

## Utilization of Dental Health Care Services among 12 Year School Going Children of Nellore City, Andhra Pradesh, India- Across Sectional Study

Punamalli Prasanth<sup>1</sup>, Chandrasekhara Reddy<sup>2</sup>, Krishna Kumar RVS<sup>3</sup>,  
Sreenivasulu Gomasani<sup>3</sup>, Deepthi Athuluru<sup>5</sup>

<sup>1</sup>(Department of Public Health Dentistry, Narayana Dental College and Hospital)

<sup>2</sup>(Department of Public Health Dentistry, Narayana Dental College and Hospital)

<sup>3</sup>(Department of Public Health Dentistry, Narayana Dental College and Hospital)

<sup>4</sup>(Department of Public Health Dentistry, Narayana Dental College and Hospital)

<sup>5</sup>(Department of Public Health Dentistry, Narayana Dental College and Hospital)

Corresponding Author: Punamalli Prasanth

### Abstract

**Introduction:** Good oral health help us to ensure the over all health and well being. In order to improve the oral health outcomes an adequate use of health services and factors predictive of this behaviour is essential.

**Aim:** To assess the factors and barriers effecting the utilization of dental health care services among 12- year- old school children. **Materials and Methods:** A cross- sectional survey was conducted among 350, 12 year old school children in Nellore city. Factors and barriers affecting utilization of dental care were assessed using a questionnaire which contains the information on Socio demographic characteristics, Oral hygiene practices, the time and reason for their last dental visit and the reasons prevented them from visiting the dentist

**Results:** Utilization rate was 24.8% and 13.3% had utilized the dental services in the past one year. No problem in their teeth (28.3%) was reported as the main internal barrier for non-utilization of dental services and Scared of dentist (10.8%) was reported as the main external barriers in the non -utilization of dental health care services. Pain (10.2%) was the major reason for the utilization of dental health care services.

**Conclusion:** Utilization of dental health care services was low. Pain was the major factor for the utilization of dental health care services.

**Key words:** Schoolchildren, Dental care, Utilization, Barriers

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### I. Introduction

Good oral health ensures the over all health and Poor health has a significant effect on social and economic development of the individual.<sup>[1]</sup>Oral diseases like dental caries, periodontitis and oral cancer are a global health problem in developing countries.<sup>[2]</sup>Oral health is important not only for appearance and sense of well being but also for over all health of the individual. Poor oral health affect the quality of life, appearance and self esteem and has been linked to behavioural and developmental problem. Early diagnosis and appropriate treatment can prevent worsening of all the oral diseases. Adequate use of health services and factors predictive of this behaviour is essential to improve the oral health outcomes.<sup>[3]</sup>

Dental care utilization refers to “the percentage of the population who access dental services over a specified period of time”.<sup>[4]</sup>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.The recommended ideal age for the first dental visit is 6 and 12 months after the eruption of the first primary tooth.<sup>[5]</sup>This statement justifies the importance of early dental care three essential elements for an increased access to dental care are the dental work force, the demand for dental care, and the economic environment. Dental care utilization depends on many factors of which are internal and external. Internal factors includes perceived need for care, cultural preferences. External factors include the adequacy of dental care and ability to pay. Barriers that the patient experience in accessing oral health care includes their life experiences and psychosocial factors like age, gender, education, ethnicity, language, perception of need, and feeling of vulnerability. Others barriers includes the cost of treatment, individual health status, disability, transportation facilities, dental care services near to residence, adequacy of dental workforce, and beliefs and charisma of dental healthcare personnel.<sup>[6]</sup>

A good understanding of the barriers that prevent people from seeking appropriate and timely oral health intervention is important that would bridge the gap between the need for care and the amount of care

sought.<sup>[6]</sup>Children from low socio economic status have serious problems receiving the care they need. The factors identified for the limit access to dental care among children include lack of finances, lack of transportation, language and cultural barriers and lack of perceived need for care.<sup>[7]</sup>

Although studies have been done on the utilization of dental services among adults in several parts of India and in some parts of AndhraPradesh, reports regarding utilisation of dental health services among children was insufficient and the desire to provide additional information on this important subject was needed therefore the aim of present study was to assess the factors and barriers effecting the utilization of dental health care services among 12- year- old school children of Nellore city.

