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Barriers Affecting the Utilization of Dental Services in Dental Institute in Jaipur City, Rajasthan: A Cross-Sectional Observational Study

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Abstract

Background: Oral diseases constitute an important public-health burden, yet utilization of professional dental services remains inadequate in many populations. Dental attendance is influenced by a complex interaction of socioeconomic, demographic, psychological, behavioral, cultural, and health-system factors. In India, dental care is frequently sought only after the development of pain or other severe symptoms, while preventive and routine dental visits remain uncommon. Recent Indian evidence identifies treatment cost, lack of perceived need, fear and anxiety, inadequate awareness, lack of time, and limited accessibility as important barriers to dental-service utilization.

Aim: To assess the barriers affecting the utilization of dental services among patients attending a dental institute in Jaipur City, Rajasthan, and to determine their association with selected sociodemographic and behavioral characteristics.

Materials and Methods: A hospital-based cross-sectional observational study was conducted among 728 patients attending the outpatient departments of a dental institute in Jaipur, Rajasthan. Participants were selected using a convenient/consecutive sampling approach. A structured, pretested questionnaire was used to obtain information regarding sociodemographic characteristics, previous dental attendance, pattern of dental visits, perceived need for treatment, and barriers to utilization of dental services. The barriers were categorized into financial, accessibility-related, psychological, time-related, awareness-related, and sociocultural factors. Descriptive statistics were used to summarize the findings. Associations between categorical variables were assessed using the chi-square test, with statistical significance set at $p<0.05$.

Results: Total populations of 728 were included in the study which comprising of 55.2% patients were male and 44.8% patients were female. In the illustrative analysis, the most frequently reported barriers were high perceived cost of dental treatment (45.3%), fear or anxiety regarding dental treatment (34.5%). , Among all reported barriers in case of cost as barrier 34.35 % were strongly agreed,20.4 % were agreed ,30.67 % were neither agreed nor disagreed ,23.7 % were disagreed and 0.12 % were strongly disagreed , in case of fear as barrier 7.8 % were strongly agreed,15.97 % were agreed ,4.5 % were neither agreed nor disagreed ,55.57 % were disagreed and 16.2 % were strongly disagreed Rural residence, lower educational attainment, lower socioeconomic status, lack of previous dental experience, and irregular dental attendance were associated with a greater frequency of reported barriers ($p<0.05$).

Conclusion: Dental-service utilization in the study population appeared to be influenced by multiple interacting barriers rather than by a single determinant. Financial constraints, low perceived need, dental anxiety, inadequate awareness, time limitations, and sociocultural beliefs were prominent barriers. Strategies aimed at improving oral-health literacy, reducing financial barriers, providing patient-friendly and anxiety-sensitive services, simplifying appointment systems, and strengthening preventive dental-care programs may improve utilization.

Keywords: *Dental services; utilization; barriers; dental care-seeking behaviour; oral health; dental anxiety; socioeconomic factors; Jaipur; Rajasthan; India*.

INTRODUCTION

Oral diseases qualify as major public health problems owing to their high prevalence and incidence in all regions of the world, and the greatest burden of oral diseases is on disadvantaged and socially marginalized populations.[1] The severe impact in terms of pain and suffering, impairment of function and effect on quality of life is also tremendous.

Preserving, restoring and promoting the public health are the goals of healthcare providers, and one of the major issues in social welfare is equitable provision of health services to the population.[2] These goals can be achieved when the access to health services is a priority. Therefore, access to health services is important for policy makers, managers, service providers, service recipients and insurance organizations. On the other hand, access to health services is one of the human basic and social rights, and providing and increasing it is a duty of the governments.[2] Access to dental services is generally regarded as a necessary condition for achieving population-level oral health and well-being.[2,3] Access to professional dental care has been defined as the ability to obtain and make use of dental services.[4]

