

Research Article

## Utilization of dental services and encountered barriers among rural population of Rewari district

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### ABSTRACT

**Objectives:** The aim of the study was to assess the level of utilization of dental services and barriers to utilization of oral health services among rural population of Rewari district, Haryana.

**Materials and Methods:** A descriptive and cross-sectional survey was conducted among 150 participants in Rewari District. Oral health was assessed using 28-item and 22-item self-administered, closed ended, and structured questionnaires for adults and children, respectively based on oral health assessment proforma by the World Health Organization. Descriptive statistics were used to summarize the results. Binary logistic regression analysis was performed using questions related to the last dental visit as dependent variables.

**Results:** A total of 150 subjects participated in this questionnaire study. Utilization of dental services was limited to emergency and curative procedures. Only 34% of children and 19% of adults had visited the dentist in the past 1 year. Whereas, 30% of children and 34% of adults had never received dental services. The most commonly reported reasons for the last visit to dentist in 48.5% of children and 51.5% of adults is the pain or trouble with teeth, gums or mouth, followed by routine check-ups in 25.7% and 31.8% in children and adults, respectively, and results were found to be highly significant ( $P = 0.011$ ).

**Conclusion:** Majority of population assumes that visiting the dentist is simply for pain treatment. People were unaware of their dental problems and the number of self-reported dental issues was low.

**Keywords:** Access, Barriers, Dental care, Oral health, Utilization

### INTRODUCTION

Health has long been viewed as a basic human right as well as a broad social goal. Dental health is an important but sometimes overlooked aspect of children's and adults' overall health and well-being. Dental health, according to the World Health Organization (WHO), is defined as the absence of chronic oral and facial sufferings, oral and throat cancer, dental sores, birth defects such as cleft lip and palate, periodontal disease, tooth decay, and tooth loss, as well as other diseases and conditions that affect the dental cavity.<sup>[1]</sup>

In developing nations like India, dental health problems have emerged as a critical public health concern. Patient satisfaction has been seen as an important factor in determining health outcomes and service quality. A satisfied patient is more likely to have a stronger bond with their dentist, resulting in improved coordination, continuity of care, and a better health outcome.<sup>[2]</sup>

With 736 districts, 5564 sub-districts (tehsils/taluks), 7935 towns, and over 6,49,481 villages, India is divided into 28 states and eight union territories.<sup>[3]</sup> The population with the most healthcare needs

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often acquired the least desirable care. Dental problems are the most frequent chronic diseases, but there are few structured oral care systems to deal with these consequences, and when they are, the costs are out of reach for most individuals.

Dentistry is in a state of emergency in relation to the accessibility of its services to the majority. Dentists who practice in cities and treat the affluent segments of the urban population in many developing nations such as India provide dental health services. Emergency care is sometimes difficult to come by for the impoverished in both cities and rural areas.<sup>[4]</sup> There has been little research on the use of oral healthcare services by India's rural population. Consequently, the present study targets to assess the extent of utilization of dental services and barriers to utilization of dental health services among rural population of Rewari district, Haryana.

## MATERIALS AND METHODS

A descriptive and cross-sectional study was conducted to assess the level of utilization of dental services and barriers to utilization of dental health services among rural population of Rewari district, Haryana.

This pilot study was conducted on 150 participants (50 Children and 100 Adults). Participants with other intellectual disabilities or systemic conditions which are known to influence oral health and are uncooperative were excluded from the study. Convenience sampling technique was used. The study was conducted for a period of 2 months from November 2019 to December 2019.

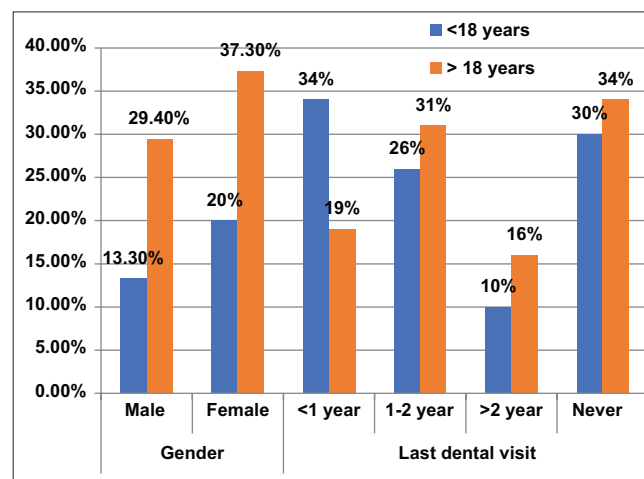
Before data collection and clinical examination, the purpose of the study was explained to each of the participants and informed consent was obtained. The study was conducted by a single investigator.

