

# Utilization of dental services among secondary school students in Port Harcourt, Nigeria

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## ABSTRACT

**Background:** Regular use of dental services has been associated with optimal oral health. Reports in some parts of Nigeria have shown the poor utilization of dental services, but there is a paucity of information relating to oral health care seeking behavior in the South-South region of Nigeria. **Aim:** To determine the pattern of utilization and identify barriers to utilization of dental services among children. **Materials and Methods:** This was a cross-sectional study done among children aged 12–15 years in secondary schools in Port Harcourt, Nigeria. Information was elicited by means of a self-administered structured questionnaire. These included sociodemographic characteristics, views on dental visits, reported visits during the previous year, pattern of dental visits, and the barriers to utilization. Demographic variables and associations were tested using Chi-squared tests with the level of statistical significance set at  $P < 0.05$  at 95% confidence interval. **Results:** There were 200 school children; 98 (49%) males and 102 (51%) females with a mean age of 13.3 ( $\pm 1.1$ ) years. Dental visits were deemed important by 187 (93.5%) children, and 32.0% respondents suggested that visits should be when there are symptoms. Only 42 (21%) pupils had been to the dentist in the last 12 months. The barriers to utilization of dental services majorly included no perceived needs (64.3%). Demographic variables had no significant association with reported visits and pattern of visits. **Conclusion:** Utilization of dental services among these school children was low and the major barrier was no perceived need. Oral health awareness needs to be improved on the importance of a regular checkup.

## Key words

Dental services, dental visits, Port Harcourt, school children

## INTRODUCTION

Dental caries and gingivitis are preventable common oral diseases that occur in children.<sup>[1,2]</sup> When oral diseases and dental injuries are left untreated, pain and infections may set in and decrease the quality of life of children such that eating, speaking, playing, and concentration are affected. They may be irritable, withdrawn, and their school performances may be affected significantly as a result of irregular school attendance.<sup>[2]</sup> Younger children with early childhood caries do not thrive and have been reported to weigh significantly less than their peers.<sup>[3]</sup>

Routine dental visits complement self-care as an indispensable element in the attainment and sustenance of good oral health. This implies that proper utilization of dental services is essential to promoting and maintaining oral health; hence, overall health.<sup>[4,5]</sup> “Dental care utilization is the percentage of the population who access dental services over a specified period of time.” It is determined by the use of dental services and as such can be expressed in terms of dental visits made and services received over a specified period.<sup>[6]</sup>

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Several reasons have been attributed to use and nonuse of dental services and include sociodemographic factors such as age, sex, educational attainment, and household income. Perceptions and oral health behaviors,<sup>[7-10]</sup> access to health facility, dwindling health funding, dental insurance, and cost of treatment have also been cited. Other factors related to the facilities such as waiting time, scheduling, or referrals were adduced as possible reasons that influenced reutilization of dental services.<sup>[7-17]</sup>

It has been reported that children from low socioeconomic backgrounds have more untreated dental caries than those of high socioeconomic backgrounds<sup>[2,13,18]</sup> and the prevalence of untreated dental caries has been reported to be a measure of access and utilization of dental care.<sup>[19]</sup> The American Dental Association recommends “that the frequency of regular dental visits should be tailored by the dentists to accommodate for the subjects current oral health status and health history.”<sup>[20]</sup> Though a 6-month preventive dental visit is recommended,<sup>[21,22]</sup> the standard measure of one visit per year to the dentist is acceptable, especially in adolescents and adults.<sup>[12]</sup> In previous studies carried out among secondary school pupils in some parts of Nigeria, the utilization of dental services was reported low and varied between 15.5% and 56.5% in Enugu,<sup>[23]</sup> 18.6% in Benin,<sup>[24]</sup> 14.9% in Lagos,<sup>[12]</sup> and <20% and 31.6% in the study by Denloye *et al.*,<sup>[11]</sup> and Ogunrinde *et al.*,<sup>[25]</sup> respectively, in Ibadan.