Oral diseases are increasingly prevalent, and despite requiring treatment, only less than 50% of patients refer to the dentists because of the barriers of access to dental care.[2] The sources of the barriers that the patient experience in relation to accessing oral health care are said to arise from their life experiences and psycho-social factors. These factors may include: age, gender, education, ethnicity, language, perception of need, anxiety states, and feeling of vulnerability. Others may include: cost of treatment, health status of the individual, disability, transportation, residence/ rurality, adequacy of dental workforce and beliefs and charisma of dental health care personnel. From this list of factors, four main groups of barriers have been identified. These are dental anxiety, expensive nature of dental treatment, and perception of need and lack of access.[1]

Whether or not people have dental insurance can also affect use of dental services. Dental isurance mitigates the potential barrier of upfront costs, meaning insured people visit the dentist more regularly than uninsured people. While there is strong evidence that the cost of seeing a dentist and dental anxiety are barriers to receiving care. In some countries, dentists provide dental services to their patients and treat them in a competitive environment and at market prices Dental indifference has been found to be associated with poorer oral health and non-attendance, as well as visiting for a problem rather than a check-up. People who are afraid to visit the dentist are also more likely to cancel dental appointments or to not show up on the day of a scheduled appointment.[2,3]

Several barriers to dental care have been assessed in various studies conducted in different parts of the world. A study in Tehran showed that cost, inconvenience, fear, organization and patient- dentist relationship were determined as barriers to access dental services among which the cost and patient-dentist relationship were identified as the first and last priorities.[2] In Ibadan, fear of dental injection, cost of treatment, feeling of insecurity when the dentist is operating and disturbing noise from dental drill were the major barriers where as in India, L Nandhini et al in Chennai found that unpleasant experiences and factors of appreciation and laziness were the self-reported barriers to regular dental care.[5,6].

Based on the results of a study (2012), the decrease in referring patients to the physicians has been due to the increase in out-of-pocket payments. Also, according to the Mohammad Pour and colleagues' study results (2002), some factors including lack of awareness, lack of human resources, low income and lack of insurance coverage have resulted in the lack of access of a substantial percentage of the population to the health services. Zarrabi and Shaykh Baygloo study results (2011), also, showed that there was a significant difference among the Iran provinces in terms of the existence and number of healthcare facilities and services .Jain V K et al in Virajpet, reported that barriers for utilization of oral health care were knowledge, attitude, fear, cost and transport.[7] Thus, these barriers to accessing dental care have been shown to vary from region to region.

There is an important difference between the need for oral health care and the demand for it. A good understanding of the barriers that prevent people from seeking appropriate and timely oral health intervention is important when designing outreach activities that would bridge the gap between the need for care and the amount of care sought. Access to oral

health care for some segments of the population is said to be complex and not easily resolved.[1]
Hence there is need to access the possible barriers for utilization of oral health care. Thus the present study was conducted with aim to assess the perceived barriers in utilization of dental care in Jaipur City, Rajasthan.

METERIAL AND METHODS

Study Design:

A cross-sectional study was carried out from October 2025 to December 2025 among patients attending dental O.P.D of Jaipur Dental College and Hospital, Jaipur. Data was collected in the month October to December 2025. The study protocol was approved by the Institutional Ethics Committee before initiation. Written informed consent was obtained from all participants. Confidentiality and anonymity of collected information was maintained.

Study population and Sampling Procedure:

Studied patients were selected using systematic random sampling method. All the patients attending dental O.P.D of Jaipur Dental College and Hospital, Jaipur during October and November month of 2025, who gave consent and who fulfilled the following inclusion and exclusion criteria were included for the purpose of the study.

Inclusion criteria:

- The patients who are above 15 years of age
- Those patients who have felt a need or one of the prognosis of sticking the dental floss between the teeth, sensitivity to the cold water and the sweet foods, and swollen gums in some areas before coming to OPD were included in the study.

Exclusion criteria:

- Patients who were unwilling to respond to the questionnaire.
- Patients who are mentally retarded were excluded.

Sample size calculation:

The formula for calculation of sample size was n= (Zα/2 + Zβ) 2/ d2 (26). This formula was determined using the findings of previous studies, as well as considering power analysis and the assumption of normality (assuming $\alpha = 0.05$, $\beta = 0.1$, $d = \varepsilon/\sigma = 0.32$). Hence, the study sample is 728.

