



## Original Article

### Dental Care Utilization and Satisfaction of Residential University Students

Bamise CT<sup>1</sup>, Bada TA<sup>2</sup>, Bamise FO<sup>3</sup>, Ogunbodede EO<sup>4</sup>

<sup>1</sup>Department of Restorative Dentistry, <sup>2</sup>Department of Educational Technology, Faculty of Dentistry, Obafemi Awolowo University, Ile-Ife. <sup>3</sup>Department of Information, Archives and Library Science, University of Ibadan, Ibadan. <sup>4</sup>Department of Preventive and Community Dentistry, Faculty of Dentistry, Obafemi Awolowo University, Ile-Ife, Nigeria

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#### ABSTRACT

**Aim:** The objective of this study was to provide information on the level of utilization and satisfaction of residential university students with the dental services provided by the dental clinic of a teaching hospital. **Volunteers and Material:** A stratified sampling technique was used to recruit volunteers from the outpatient clinic of the Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife, Nigeria. Information was collected by a self-administered questionnaire composed of questions that measure the level of utilization and satisfaction with the dental services provided. Questionnaires were provided to 650 randomly chosen students residing in the University hostels. There were 39 refusals, and 6 incomplete questionnaires were discarded. This left a sample size of 605 volunteers.

**Results:** Forty seven students (7.8%) indicated that they visited the dental hospital within the last 12 months. Males and females utilized the dental services equally, and utilization increased with age and the number of years spent on campus. Anticipation of painful dental treatment, high dental charges, long waiting times and being too busy for a dental visit were cited as the most important impediments to seeking dental treatment. Females expressed greater satisfaction with the services. **Conclusion:** Dental service utilization among the students was found to be low. Oral health awareness campaigns, improving the quality of the services, and shortening the waiting time are expected to increase service utilization and satisfaction.

#### INTRODUCTION

Adopting a habit of visiting dentist regularly is one of the common messages in oral health education [1]. Dental care utilization is the percentage of the population who access dental services over a specified period of time. Measures of actual dental care utilization describe the percentage of the population who have seen a dentist during given periods of time [2]. A survey conducted in the United States in 1995 reported that 69% of the respondents had visited a dentist during the previous 12 months [3]. In 1997, another study reported that 75.5% of the population 25 years of age or older who had a dentist indicated that they had visited a dentist in the preceding year [4]. These reports of dental care utilization rates are higher than the 1993 numbers reported in the National Health Interview Survey [5] and the dental care utilization rates reported by Eklund and colleagues [6], indicating that more Americans are visiting dentists.

A survey of the utilization of dental services among university students in Helsinki showed that during the previous 12 months 59% of the students had had a dental appointment, mostly on their own initiative [7]. Generally, the dental utilization rate was higher among females; it increased with income and educational level, and decreased with age [2,7].

Various methods have been used to assess the adequacy of patients' utilization of health services, with patient satisfaction being considered an important indicator of the efficient utilization of health services, as it assesses an individual's attitude to the health services received [8,9].

Dental health care providers worldwide are showing increasing concern for patients' satisfaction with the aim of responding appropriately to their needs when seeking to

improve the quality of the services. Patients' views have been frequently used to evaluate the quality of dental care [7,10-12]. A review of patient satisfaction studies shows that the characteristics of health care delivery that influence patient satisfaction the most are accessibility [13,14], cost [11,13], attitude of staff [15,16], waiting time [17-20], waiting area environment [20-21], and physical surroundings [22].

Obafemi Awolowo University, Ile-Ife, is located in the southwestern part of Nigeria and provides residence for about nine thousand students. The outpatient unit of the Obafemi Awolowo University Teaching Hospital is located on campus and provides dental care for the University community (staff and students on campus), Ile-Ife town, and residents in the surrounding area. If the university dental clinic wants to improve utilization and satisfaction, it should carefully analyze the opinions of its consumer groups. The aim of this work is to provide information about utilization and satisfaction of residential students with the dental services provided by the outpatient clinic of the Teaching Hospital's dental department.

#### **VOLUNTEERS AND METHODS**

A multistage stratified sampling technique was used to recruit the volunteers. First, male and female hostels with similar student distributions were identified as two survey sites. A systematic random sampling method was used to select the hostel rooms from which all the occupants were to be recruited: starting with the first room, every fifth room was selected.

Information was collected by a self administered questionnaire. Volunteers were asked to provide information on age, sex and number of years on campus, indicate whether they had decayed or missing teeth, and mention previous visits for dental treatment. The respondents with dental pathologies who had not visited a dentist were asked to explain the reasons and to state whether they were willing to do so. All the respondents were to specify whether or not they were aware of the need to visit the dentist regularly.

Respondents who had visited a dentist were asked to indicate whether the last visit was within a year or more than one year. Five questions were asked about their last dental visit to explore their satisfaction with the dental facility and the services provided. A five-point rating scale (very satisfied, 5; satisfied, 4;

uncertain, 3; dissatisfied, 2; very dissatisfied, 1) was used.