## II. Methodology

A cross- sectional study was conducted for a period of three weeks (October1st to october20th- 2017) to determine the utilization of dental health care services among school children aged 12 years in Nellore city. Ethical approval for the study was obtained from the institutional review board.

**Sampling methodology:** List of government schools in Nellore city was obtained from District Education officer of Nellore city and 8 government schools were selected randomly using lottery method.

**Study population:** The study population comprised of 323 children, aged 12 years and all children hailed from 8 randomly selected government schools.

Data was collected using a structured proforma that consisted of two parts: The first part contained sociodemographic information such as name, age, sex. The second part, contains information regarding the perceived oral health status, utilization and barriers in utilization of oral health care services.

A thorough literature search was done and a questionnaire was prepared for children. The questionnaire addressed the following aspects: Socio demographic characteristics such as age, gender, information on oral hygiene practices, the time and reason for their last dental visit. In the last part of the questionnaire, subjects were asked the reasons prevented them from visiting the dentist: which include two factors internal factors (My teeth are fine , no problem in the oral cavity) and external factors(Lack of time, dental fear or anxiety, the dentist is at a long distance, dental treatment is expensive, transport problem,noise from equipment, scared of dentist) .

Before the start of the study the content validity was assessed for the questionnaire using content validity index with Davis criteria 1992.<sup>[8]</sup> It was given to two experts in the field of dental research and their response was recorded, item and scale content validity was checked and Item Content Validity Index score (Lynn 1986)<sup>[9]</sup> was 1.0 and 0.9 for two experts respectively and Scale Content Validity Index score (Waltz &Bausell 1981) was 0.9 for both experts which was acceptable<sup>[10]</sup>.The questionnaire was translated into telugu (local language) and then re-translated into English and checked for cross cultural sensitivity. The questionnaire was checked for reliability on 10 subjects results obtained by test – retest (Chronbachs alpha) was 0.90 respectively which showed a high agreement.

Investigator visited 8 randomly selected government schools and the questionnaire was distributed to the study subjects and were asked to fill in the questionnaire in the class room. They were instructed to ask any doubts while filling the questionnaire.

### Statistical analysis

The data collected was compiled,statistical analysis using Statistical Package for Social Sciences (SPSS version 20). Qualitative data was summarized using frequencies, percentages.

## III. Results

A total of 323 questionnaires were distributed to the study subjects, questionnaires were collected back andsubjected to statistical analysis.

Table 1 shows demographic distribution of study participants where 151 (46.8%) were boys and 172 (53.2%) were girl respondents.

**Table1: Demographic distribution of study subject**

Category	Frequency (n)	Percentage(%)
Boys	151	46.8
Girls	172	53.2
Total	323	100

Table 2 shows the perception and satisfaction regarding oral health among study subjects , majority of study subjects stated that their oral health was good (32.3%) and average (30.9%) and just 7.4% of study subjects stated their oral health status as poor. 39.0% of study subjects stated that they were satisfied with their oral health and only 10.5% stated that they were not satisfied with their oral health

**Table 2: Perception and satisfaction regarding oral health among study subjects**

	Boys n(%)	Girls n(%)	Total n(%)
<b>Perception</b>			
Poor	17(11.3)	7 (4.0)	24(7.4)
Average	36(23.8)	64 (37.3)	100(30.9)
Good	62(41.1)	42 (24.4)	104(32.3)
Excellent	28(18.5)	36 (20.9)	64(19.8)
Cannot say	8(5.3)	23 (13.4)	31(9.6)
<b>Satisfaction</b>			
Not satisfied	24 (15.9)	10 (5.8)	34(10.5)
Average	30 (19.9)	21 (12.2)	51(15.8)
Satisfied	52 (34.4)	74 (43.0)	126(39.0)
Very Satisfied	31 (20.5)	50 (29.1)	81(25.0)
Cannot say	14 (9.3)	17 (9.9)	31(9.7)

Table 3 shows the pattern of service utilization, 24.8% of the study subjects utilized the dental services and 13.3% had utilized the dental services in the past one year. There was no statistically significant difference with respect to gender in terms of dental service utilization.