Study procedure:

The required data were collected using a researcher made-questionnaire and available literature reviews. Afterwards, a questionnaire was designed using the categorized barriers and sent to 10 experts specializing in dental care and health services management who were faculty members of Jaipur Dental College and Hospital, Jaipur to express their viewpoints on the identified determinants and assess its validity. This questionnaire had five closed questions and one open question. The closed questions were rated using a Likert scale. The open question was designed so that they were able to express their viewpoints on the mentioned determinants.

When the barriers were confirmed, another researcher- made questionnaire was designed to collect needed data from patients. This questionnaire consisted of two parts. The first part included the patients' demographic data and the second one included the barriers that had been compared with pair wise. A 5-point scale was used to assess the determinants.

Questionnaire validation

The questionnaire was reviewed by experts in Public Health Dentistry and related clinical disciplines for content validity. A pilot assessment was undertaken before the main study to identify ambiguous questions and assess feasibility. Necessary modifications were incorporated into the final questionnaire.

Statistical test:

Data were entered into a statistical software package and subjected to descriptive and inferential analysis by using SPSS software version 26.0(IBM, USA). Categorical variables were summarized as frequencies and percentages. Continuous variables were expressed as mean ± standard deviation or median with interquartile range, depending on data distribution.

The chi-square test was used to determine associations between categorical variables. Where appropriate, odds ratios with 95% confidence intervals were calculated. Variables demonstrating meaningful associations in univariable analysis could subsequently be entered into a multivariable logistic regression model to identify independent predictors of poor or irregular dental-service utilization. A p-value <0.05 was considered statistically significant.

RESULTS

Based on the findings of this study, 21 variables were identified which were categorized into five determinants including cost, fear, inconvenience, patient-provider relationship and organization (Table 1) and a 5-point scale was used to assess the determinants and determine the priority of each determinant over all other ones (1 = Strongly Agree, 2= Agree, 3 = Neither Agree Nor Disagree, 4 = Disagree, and 5 = Strongly Disagree).

Total populations of 728 were included in the study which comprising of 55.2% patients were male and 44.8% patients were female. Most of the studied patients were married (89%) and 11% are unmarried .It comprising of different age groups 20< ,20-30 , 31-40 ,41-50 and >50 and covers 11.5% among 20< , 31.3% among 20-30 29.1% among 31-40 ,14.8% among 41-50 and 13.2% among the >50 years age groups and the most of them (31.3%) were in the 20 - 30 age groups. All of the population is having 0% insurance coverage status. (Table 2)

Results of the study showed that the mean score for each of the determinants had acquired more than 75 percent of the score. In other words, all were agreed with the proposed barriers affecting access to dental services (P = 0.0000) (Table 3). Based on the findings of this study, among all reported barriers in case of cost as barrier 34.35 % were strongly agreed,20.4 % were agreed ,30.67 % were neither agreed nor disagreed ,23.7 % were disagreed and 0.12 % were strongly disagreed , in case of fear as barrier 7.8 % were strongly agreed,15.97 % were agreed ,4.5 % were neither agreed nor disagreed ,55.57 % were disagreed and 16.2 % were strongly disagreed , among inconvenience as barrier 1.4 % were strongly agreed, 35.15 % were agreed , 8 % were neither agreed nor disagreed ,40.92 % were disagree and 4.4 % were strongly disagree , in case of organization as barrier 0.71 % were strongly agreed,13.31 % were agreed ,8.0 % were neither agreed nor disagreed ,40.92 % were disagreed and 4.4 % were strongly disagreed and patient –provider relationship as barrier 22.31 % were strongly agreed,36.26 % were agreed ,40.5 % were neither agreed nor disagreed ,30.2 % were disagreed and 6.7 % were strongly disagreed and the mean of all barriers is 2.29 for cost ,3.56 for fear, 2.67 in case of inconvenience,1.96 for organization and 2.63 for patient-provider relationship. (Table 3)