The data were analyzed by using SPSS statistical software (SPSS Incorp., 1999). Frequencies and proportions were calculated. Associations between discrete variables were tested by Chi square test. In all cases a p-value < 0.05 was considered significant.

#### **RESULTS**

Six hundred and fifty questionnaires were distributed. There were 39 refusals and 6 volunteers provided incomplete answers. The remaining 605 volunteers constituted the study sample.

The ages of the respondents ranged from 16 to 48 years and most of them were 21 to 25 years old. Table 1 shows that of the 605 volunteers, 307 were males and 298 were females. Ninety eight percent of the respondents (n = 592) had spent about two years on campus, and 52.9% of them (n = 320) claimed to know that dental check-up should be regular. However, only 7.8% of the respondents (24 males, 23 females) indicated that they had visited the dental hospital for treatment within the previous 12 months. There was no statistically significant difference between males and females in the utilization of the dental service ( $X^2=0.0$ ,  $df = 1$ ,  $p=0.96$ ).

One hundred and seventy three respondents (28.6%) (79 males, 94 females) had one or more decayed teeth, and of these, 36 (20.8%) indicated unwillingness to seek treatment in the dental hospital. Missing or decayed teeth were reported by 77 volunteers (12.7%) (41 males, 36 females), and 19 of these (24.7%) were unwilling to seek treatment in the dental hospital.

Table 2 shows the frequencies of some of the reasons why respondents with dental problems were unwilling to seek treatment. There was no statistically significant difference between males and females in any of the reasons assessed. Anticipation of painful dental treatment, high dental charges, long waiting times and being too busy for a dental visit were cited as the most important barriers to seeking dental treatment.

Table 3 shows the rate of satisfaction with different aspects of quality of service. The satisfaction rate is the proportion of the respondents whose reply was either "very satisfied" or "satisfied." Females had a higher satisfaction rate than males on each of the five

aspects examined. Overall, satisfaction rate was higher among females (66.5%) than among males (54.6%), but the difference was not statistically significant (p=0.89).

Satisfaction was lowest with the length of time spent in the hospital: 26.9% for males and 44.2% for females.

**Table 1:** Frequency distribution of gender and number of years on campus of the respondents

Gender	Total respondents	Those who visited the hospital within 12 months	Those who did not visit	Significance of difference between genders
Male	307	24 (7.8%)	283	X <sup>2</sup> = 0.00, df=1, p=0.96
Female	298	23 (7.7%)	275	
Total	605	47 (7.8%)	558	
<b>Number of years on campus</b>				
Two	311	17 (5.5%)	294	X <sup>2</sup> =5.91, df=2, p=0.05
Three	215	19 (8.8%)	196	
Four years or more	66	9 (13.6%)	57	
Total	592*	45 (7.6%)	547	

\* 13 volunteers did not give their number of years on campus.

**Table 2:** Reasons for unwillingness of respondents who had dental problems to seek treatment

Reasons not to seek treatment	Responses			Significance of difference between genders
	Yes	No	Total	
Anticipation of painful experience	Male	24	13	X <sup>2</sup> =0.46, df=1, p=0.50
	Female	33	24	
	Total	57 (60.6%)	37	
Anticipation of worsened esthetics	Male	13	22	X <sup>2</sup> =2.50, df=1, p=0.11
	Female	10	37	
	Total	23 (28.0%)	59	
Distance to the hospital	Male	9	22	X <sup>2</sup> =0.08, df=1, p=0.78
	Female	16	34	
	Total	25 (30.9%)	56	
Anticipation of expensive dental charges	Male	24	15	X <sup>2</sup> =0.01, df=1, p=0.94
	Female	34	22	
	Total	58 (61.1%)	37	
Attitude of staff in previous visit	Male	3	26	X <sup>2</sup> =0.21, df=1, p=0.65
	Female	6	37	
	Total	9 (12.5%)	63	
Anticipation of long waiting time	Male	24	17	X <sup>2</sup> =1.63, df=1, p=0.20
	Female	24	29	
	Total	48 (51.1%)	46	
Just too busy	Male	28	18	X <sup>2</sup> =0.85, df=1, p=0.36
	Female	29	27	
	Total	57 (55.9%)	45	
Failure of previous treatment	Male	4	27	X <sup>2</sup> =0.03, df=1, p=0.87
	Female	5	38	
	Total	9 (12.2%)	65	

**Table 3:** Satisfaction rate of respondents with each aspect of the quality of service. In the table "satisfied" refers to those who responded either "satisfied" or "very satisfied."