**Table 3: Pattern of service utilization according to gender**

	Boys n(%)	Girls n(%)	Total n(%)
<b>Had any Previous dental problem</b>			
Yes	66(43.7)	48 (27.9)	114(35.2)
No	85 (56.3)	124 (72.1)	209(64.8)
<b>Dental visits</b>			
Yes	38(25.1)	42 (24.4)	80(24.8)
No	113 (74.9)	130 (75.6)	243(75.2)
<b>Past dental visit</b>			
One year	19 (12.5)	24 (14.0)	43(13.3)
1-2 years ago	8 (5.3)	17 (9.8)	25(7.7)
2-5 years ago	11 (7.3)	1 (0.6)	12(3.8)
Not yet consulted	113 (74.9)	130 (75.6)	243(75.2)

Figure 1 shows reasons for visiting a dental clinic, tooth pain was quoted as main reason for visiting a dentist by 10.2% of study subjects followed by dental caries 8.7%, and malodour 1.8%

**Figure 1: Various reasons for visiting a dental clinic among children**

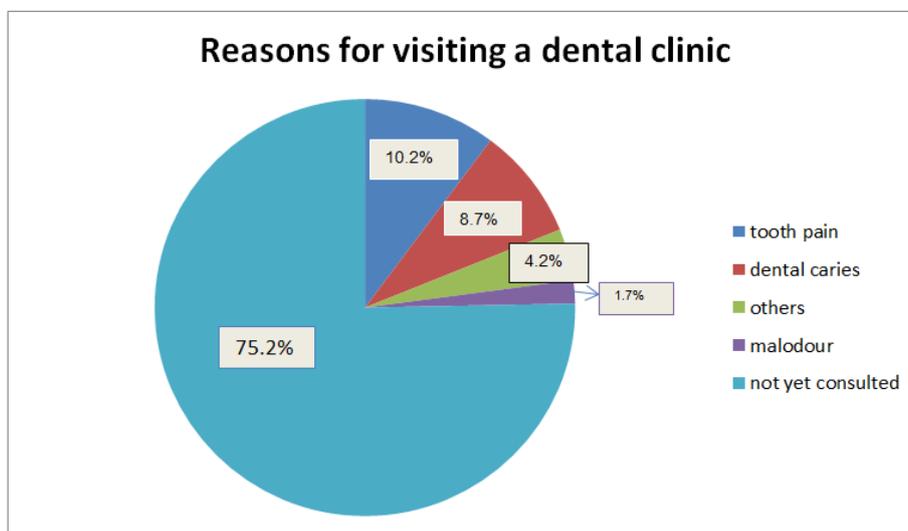


Figure 2 shows the treatment received by study subjects during their dental visits. Scaling was the main treatment received by 10.2% study subjects followed by restoration 6.7% and extraction 5.2%.