Although studies have been done on the utilization of dental services among secondary school children in some parts of Nigeria<sup>[11,12,23-25]</sup> reports from the South-South region is insufficient; the desire to provide additional information on this important subject necessitated this study. The aim of this study was to determine the pattern of utilization of dental services and to identify barriers to utilization of dental services among children in Port Harcourt, Nigeria. The information obtained will serve as a vital tool for oral health policy decision-making and in planning oral health care among the populace.

## MATERIALS AND METHODS

This was a descriptive cross-sectional study done among secondary school children aged 12–15 years in Port Harcourt, Nigeria. Four junior secondary schools were chosen by convenient sampling and an arm from each of the classes was chosen and the needed sample was selected by simple ballot. All the children who were between 12 and 15 years in the class were eligible. Those either below 12 years or above 15 years, those within the age bracket but declined to participate and those that were not at their classrooms were excluded. Information was elicited by means of a self-administered [Appendix A] structured questionnaire. There were both close and open-ended questions which included:

- Sociodemographic characteristics of age, sex, parents educational level

- The subjects perception on dental visits
- Pattern of dental visits; if they have ever been to a dental clinic  
The frequency of visit - dental visit - in the past year (those who indicated “6 months or less” or “1 year ago” were considered to have had a dental visit during the past year
- Type of dental facility/clinic visited; whether a Government/public or private facility
- Source of oral health information
- Procedures carried out
- The barriers to use of dental facility.

All information was entered into a data spreadsheet and analyzed using SPSS Version 20 (IBM Statistical Package of Social Sciences (SPSS) statistics for Windows Version 20.0 Armonk, NY: IBM Corp.). Demographic variables and associations were tested using Chi-square tests with the level of statistical significance set at  $P < 0.05$  at 95% confidence interval.

## Ethical consideration

Approval to carry out this study was obtained from the Research and Ethics Committee of the University of Port Harcourt, Port Harcourt, Nigeria. Permission was also obtained from the Rivers State Universal Basic Education Board.

## RESULTS

Of the 243 questionnaires administered, 200 (82.3%) were filled and returned; these consisted of 98 (49%) males and 102 (51%) females with a mean age of 13.3 ( $\pm 1.1$ ) years. Dental visits were deemed important by 187 (93.5%) children, but 19.5% of them were afraid of visiting the dentist/the dental clinic.

Seventy (35%) of them had ever been to a dental clinic. Although 59.0% of them reasoned that dental visits should be at least once a year, 64 (32.0%) respondents suggested that visits should be when there are symptoms whereas 42 (21%) pupils had been to the dentist in the last 12 months [Table 1]. Demographic variables had no significant association with reported visits and pattern of visits [Tables 1 and 2].

Forty-five (24.3%) of the respondents’ source of oral health information were from dentists whereas 18.4% and 16.7% respondents sources were print/electronic media and school, respectively [Figure 1]. Of those that made use of dental facilities, over half (58.5%) went to public/Government Dental Clinics and a quarter of the respondents attended dental clinics for dental checkup [Figure 2]. About a quarter (26.1%) of the respondents would inform their parents if they had dental problems.

**Table 1: Perception/pattern of service utilization according to gender of the respondents**

	Males	Females	Total n (%)	$\chi^2$	P
Are dental visits important?					
Yes	90 (48.1)	97 (51.9)	187 (93.5)	4.422	0.11
No	6 (85.7)	1 (14.3)	7 (3.5)		
Don't know	2 (33.3)	4 (66.7)	6 (3.0)		
Past dental visit					
Yes	35 (50.0)	35 (50.0)	70 (35.0)	0.043	0.84
No	63 (48.5)	67 (51.5)	130 (65.0)		
Last dental visit was					
6 months ago	6 (60.0)	4 (40.0)	10 (14.3)	5.59	0.23
1 year ago	15 (46.9)	17 (53.1)	32 (45.7)		
2 years ago	10 (76.9)	3 (23.1)	13 (18.6)		
3 years ago	3 (37.5)	5 (62.5)	8 (11.4)		
>3 years	1 (14.3)	6 (85.7)	7 (0.1)		
Perception on frequency of dental visits					
Once a year	8 (29.6)	19 (70.4)	27 (13.5)	4.619	0.20
Twice a year	48 (52.7)	43 (47.3)	91 (45.5)		
When there is tooth problem	34 (53.1)	30 (46.9)	64 (32.0)		
Never	8 (44.4)	10 (55.6)	18 (9.0)		
Are you afraid of going to the dentist					
Yes	17 (43.6)	22 (56.4)	39 (19.5)	0.381	0.54
No	79 (50.3)	78 (49.7)	157 (78.5)		
Not sure	2 (50.0)	2 (50.0)	4 (2.0)		
Have you ever received instruction on care of the teeth					
Yes	91 (48.7)	96 (51.3)	187 (93.5)	0.131	0.72
No	7 (53.8)	6 (46.2)	13 (6.5)		