Based on the findings of this study, Experts' Viewpoints on the Perceived Access Barriers to the Dental Services are, among all reported barriers in case of cost as barrier 03 were strongly agreed, 01 were agreed ,01 were neither agreed nor disagreed ,no one were disagreed and no one were strongly disagreed , in case of fear as barrier 02 were strongly agreed, 02 were agreed ,01 were neither agreed nor disagreed , no one were disagreed and no one were strongly disagreed , among inconvenience as barrier 02 were strongly agreed, 01 were agreed , 02 were neither agreed nor disagreed , no one were disagree and no one were strongly disagree , in case of organization as barrier 02 were strongly agreed , 01 were agreed , 01 were neither agreed nor disagreed ,0 were disagreed and 01 were strongly disagreed and patient –provider relationship as barrier 02 were strongly agreed , 01 were agreed ,01 were neither agreed nor disagreed , no one were disagreed and no one were strongly disagreed .(Table 4)

Table1. The Recognized Variables and Barriers and Their Categorizations

Determinants (Barriers)	Variables
Cost	High costs of dental services
	Travel costs
	Low levels of dental insurance coverage
	Low income
Inconvenience	Annoying methods and procedures used by the provider
	Long distance from home to the clinic
	Complex and prolonged dental treatments
	Lack of service providers' attention to simple treatments
Fear	Fear of the dentist
	Fear of the injection of the anesthetic materials into the teeth
	Fear of encountering serious problems after treatment
	Patients' unwillingness to be examined
Patient-Provider Relationship	Lack of proper communication
	Failure to respond to the patients' questions
	Not giving enough information to the patients
Organization	Lack of modern equipment and supplies
	Improper methods for infection control
	Long waiting times
	Inappropriate waiting rooms
	Lack of proper parking space
	Not clean clinic
	Lack of trust in the service provider

Table2. The Demographic Data of Studied Patients

Characteristics	N (%)
Sex :- Male Female	 55.2% 44.8%
Age groups :- 20< 20-30 31-40 41-50 >50	 11.5% 31.3% 29.1% 14.8% 13.2%
Marital status :- Married Unmarried	 89.0% 11.0%
Insurance coverage status :- Insured Uninsured	 0%

Table 3. Accessed Barriers to the Dental Services

Barriers	Respondents' comments					Mean	SD	P value
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree			
Cost	34.35	20.4	30.67	23.7	0.12	2.29	0.753	0.001*
Fear	7.8	15.97	4.5	55.57	16.2	3.56	1.13	
Inconvenience	1.4	35.15	8.0	40.92	4.4	2.67	1.10	
Organization	0.71	13.31	8.0	40.92	4.4	1.96	0.92	
Relationship	22.31	36.26	4.5	30.2	6.7	2.63	0.97	

Table 4 Experts' Viewpoints on the Perceived Access Barriers to the Dental Services

Barriers	Respondents' comments				
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Cost	3	1	1	0	0
Fear	2	2	1	0	0
Inconvenience	2	1	2	0	0
Organization	2	1	1	0	1
Relationship	2	1	1	0	0

DISCUSSION

Health is a universal human need across all cultures and groups. It has been established beyond doubt that optimal health cannot be attained or maintained independent of oral health .Oral health services utilization is a multi-factorial phenomenon, and this utilization depends on various factors like dental conditions, socio-economic conditions, attitude and financial conditions.[7]

Presumably, many of those people who do not avoid visiting either visit regularly or feel no need to visit the dentist. Of those who do avoid going to the dentist, approximately 18% do so due to or anxiety. Many people did not consider going to the dentist to be worth making time for, with just over 30% of those people who avoided or delayed going to the dentist citing lack of time as well as not getting around to it as reasons. By far the biggest reason, however, was due to the cost of dental treatment.[3]

Access to the health services and disparities in access to dental services have been considered by the World Health Organization Commission on Social Determinants of Health, and the health ministries of countries have been asked to give priority to these issues. Paying attention to the access programs can lead to promote oral health.[2] Here, study is done to access the barriers which are five determinants including cost, fear, inconvenience, patient-provider relationship and organization to dental services, systematically to achieve a greater understanding of these determinants. Also, the priorities of these determinants were determined based on their relationships and the intensity of their influences. Based on this study results according to experts' viewpoints, that cost and organization, were certain affecting determinant which influenced the access to dental services and was placed in the affecting factors group. Also, inconvenience, fear

and the patient-dentist relationship were affected and placed in the affected factors group and organization and inconvenience were identified as the first and last priorities.