A pre-examined self-administered questionnaire having 28 questions and 22 questions for adults and children, respectively, was developed in English language and translated to Hindi, then through backtranslation transformed from Hindi to English.<sup>[1-5]</sup> The survey questionnaire was tested for reliability, for which, Cronbach's alpha value came out to be 0.72. Data was collected followed by clinical examination. Besides demographic profile, oral hygiene practices, dental visits history, and reasons for not visiting a dentist were recorded. This was filled in the presence of the investigator, who gave additional information whenever needed. This questionnaire included barriers to utilization of oral health services with following domains: Awareness, attitude, cost, accessibility, dentist-related factors, and fear. Responses were recorded on three-point scale (yes, no, and sometimes/don't know/uncertain). Among the domains awareness, attitude, cost, and fear were assessed for both the study groups. The variables such as sex, age, level of education, decayed, missing, and filled teeth surfaces (decayed, missing and filled surfaces/

Decayed, Missing and Filled Surfaces [dmfs/DMFS] index using WHO criteria) were recorded. Examination of subjects was done using American Dental Association (ADA) Type III Clinical Examination method. Ethical clearance was received from the institutional ethical committee. The data collected were entered into Microsoft Excel Spreadsheet and analyzed. Descriptive statistics were used to summarize the results. Chi-square test was used.  $P \leq 0.05$  was considered statistically significant. The confidence interval was set to 95%. Binary logistic regression analysis was performed using questions related to the last dental visit as dependent variables.

## RESULTS

The present, cross-sectional, and self-administered questionnaire study was done on rural population of Rewari District, Haryana. A total of 150 adults and children participated in the study. Out of all the participants, 50 (33.3%) were <18 years of age whereas 100 (66.6%) were more than 18 years of age [Figure 1]. Of the respondents, 17 (34.0%) were <18 years of age and 19 (19.0%) were more than 18 years of age and have visited a dentist within the past 1 year [Table 1]. In most subjects 83 (83%) adults and 42 (84.0%) children clean their teeth once a day. The most commonly reported reasons for the last dental visit were pain 17 (48.5%) in children and 34 (51.5%) in adults, followed by routine check-ups 9 (25.7%) and 21 (31.8%) in children and adults, respectively, restorative treatment 4 (11.4%) and 4 (6.0%) in both children and adults and other reasons such as oral prophylaxis and prosthesis reported in children and adults are 5 (14.2%) and 7 (10.6%), respectively [Table 2]. Majority of the respondents, 13 adults and seven children felt that "Dental treatment is not needed unless having pain." Three adults and a pair of children consider that "Dental treatment is costly" [Figure 2]. Seven adults and three children felt "I have fear of dental treatment"



**Figure 1:** Distribution of study subjects according to sex, age and last dental visit.

and 11 adults and three children felt “lack of time” as reason which was generally reported by study participants who are more than 18 years of age group [Table 3]. The mean score of DMFS/dmfs in adults is  $3.40 \pm 2.234$  and  $0.38 \pm 0.567$  in children [Table 4].

[Table 5] shows binary logistic regression analysis with dependent variable as visit to dentist in the last 12 months. It reveals that the strongest factors for not visiting dentist were belief that there is “no need unless having pain” in adults (odds ratio: 1.332; confidence interval: 0.451–3.932), “lack of time” (0.488; 0.186–1.280), and “fear of dental treatment” (1.044; 0.324–3.364) and results were found to be statistically significant ( $P = 0.011$ ).

## DISCUSSION

Dental services were underutilized, with 34.0% of the adult population never utilizing dental treatment. Other studies and data from other countries, along with China, corroborated this conclusion (20%).<sup>[6-9]</sup> In research, however, dental service consumption was shown to be high (67%)<sup>[10]</sup> and in developed countries like Denmark (61%)<sup>[11]</sup> and the

United Kingdom (47%).<sup>[12]</sup> The increased consumption of dental treatments in these nations can be attributed to health insurance, which is not available in India. Oral health insurance schemes should be implemented at both the micro and macro levels for our population. The present study is a wonderful opportunity to learn more about the pattern of dental service utilization and barriers among the Rewari District’s rural population. Brushing one’s teeth is a healthy habit that reflects one’s attitude toward oral health. According to the findings, only 8% of the participants used to brush twice a day. A study also found a link between toothbrushing frequency and dental service consumption.<sup>[6]</sup>

The most common cause for participants’ dental visits was pain (48%) followed by restorations (9.3%). This was similar to other studies by Kadaluru *et al.*,<sup>[6]</sup> Devaraj and Eswar,<sup>[8]</sup> Holm-Pedersen *et al.*,<sup>[13]</sup> and Murtomaa,<sup>[14]</sup> in which the most common treatments received by participants during their most recent dental visits were pain and restorations.