The barriers to utilization of dental services majorly included no perceived needs (64.3%), cost of treatment (10.1%), and access to dental clinic (5.4%) [Figure 3].

## DISCUSSION

Dental services could be utilized for routine (preventive care) or episodic (symptomatic and emergency) visits. Routine visits when commenced early, are known to facilitate optimal dental health since preventive procedures such as scaling and polishing, fluoride and dental sealant applications are done.<sup>[5]</sup> Although majority of the respondents agreed that dental visits were important, only a third had been to dental clinics in their lifetime. This is lower than the 46.5% reported among Tanzanian pupils,<sup>[26]</sup> but comparable to the study done among adolescents in Ibadan by Ogunrinde *et al.*<sup>[25]</sup> where 31.6% had visited a dental clinic. The similarity may be because both studies were done in Nigeria.

The prevalence of attendance in the last 1 year or utilization of dental services was 21%, slightly higher than <20% reported in Ibadan<sup>[11]</sup> and Lagos<sup>[12]</sup> among pupils of secondary schools. A fifth of them were afraid of going to the dentist, this was lower among Indians as reported by John *et al.*<sup>[17]</sup> Dental fear could result from self-experience, the influence of parents/siblings/peers, professional incompetence, and dental settings and procedures,<sup>[27]</sup> and these fears can be passed from one person to another.

The present study showed that most (75.7%) of those that utilized oral health facility went there for symptomatic

**Table 2: Perception/pattern of dental visits according to the respondents' age**

	12 years n (%)	13 years n (%)	14 years n (%)	15 years n (%)	Total n (%)	$\chi^2$	P
Are dental visits important?							
Yes	56 (90.3)	46 (93.9)	48 (94.1)	34 (97.1)	187 (93.5)	5.130	0.53*
No	3 (4.8)	1 (2.0)	3 (5.9)	0	7 (3.5)		
Don't know	3 (4.8)	2 (4.1)	0	1 (2.9)	6 (3.0)		
Past dental visit							
Yes	24 (38.7)	17 (34.7)	18 (35.3)	10 (28.6)	69 (35.0)	1.014	0.80*
No	38 (61.3)	32 (65.3)	33 (64.7)	25 (71.4)	128 (65.0)		
Last dental visit was							
6 months	5 (20.8)	2 (11.8)	2 (11.1)	1 (10.0)	10 (14.5)	9.269	0.68*
1 year	11 (45.8)	7 (41.1)	9 (50.0)	5 (50.0)	32 (46.4)		
2 years	2 (8.3)	4 (23.5)	4 (22.2)	3 (30.0)	13 (18.8)		
3 years	5 (20.8)	0	2 (11.1)	1 (10.0)	8 (11.6)		
>3 years	1 (4.2)	4 (23.5)	1 (0.6)	0	6 (8.7)		
Perception on frequency of dental visits							
Once a year	7 (11.9)	9 (19.1)	7 (14.0)	3 (8.8)	26 (13.6)	5.635	0.78*
Twice a year	23 (39.0)	23 (48.9)	25 (50.0)	18 (52.9)	89 (46.8)		
When there is tooth problem	24 (40.7)	13 (27.7)	15 (30.0)	10 (29.4)	62 (32.6)		
Never	5 (8.5)	2 (4.3)	3 (6.0)	3 (8.8)	13 (6.8)		