**Figure 2: various treatments rendered by study subjects during their dental visit**

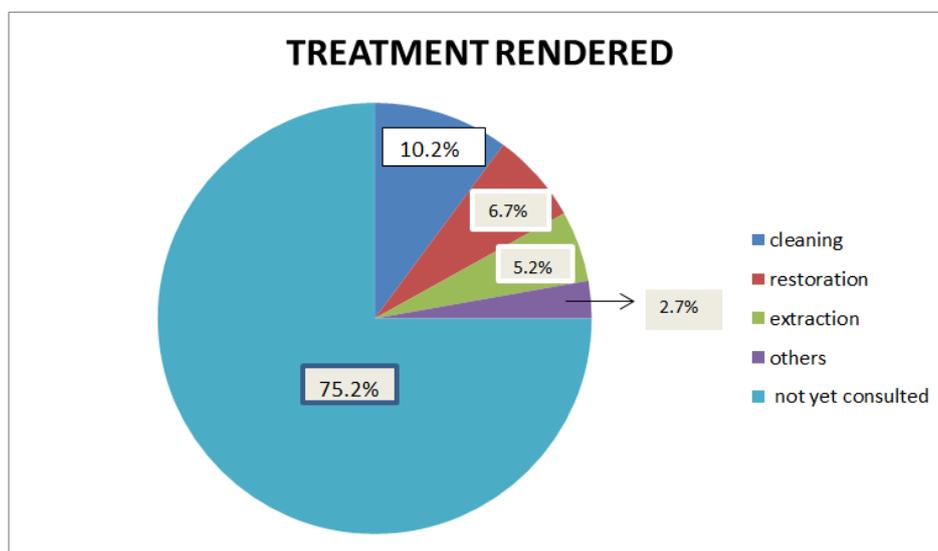


Table 4 shows perceived internal barriers in the utilization of dental health care services, 28.2% of study subjects stated that there was no problem in their teeth as the major internal barrier in the utilization of dental health care

Scared of dentist (10.8%) was stated as the main external barrier in the utilization of dental health care services by majority of subjects followed by parents not taken to dentist (8%), clinic too far (1.9%), noise from equipment (1.5%) and fear of infection (0.3%) respectively

**Table 4: Perceived reasons/ barriers in utilization of dental health care services**

Category	Boys n(%)	Girls n(%)	Total n (%)
Teeth are fine	22 (14.6)	40(23.3)	63(19.2)
No problem	35 (23.2)	56 (32.5)	91(28.2)
Scared of dentist	20 (13.2)	15 (8.6)	35(10.8)
Clinic is too far	5 (3.4)	1 (0.5)	6(1.9)
Parents not taken	19(12.6)	7 (4.1)	26(8.0)
Dental injection	9 (6.0)	8 (4.7)	17(5.3)
Noise from equipment	3 (2.0)	2 (1.2)	5(1.5)
Fear of Infection	0	1 (0.5)	1(0.3)
Others	0	0	0(0)
Consulted	38(25.1)	42(24.4)	80(24.8)
<b>Total</b>	<b>151(100)</b>	<b>172 (100)</b>	<b>323(100)</b>

Table 5 shows the past dental visit experience and attitude of study subjects. 20.7% of study subjects who visited a dentist stated that there was no unpleasant experience during their visit. 46.9% study subjects stated that dental visits are very important, 45.5% perceived that dental visits are important only when they get pain

**Table 5: Attitudes and past dental experience of study subjects**

	Boys n(%)	Girls n(%)	Total n(%)
<b>Past dental experience</b>			
<b>Unpleasant experience</b>			
Yes	7(4.7)	6 (3.5)	13(4.1)
No	31 (21.1)	36 (21.0)	67(20.7)
<b>Did you inform to your parents regarding dental problem</b>			
Yes	42 (27.8)	45 (26.1)	87(26.9)
No	1 (0.7)	0	1(0.3)
<b>How did your parents managed the dental problem</b>			
Home remedies			
Did nothing	1(0.6)	0	1(0.31)
Taken to dentist	4(2.6)	3(1.7)	7(2.2)
Others	38(25.1)	42(24.4)	80(24.7)
No problem	0	0	0
	108(71.6)	127(73.7)	235(72.7)
<b>Importance of dental care</b>			
Not at all important			
Some what important	23 (15.2)	34 (18.8)	57(17.6)
Important	25(16.5)	32 (18.8)	57(17.6)
Very important	23(15.2)	35 (19.4)	58(17.9)
	80 (53.1)	71 (43.0)	151(46.9)
<b>Perception on frequency of dental visits</b>			
Once in 6 months			
Once in a year			
When you get pain	14 (9.3)	25(14.5)	39(12.1)
Don't know	2 (1.3)	3 (1.7)	5(1.6)
	69 (45.6)	78 (45.1)	147(45.5)
	66 (43.8)	66 (38)	132(40.8)

