participants. The ratio of non-clinical staff to the clinical staff was 7:3, so a disproportional stratified random sampling was first utilized. The total number of departments outside dental departments was 29 i.e 12 non-clinical and 17 clinical departments. For equal representation for each of the strata selected, each strata was divided by the existing departments that constitutes it. Determined sample in each department was then selected by simple random sampling.

Data collection tool

Data collection was done using a quantitative method with the use of a self-administered questionnaire. The questionnaire which was anonymous with no identifiers and in four sections was used to elicit information such as: Socio-demographic profile of respondents, perception of dental services, and usage of dental services as well as barriers to regular utilization of dental services.

Data analysis

All data were coded, entered and analyzed using IBM SPSS version 21. Descriptive data were expressed as frequencies and percentages. The data were analyzed and presented in form of statements and frequency tables. The statistical tests to determine associations were made with the use of Chi-square ($\chi 2$) and logistic regression.

RESULTS

A total of three hundred and eight six respondents took part in the study, more of the participants 148(38.3%) were aged 21-30 with the least 29(7.5%) aged less than 21 years. Females were over half of the study population 218 (54.6%). Majority had tertiary level of education, in non-clinical departments and are Christians (Table 1)

The result of the overall perception revealed that majority (66.0%) have low and 34.0% have high perception for dental services (Figure 1). Bivariate analysis of perception and demography reveal that most of the respondents (86.4%) aged 41-50 years have low perception while (40.5%) was reported to have high perception among those aged 21-30 years. High perception was

observed among females (39.6%), those with tertiary level of education (41.7%), clinical department (40.6%). The study revealed that, the relationship between perception and age group, sex, level of education and departments was statistically significant.(P <0.05) (Table 2).

The result of the overall utilization of dental services by the respondents revealed that 33.7% have poor, 41.7% fair and just 24.6% have good utilization of dental services (Figure 2). Bivariate analysis of dental service utilization and demography reveal that most (29.1%) of those aged 21-30 years have good utilization while majority (69.5%) among 41-50 years had poor utilization. Good utilization was found mostly among females (30.2%), those with tertiary level of education (26.0%), non-clinical department (28.0%). The study revealed that, the relationship between dental service utilization and age group, sex, level of education and departments was statistically significant.(P <0.05) (Table 3)

A binary logistic regression analysis was done to determine the demographic predictors of perception and utilization. The report on perception revealed that those aged range 41 – 50 years are less likely to have a high perception with an odds' of 0.105. The association was statistically significant (p < 0.0001) (95%CI= 0.032 – 0.349). Males are less likely to have a high perception with an odds' of 0.615. The association was not statistically significant (p = 0.056) (95%CI= 0.374 – 1.013). Respondents with secondary level ($P_{2)}$ and primary (P_1) are less likely to have high perception with an odds' of 0.316 ($P_{2)}$ and 0.073 (P_1). The association was statistically significant (P_2= 0.001) (95%CI= 0.157 – 0.638) and (P_1= 0.018) (95%CI= 0.008 – 0.642). And those with in the non-clinical departments are less likely to have high perception with an odds' of 0.668. The association was not statistically significant (P_2= 0.140) (95%CI= 0.391 – 1.142). (Table 4). Moreso, the report on utilization revealed that those aged range 41 – 50 years are less likely to utilize dental service with an odds' of 0.067. The association was statistically significant (P = 0.001) (95%CI= 0.014 – 0.309). Males are less likely to utilize dental service with an odds' of 0.738. The association was not statistically significant (P = 0.276) (95%CI= 0.428 – 1.275). Respondents with secondary level ($P_{2)}$and primary (P_1) are less likely to utilize dental service with an odds' of 0.288 ($P_{2)}$ and 0.072 (P_1). The association was statistically significant (P_2= 0.001) (95%CI= 0.140 – 0.591) and (P_1= 0.018) (95%CI= 0.008 – 0.640). And those with in the non-clinical departments are more likely to utilize dental service with an odds' of 3.036. The association was statistically significant (P= 0.001) (95%CI= 1.614 – 5.711). (Table 5). Out of those that had visited or more times, one hundred and thirty one (32.8%) of the visits to the dental clinic was as a result of

Table 1: Demographic characteristics of the respondents

Variable	Frequency (n)	Percent (%)
Age (years)		
<21	29	7.5
21-30	148	38.3
31-40	119	30.8
41-50	59	15.3
>50	31	8.0
Sex		
Male	174	45.1
Female	212	54.9
Marital status		
Single	189	49.0
Married	185	47.9
Separated	11	2.8
Divorced	1	0.3
Educational status		
Primary	19	4.9
Secondary	96	24.9
Tertiary	271	70.2
Religion		
Christian	349	90.4
Muslim	35	9.1
African Traditional Religion (ATR)	2	0.5
Department		
Non-clinical	271	70.2
Clinical	115	29.8

Table 3: Socio-demographic characteristics of respondents and usage of dental services among respondents