\*P - Not significant

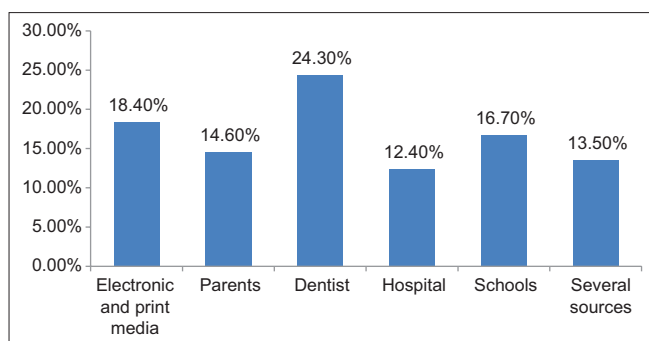


Figure 1: The source of oral health information of the pupils

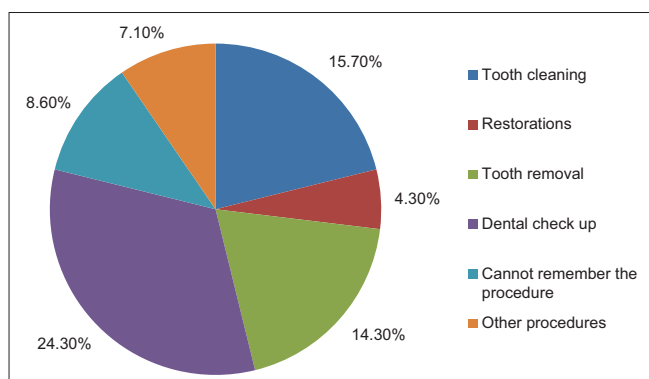


Figure 2: The respondents' reasons for accessing dental care

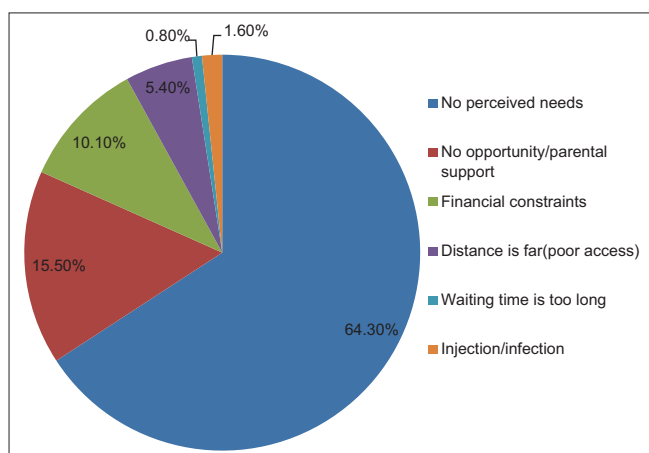


Figure 3: Barriers to dental service utilization for those who had never visited a dental facility

visits. In a study<sup>[1]</sup> carried out in a health facility in Port Harcourt University of Port-Harcourt Teaching Hospital, only 4.1% of the patients attended for routine visits while over 90% of visits were as a result of symptoms of diseases. This further corroborates previous studies.<sup>[11,12,25,28]</sup> in some parts of Nigeria where there were reports that most dental visits were as a result of symptoms. This could be a result of low awareness, financial constraint, competing demands, and misconceptions on oral health/dental care.

Perceived need and parents perceived needs in the case of children have been reported to be a major cause

of nonuse of dental services. In this study, the most common reason for nonutilization of dental services was no perceived need. This finding is similar to previous studies in other parts of Nigeria;<sup>[11,12]</sup> however, the proportion of these respondents is lower than the 82.2% reported by Denloye *et al.*<sup>[11]</sup> The perceived cost of service is another reason why dental services were not utilized, generally, dental services are believed to be expensive. Individuals in an economically deprived environment would usually have competing demands from other pressing needs which may be rated high and above preventive dental services, which are known to help maximize oral health.