Component	Gender	Satisfied	Not Satisfied	Uncertain	Satisfaction Rate (%)	Significance of difference between genders
Distance to the hospital	Male (n=52)	31	7	14	59.6%	$X^2=0.01$ , df=1, p=0.93
	Female (n=43)	28	6	9	65.1%	
Attitude of staff	Male (n=52)	32	11	9	61.5%	$X^2=0.70$ , df=1, p=0.40
	Female (n=43)	32	7	4	74.4%	
Cost of treatment	Male (n=52)	30	14	8	57.7%	$X^2=0.30$ , df=1, p=0.59
	Female (n=43)	28	10	5	65.1%	
Time spent	Male (n=52)	14	31	7	26.9%	$X^2=2.4$ , df=1, p=0.12
	Female (n=43)	19	31	3	44.2%	
Clinic environment	Male (n=52)	35	6	11	67.3%	$X^2=0.97$ , df=1, p=0.33
	Female (n=43)	36	3	4	83.7%	

## DISCUSSION

Many studies of dental service utilization have been conducted on various consumer groups and using different dimensions i.e., doctors-patient relationships, accessibility and availability of dental services to measure patient satisfaction. This study focused on university students as a major group of users of the modern dental facility in order to provide information on utilization and measure the degree of satisfaction with the services provided. Information on this important matter is scarce in Nigeria. Therefore, this study intends to be a baseline study for dental service utilization and satisfaction among college undergraduates in Nigeria.

The authors took into consideration the target group, the time scale for the study and factors that increase compliance of the respondents; we agreed to use an instrument that is as less time-consuming as possible. This led us to using a self administered questionnaire that included the most important components of health care utilization and satisfaction.

This study shows very low (7.8%) utilization of the dental services by undergraduate students of Obafemi Awolowo University, Ile-Ife, Nigeria

in contrast to the high rates in highly industrialized countries, where more than 60% of 25-year-olds and above had visited a dentist within a year [3,4]. Utilization in the Nigerian university was also lower than reported for university students in Helsinki, where 59% of the students had a dental appointment within 12 months [7].

The relationship between dental service utilization and the main demographic variables, e.g., location of residence, income, wealth, education, occupation and age, were less relevant in this study. However, our findings show that males and females utilized the dental service equally, in contrast to the higher rate of utilization by female students reported in Helsinki [7]. A gradual increase in dental service utilization was observed as the number of years in the university campus and age of the students increased, but the trend did not achieve statistical significance.

A substantial proportion of students reported dental caries, missing teeth or both. Paradoxically, despite that we observed considerable unwillingness to visit the dental hospital for treatment although it is located on the university campus. This could be attributed

to inadequate awareness of the importance of dental health care among students. This is evident from the low percentage of respondents (52.9%) who knew that dental check-ups should be regular. We had expected inadequate awareness, and so we also investigated the impediments to seeking dental care. Anticipation of painful dental treatment, expensive charges, long waiting times and being too busy for a visit ranked highest among the factors causing unwillingness to seek dental treatment. Similar findings have been reported in some other parts of the world [23,24].

The respondents that claimed to have visited the hospital were relatively satisfied with most of the aspects investigated. We observed that higher levels of satisfaction were expressed by females. With one exception [25], studies reported that women generally express greater satisfaction with dental care than men [26,27]. Newsome and Wright in their review suggested that such a result could be due to their greater exposure to dental services, which would likely moderate their expectations, which in turn are more likely to be met [26]. Our experience shows that in recent times, patients especially women were more concerned about esthetic rather than functional outcomes. The establishment of the adhesive and esthetic dentistry unit in our hospital may have influenced their response.

Time spent in the dental center was the component causing most dissatisfaction. Long waiting time has been reported as an item of dissatisfaction in literature [17-20]. This has been described as a natural outcome of inadequate personnel and facilities in the face of high demand for services [17,28]. This situation exists in our dental center. As a teaching hospital that serves the host communities and the suburb, our resources are stretched to the limit.

This study does not claim to be comprehensive, as it was intended as a simple baseline study. We were concerned with drawing attention to the pattern of utilization of our teaching hospital dental center by the undergraduate students in the immediate community as a major group of users. Many other aspects of dental service utilization and seemingly important factors of dental care satisfaction were not included. We hope that further exploration would be carefully and comprehensively done in future studies.

Our major finding of low utilization of our dental services underscores the need to urgently improve oral health care awareness in the university community; primarily through postal and hand bills on oral health, oral health education brochures for new students, increasing campus activities of the dentistry students, sponsoring of oral health programs in the media, and including oral health topics in the university's special elective courses.

Also, improving the quality of care, e.g., better pain control, use of more conservative treatment approaches, better staff-patient interaction, subsidization of charges for students, improved staffing, and availability of materials and equipment will probably be required to increase the level of utilization of our services by all users.

Finally, reducing the time spent in the dental center, i.e., at the registration desk, waiting time, consultation time, surgery time and time with the radiographer and the hygienist would go a long way towards increasing the satisfaction rate of the consumers.

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#### **CORRESPONDING AUTHOR:**

Bamise CT, e-mail: bamisect@yahoo.com

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