Variable	Overall Usage				Perception		
	Good n (%)	Fair n (%)	Poor n (%)	P value	Low n (%)	High n (%)	P value
Age (years)				0.000			0.001
<21	8(27.6)	7(24.1)	14(48.3)		24(82.8)	5(17.2)	
21 – 30	43(29.1)	48(32.4)	57(38.5)		88(59.5)	60(40.5)	
31 – 40	34(28.7)	54(45.3)	31(26.0)		72(60.5)	47(39.5)	
41 – 50	3(5.1)	15(25.4)	41(69.5)		51(86.4)	8(13.6)	
>50	7(19.4)	6(22.5)	18(58.1)		20(64.5)	11(35.5)	
Sex				0.005			0.009
Male	31(17.8)	57(32.8)	86(49.4)		127(73.0)	47(27.0)	
Female	64(30.2)	73(34.4)	75(35.4)		128(60.4)	84(39.6)	
Educational status				0.000			0.000
Primary	1(5.0)	0(0.0)	19(95.0)		19(100)	0(0.0)	
Secondary	18(18.9)	26(27.4)	51(53.7)		78(81.2)	18(18.8)	
Tertiary	76(26.0)	104(38.4)	91(35.6)		158(58.3)	113(41.7)	
Department				0.004			0.001
Non-clinical	76(28.0)	78(28.8)	117(43.2)		193(71.2)	78(28.8)	
Clinical	19(16.6)	52(45.2)	44(38.2)		62(54.0)	53(46.0)	

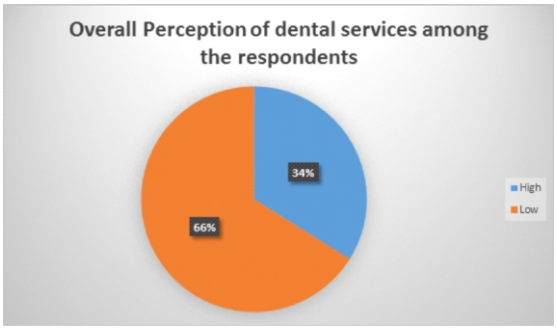

Figure 1: Overall perception of dental services among respondents

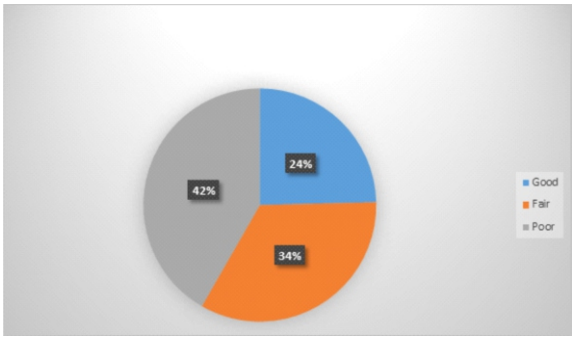

Figure 2: Overall usage of dental services among respondents

Table 5: Demographic Predictors of perception among respondents

Variables	B (regression coefficient)	P value	Odds ratio	95% C.I. for Odds ratio
				Low High
<21	-1.033	0.139	0.356	0.091-- 1.397
21- 30	-.487	0.324	0.614	0.233--1.618
31 - 40	-.767	0.131	0.464	0.172-- 1.256
41 – 50	-2.249	<0.0001	0.105	0.032 – 0.349
>50*				
Sex				
Male	-.485	0.056	0.615	0.374 – 1.013
Female*				
Educational status				
Primary	-2.621	0.018	0.073	0.008 – 0.642
Secondary	-1.152	0.001	0.316	0.157 – 0.638
Tertiary*				
Department				
Non-Clinical	-.403	0.140	0.668	0.391 – 1.142
Clinical*				

*Reference category, R^2 (coefficient of determination) = 14.1% to 19.6%

Table 5: Demographic Predictors of Utilization among respondents

Variables	B (regression coefficient)	P value	Odds ratio	95% C.I. for Odds ratio
				Low High
<21	-.126	0.849	0.881	0.240 -- 3.242
21- 30	-.389	0.452	0.678	0.246 -- 1.869
31 - 40	-.619	0.248	0.538	0.188 -- 1.538
41 – 50	-2.704	0.001	0.067	0.014 -- 0.309
>50*				
Sex				
Male	-.303	0.276	0.738	0.428 -- 1.275
Female*				
Educational status				
Primary	-2.631	.018	0.072	0.008 -- 0.640
Secondary	-1.246	.001	0.288	0.140 -- 0.591
Tertiary*				
Department				
Non-Clinical	1.111	0.001	3.036	1.614 -- 5.711
Clinical*				

*Reference category, R^2 (coefficient of determination) = 11.9% to 17.6%

Table 6: Reasons for respondents' visit(s) to dental clinic*

Variable	Frequency (n)	Percent (%)
Toothache	131	32.8
Cleaning of teeth	113	28.3
Routine dental checkup	72	18.0
Filling	69	17.3
Replacement of teeth	27	6.8
Bad breath	9	2.3
Root canal treatment (RCT)	9	2.3
Swollen gum	4	1.0
Composite restoration	3	0.8
Shocking teeth	2	0.5
To remove my tooth	2	0.5
Tooth discolouration	1	0.3