Dental service utilization is better when there is dental insurance;<sup>[18]</sup> however, in Nigeria, oral health is secondary care under the National Health Insurance Scheme.<sup>[29]</sup> It has been reported that most Nigerians do out-of-pocket payments<sup>[30]</sup> and it is believed that nearly two-thirds (61%) of Nigerians were living below poverty line and that, “the fall in living standard and relative scarcity of resources have impacted on the access to and delivery of health services to the populace.”<sup>[30]</sup> This may have taken its toll on accessing oral health care; in this study, perceived cost of treatment was the barrier to utilization of dental service in a tenth of the respondents. This finding was, however, lower than that reported for Saudi Arabian adolescents,<sup>[10]</sup> where the high cost of dental service was the highest barrier to utilize dental care in private facilities.

Access to dental healthcare facilities was another barrier to receive dental care. Those who accessed dental care majorly utilized public/government facility contrary to the finding among the Saudis.<sup>[10]</sup> Those who attended dental facility majorly went to public facility where treatment is affordable and subsidized; therefore, one can suggest that enlightenment campaigns should be carried out by such facilities that the populace be made aware of the little or no cost for treatment though some would not think that the subsidized treatments are cheap since a good number of the populace may be poor. They prefer using their scarce resources for what they perceive as more important than dental treatments.

Several studies have shown the influence of parents on the utilization of dental services.<sup>[13,31]</sup> When there is no support/encouragement, minors are unable to access dental care. When parents do not see the need for dental care, their wards are not given the opportunity to access preventive dental care.<sup>[12]</sup> In this study, about 15% did not utilize dental services because of lack of parental support. This was even higher than that of perceived cost of treatment. Their source of information was majorly from dentists; however, the report from Ibadan<sup>[25]</sup> showed that majority got their information from the media.



## CONCLUSION

Utilization of dental services among these school children was low and the major barrier to utilization to these services was no perceived need.

In this study, there was a poor utilization of dental services, and no perceived need was a major barrier to nonuse of dental facilities. There is the need to increase oral health awareness, especially in schools by having effective school oral health programs. Oral health providers also need to enlighten their medical counterparts in stressing the importance of oral health care.

## Limitations of the study

There was no parent component in the study tool. The reasons for not attending a dental clinic may be slightly different from that of the parents. Moreover, the result may not be generalized for the Nigerian populace since it was done in Port Harcourt.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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## APPENDIX A

Utilization of oral health services among secondary school students

- a) Age (as at last birthday)..... b) Gender: Male..... Female.....
- c) State of Origin .....
- d) Father's Education (none, prim, sec, Tertiary)..... Occupation .....
- e) Mother's Education (none, prim, sec, Tertiary)..... Occupation .....
- f) Do you know who a dentist is Yes ..... No..... Don't Know.....
- h) Are dental visits important? Yes..... No..... Don't Know.....
- i) Have you visited the dental clinic before? Yes .....No .....
- If yes; Cleaning..... Fillings..... Tooth removal..... braces..... Check up..... Others.....
- j) was it a private.....or government clinic.....
- k) If No, why have you not gone to a dental clinic?
- a) No tooth ache
- b) The clinic is too far from my house
- c) The bill (money) is too high
- d) Pain
- e) Dental injection
- f) Noise from the equipment
- g) Fear of infection
- h) Time spent waiting
- i) I don't know
- j) Others, specify.....
- l) How many times should you visit the dentist?
1. Once a year .....2. Twice a year..... 3. Only when there is pain.....4. never .....
- m) You visited a dental clinic in the last a.1 year.... b. 2 years.....c. 3 years.....d. Never ...e.6 months
- n) When you have a problem in your teeth such as cavity, bleeding etc...do you inform your parents? Yes .....No.....
- o) Are you afraid of going to the dentist? Yes .....No.....
- p) Have you ever received instruction on care of your teeth? Yes .....No.....
- q) Source – TV....Radio.....School..... Friends.....Parents.....Hospital.....Dentist.....Newspaper/magazine..... others (specify) .....