According to a Slack-Smith *et al.* study,<sup>[15]</sup> dental visits are frequently driven by pain and the need for emergency care. Low dental awareness, according to Ekanayake L *et al.*<sup>[16]</sup> and Manski and Moeller,<sup>[17]</sup> is a major factor in underutilization of dental services, and this may also be responsible for the late presentation of patients seeking treatment only when in pain, as found in our study, increasing the chances of receiving treatment.

The most common barrier was that “there is no need unless having pain.” Bhushan *et al.*<sup>[18]</sup> found the same thing in their other studies. As a result, we can conclude that patients only saw a dentist if they had symptoms like discomfort or an

**Table 1:** Distribution of study subjects according to sex, age, and last dental visit.

Variable	Age	
	Less than 18 years (n=50)	More than 18 years (n=100)
Gender		
Male	n (%)	n (%)
Female	20 (13.3)	44 (29.4)
Last dental visit		
Less than 1 year	30 (20.0)	56 (37.3)
1–2 year	17 (34.0)	19 (19.0)
More than 2 years	13 (26.0)	31 (31.0)
Never received dental care	5 (10.0)	16 (16.0)
	15 (30.0)	34 (34.0)

**Table 2:** Distribution of frequency of tooth brushing and previous dental visit history among study participants (n=150).

Variable	Age group	
	Less than 18 years (n=50)	More than 18 years (n=100)
Frequency of tooth brushing		
Once a day	42 (84.0)	83 (83.0)
Twice a day	4 (8.0)	10 (10.0)
Once or twice a week	4 (8.0)	7 (7.0)
Reason for the last dental visit		
Pain	17 (48.5)	34 (51.5)
Restorations	4 (11.4)	4 (6.0)
Routine check-ups	9 (25.7)	21 (31.8)
Other reasons	5 (14.2)	7 (10.6)

**Table 3:** Distribution of barriers for not utilizing the dental services among study participants.

Reason	Age group	
	Less than 18 years (n=50)	More than 18 years (n=100)
Lack of time	3 (20.0)	11 (32.4)
Affordability	2 (13.4)	3 (8.8)
Not needed unless having pain	7 (46.6)	13 (38.3)
Fear of dental treatment	3 (20.0)	7 (20.5)

**Table 4:** Mean caries experience (dmfs/DMFS in permanent teeth) among study participants.

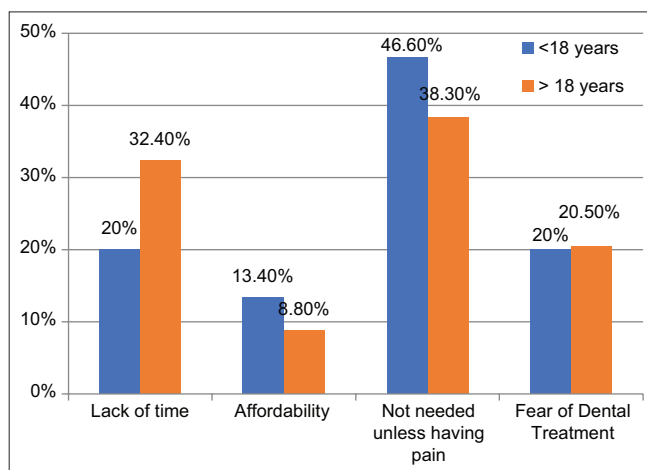
Caries Experience	Mean±SD
DMFS	3.40±2.234
dmfs	0.38±0.567

SD: Standard deviation, dmfs: Decayed, missing, and filled surface, DMFS: Decayed, Missing, and Filled Surface

**Table 5:** Binary logistic regression analysis with visit to dentist in the past 12 months as dependent variable among the study participants.