*Multiple response questions

Table 7: Barriers to regular dental service utilization*

Variable	Frequency (n)	Percent (%)
Lack of time	264	66.2
I have not had any symptom	217	54.4
Complex hospital routine	148	37.1
I have fear or anxiety for dental procedures	92	23.1
I don't think dental diseases are serious	89	22.3
Fear of injections	81	20.3
I feel dental care is expensive	79	19.8
I had earlier unpleasant experience of dental procedures	53	13.3
I have no knowledge regarding how to take care of my teeth	47	11.8
I don't have interest to take care of my teeth	19	4.8
Delay in the clinic	1	0.3

*Multiple response questions

toothache, 28.3% for cleaning, 18% for routine check-up, 17.3% for fillings, 6.8% for tooth replacement and the least reason for attendance was 0.3 % for discolored tooth (Table 6). Lack of time was a major barrier (66.2%) for the non-regular utilization of dental services. Others included absence of symptoms (54.5%), complex hospital routine (37.1%) and least was delays in clinic (0.3%) (Table 7).

DISCUSSION

This study was a cross-sectional descriptive study aimed at assessing the tertiary hospital staff perception of dental services and it's utilization as well as barriers to regular utilization of dental services. The high female preponderance observed in this study is not surprising as it has been reported in other hospital-based studies in Nigeria.[7, 11] This may be due fact that females are more concerned about dental aesthetics, [15] in particular and health in general. Most of the respondents in this present study had tertiary level of education. This is because highly educated employees dominate a tertiary institution workforce as they are needed for the smooth and efficient running of the institution.

In this study, it was observed that 34% had high perception of dental services. This however, was in stark contrast to the study done by Diah and Maharani in Indonesia where only about 2% of Indonesians perceived the need for dental treatment.[14] This may be associated with to the level of education of most respondents in this study population and also the fact that Diah and Maharani study was a national survey. A significant predictors of perception and utilization in this study was age. This finding is similar to that by Nitschke,[15] who reported that with age, a decrease in the utilization of dental services can be observed, whilst the frequency of

contact with physicians increases. Another significant finding in this study was the rise in level of perception and utilization of dental services as the level of education attained by respondents' increased. Similar findings were reported by other studies.[2,3,16,17]

Most of the respondents seen in this study visited the dental clinic because of toothache. This supports the fact that dental visits are usually motivated by pain as reported by others studies.[2, 7,16] A large proportion of the respondents also visited the dental clinic for cleaning of teeth (scaling and polishing) which is in contrast to findings in other studies.[2, 9] The pattern in this study, may be a positive outcome of the Committee on Dental Education and Health (CODEH) programmed carried out by students of the School of Dentistry of the University of Benin, which is an affiliate institution to the hospital. The students also offer relatively free scaling and polishing in order to meet with their clinical requirements. Moreso, it may also be due to ease of accessibility of dental services to the respondents in this study when compared to the respondents in the previous Nigeria study.[2] The respondents in the previous study are civil servants not in the hospital setting and may have to pay from their pockets. Accessibility may not entirely be the case as only a small proportion of respondents in a study from another center in Nigeria[11] visited the dental clinic for routine scaling and polishing even though the study was done among administrative staff in a tertiary hospital.

The overall utilization in this study is low, similar to others studies.[2, 7, 16, 17, 18] Although, respondents in the non-clinical departments have a lower perception of dental services, they have a higher proportion of good utilization of dental services when compared to the clinical respondents. This may be due to the busy schedule of the staff of the hospital and especially so for the respondents in the clinical departments. The major barrier to regular utilization of dental services was lack of time. This is in agreement with another study, [19] where lack of time was reported as the second most frequent barrier to the utilization of dental services. In this study, absence of symptoms was also a barrier to utilization. This has also been previously reported,[3] as a major factor responsible for non-utilization of dental services. Other factors that influence the usage of dental services observed in this study were complex hospital routine, fear of dental procedures, fear of injections, cost of dental care etc. which were also reported in other studies[3,20]

CONCLUSION

With increasing age and educational level below tertiary, respondents' are less likely to have a high perception and good utilization of dental services. Moreso, staff in non-clinical departments are more likely to utilize dental service. Although the overall percentage of respondents with high perception of dental services is was on the average, utilization was poor. Bivariate logistic regression revealed that age groups and educational level are predictors of dental service perception; and also that age group, educational levels and type of department; clinical or non-clinical were predictors of dental service utilization. Toothache was the major reason for dental visit and lack of time was the most reported barrier to regular utilization of dental services.

RECOMMENDATION

Hospital management should adopt ways of reducing the complex hospital routines before health care is accessed as well as expand the existing facilities in order to reduce delays in accessing oral health. More oral health educative programmes and outreaches should be done which will help increase perception and invariably utilization of dental services by civil servants in teaching hospital settings and by extension, the larger society.

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