#### **IV. Discussion**

Dental care utilization depends on many factors, of which some are internal and some are external to the patient. Internal factors are perceived need for care, cultural preferences, language, and so forth. External factors are the adequacy of dental care and ability to pay<sup>[6]</sup>. In the present study majority of subjects had dental problems (35.2%) and agreed that dental visits were important and very important(64.8%) but only one third (24.8%) of the subjects had been to dental clinics in their lifetime indicating a low utilization rate compared to study among Nigerian pupil by Joycelinetal (35%)<sup>[11]</sup>and high compared to study bySikri B (12.4 %)<sup>[5]</sup> among rural children of Davanagere, Karnataka, Denloye et al (13%)<sup>[7]</sup>and kahar p et al (49.5%)<sup>[12]</sup>among Madhyapradeshchildren

In the present study the prevalence of utilization of dental services in the last 1 year was 13.3% which was high compared to the study by Sikri et al (4.1%)<sup>[5]</sup>and low compared to the study byDenloye (13.5%)<sup>[7]</sup>, Joycelin (21%) et al<sup>[11]</sup>, clemencia M et al (77%)<sup>[13]</sup> and Medina solis (27.7%) et al<sup>[14]</sup>

In the present study no perceived need of dental care (28.2%)was identified as a major internal factor for non utilization of dental services by children and this finding was similar to studies conducted by Denloye et al (82.8%)<sup>[7]</sup>, Joycelin(64.3%)<sup>[11]</sup>. Fear of dentist and dental services was reported as the main external barrier by 10.8% of study subjects which was less compared with the study done by Priyadarshinietal (48%)<sup>[6]</sup>among the children of Bangarupettaluk, Karnataka. Fear of dental injection was reported as the second major external barrier by 5.3% of the present study subjects which was less compared to study conducted by Priyadarshini et al (55%)<sup>[6]</sup> and high compared with study conducted by joycelin et al (1.6%),<sup>[11]</sup>

In the present study 10.2% study subjects stated tooth pain as the common reason for the utilization of dental services which was contrary to the other studies done by Denloye et al<sup>[7]</sup> where fillings (50.8%) was the main reason for utilization, 8.7% of present study subjects utilized the dental services for the caries removal which was high compared to the study by Joycelin et al<sup>[4]</sup>(4.30%) and less compared to Denloye study<sup>[7]</sup>(50.8%).

Scaling was the most common treatment received by the study participants (10.2%) which was contradictory to the study done by Amin et al<sup>[15]</sup> where dental check up (32.6%) stands at first followed by tooth cleaning, 64.8% of children in the present study agreed that dental visits are important and this proportion was less compared to study by Joycelin et al<sup>[4]</sup> (93.5%).

Global monitoring age for dental caries among children is 12 years, This was the first study which was done among 12 year old school children inAndhraPradesh. This study was done only in government school children so the result cannot be generalised to the whole 12 years group children which was a limitation of the study

#### **V. Conclusion**

Utilization of dental health care services was low among the 12 year school going children of Nellore city. Pain was the most common and major factor for the utilization of dental health care services. The major internal and external barriers affecting the utilization of dental health care services were perceived no dental need and scared of dentist.

#### **VI. Recommendations**

Further research can be done incorporating different WHO index age groups in a wider population including both urban and rural areas. Camps and health education programmes can be conducted to increase awareness regarding utilization health care services in both children as well as in parents .

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#### **Conflicts of interest**

There are no conflicts of interest.

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