Age groups	More than 18 years of age			Less than 18 years of age		
	OR	CI	P-value	OR	CI	P-value
Age	1.044	0.970–1.124	0.249	1.04	0.742–1.466	0.81
Gender	0.809	0.255–2.569	0.719	1.379	0.325–5.847	0.662
Education	1.147	0.413–3.191	0.792	NA	NA	NA
Lack of Time	0.488	0.186–1.280	0.145	0.507	0.117–2.195	0.363
No need unless having pain	1.332	0.451–3.932	0.604	0.763	0.161–3.618	0.734
Fear of dental treatment	1.044	0.324–3.364	0.942	0.629	0.163–2.428	0.501

OR: Odds ratio, CI: 95% confidence interval, NA: Not applicable

**Figure 2:** Distribution of barriers to not utilizing the dental services among study participants.

emergency, as evidenced by the present study. They also believe that oral diseases are not as terrible as they claim, despite the fact that more than half of the population believes so. As a result, there is a need to raise oral health knowledge and encourage more positive attitudes in the same demographic.

It is critical to remove the barrier of high healthcare costs by holding free healthcare camps, which have proven to be beneficial in disease screening and preventive care. Participants in these camps can also receive a free recommendation if necessary.

Time constraints were also mentioned as a reason for not seeing a dentist in this study, as they were in Gururaj and Maheshwaran<sup>[19]</sup> and Kadaluru *et al.*<sup>[6]</sup>

The most common cause for dental appointments was tooth decay; other causes included pain and periodic check-ups. Obtaining dental treatment is difficult for service users due to a lack of access to oral care, which is worsened by behavioral and communication issues.<sup>[20]</sup>

Patients' expectations are dependent on their experiences, surroundings, social background, and personality, according to studies.<sup>[21]</sup> Patient behavior, limited awareness, and

treatment cost are the key contributing factors determining patient satisfaction in a rural population.<sup>[18]</sup>

This study focuses on providing oral healthcare to rural populations, including preventive and promotional components as well as barriers to dental health service utilization. The cost of treatment was a significant factor in obtaining therapy, particularly in rural areas. As we can see, the mouth is seen as a separate entity from the rest of the body in the culture. This way of thinking should be abandoned, since health centers have repeatedly said that dental health has a greater impact on overall health, causing pain, suffering, and changes in eating habits, speech, and overall well-being.<sup>[12]</sup> Rural health issues should be the emphasis of dental education.

A strict preventive regimen should be adopted, including dental hygiene instructions, diet advice, and the proper use of topical fluoride and fissure sealants. It is critical to practice good oral hygiene and have expert cleanings regularly. People should be taught fundamental oral hygiene techniques such as brushing their teeth properly, using fluoride toothpaste, and washing their mouths after meals. They should also include information on the impacts of different types of sweets and how often they are consumed. Dentists should educate patients about the importance of good oral hygiene and encourage them to visit the dentist regularly.

### Limitations

The cross-sectional study design prevents the identification of causality between barriers to oral health service utilization and dental visits. The present study may have been biased due to the inherent bias of questionnaire studies. As a result, more longitudinal studies are needed to have a better knowledge of oral health issues and the relationship between barriers to oral health treatment consumption. Furthermore, the study's small sample size may limit its ability to generalize its findings to a larger population.

### CONCLUSION

The findings revealed a detailed assessment of the level of dental service utilization and impediments to dental



treatment utilization among the rural population of Rewari district, Haryana. Only 35.3% of the population said that they had visited the dentist in the preceding year. In this study, the most often stated reason for not visiting a dentist was “Not needed unless in pain,” suggesting the people’s low perceived need. The cost of dental care, patients’ fear of dental treatment, and patients’ self-care approaches were identified as the key barriers to dental service utilization. The results of this survey revealed a gap in the respondents’ awareness regarding their dental problems. Patients are unable to link early treatment with improved health. As a result, specific efforts to raise awareness about dental health are required.

### Recommendations

To improve access to dental care, oral health must be given the right priority, and a wide range of oral care facilities must be supplied at discounted costs. As the dental sector suffers the impact of shifting dynamics that influence the number of people who visit the dentist and the kind of services they consume, data on the population’s use of dental services is both important and valuable. When such data are accessible, it can assist dentists and planners in making more efficient labor and financial allocations. Resources are less likely to be allocated to uses that provide the largest amount of additional benefits if it is not present.

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### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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### Conflicts of interest

There are no conflicts of interest.

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