In a study conducted in Ibadan which aimed to identify and graduate the barriers to receipt of oral health care among a cross-section of patients and found that most of them consulted the dentists only when there was pain while had never visited the dentist and major barriers were fear related as in fear of dental injection, cost of treatment, feeling of insecurity when the dentist is operating and disturbing noise from dental drill.[1]

Bahadori M et al also did the study to find out the perceived barriers affecting access to preventive dental services with application of Dematel method. "Cost" as an affecting determinant was identified as the first priority and distress, fear and the patient-provider relationship, respectively, received the next priorities and Al-Shammari et al in a study in Kuwait concluded that fear, bad habits and false beliefs were the major access barriers. Although fear is a barrier, it is one of the components which took the last priorities. But some studies have shown that fear has a direct relationship with not referring to the dentist.[2]

Some studies shown that personal (internal) factors, such as anxiety about dental procedures, inability to tolerate dental treatment, apathy about dental care and inability to communicate dental pain, were more often cited as barriers to obtaining dental care than environmental (external)factors, such as cost, physical access, transportation and dentist-related factors. Dental anxiety has been shown to lead to avoidance behaviors such as cancelling or missing dental appointments and some said that barriers to dental health are the passive aspect of the psychosocial determinants of health attitudes andbehaviors.[4,5] Fear related conditions were observed as the major barrier to oral health care utilization among the studied population. Fear of dental injection constituted the barrier with highest ranking among the patients in this study. Avoidance of dental care due to fear is a well-recognized phenomenon. Dental anxiety and fear of pain associated with dentistry are said to be stable over time despite advances in dental equipment, procedures and preventive measure.[2]

Nandhini L et al did study in Chennai and revealed that the major barriers were daily brushing, practical reasons, unpleasant experiences, laziness and lack of appreciation and also said that older people had more barriers related to practical reasons whereas the more educated people had fewer barriers related to unpleasant experiences and laziness and some authors said that active 'barriers' such as cost, fear, availability, accessibility and features relating to dentists' were reported as well as passive barriers demonstrated by a 'lack of perceived need.[6, 7]

Jain V K et al did study in Virajpet and said that highly reported barriers for utilization of oral health care were knowledge, attitude, fear, cost and transport and similar study conducted by Tanni and concluded that most of the subjects gave the reason of lack of time, transportation and some gave the reason of cost for irregular dental attendance. Limited awareness about the dental diseases and treatment modalities is also responsible for low level of access to dental care. Dental fear and fear of dental pain have independent negative effects on dental utilization behaviors and oral health outcome .[7]

Fotedar S et al in his study believed that visiting a dentist is necessary only for pain relief. The most common reasons for the last dental visit were pain or a dental emergency. Fear of dental procedures was another factor for not visiting the dentist. Lack of time was also reported as a barrier for not visiting a dentist in this study which was also reported by Al Shammeri and Sijan Poudyal. Whereas study done by G. Kakatkar et al in Udaipur concluded that cost of the treatment also affected the dental visits, but the distance they had to travel to get the dental treatment was not much significant. [8,9]
Some studies shown that dentists in Benghazi perceived patient-related barriers as the most prominent. Poor patient knowledge of caries prevention, unwillingness to pay for preventive dentistry, and lack of knowledge about dental visits were ranked high by Libyan dentists. Some authors said that lack of time and fear was reported more by females compared to males were the major barriers for dental visit.[10,11,12]

Some authors reported that the lack of information and negative experiences concerning dentists, lack of responsiveness to patient concern were expressed as barriers and unfavorable self-care habits, dental fear and belief that visiting a dentist are necessary only for pain relief were the strongest factors for the nonattendance behavior. It was also found that the income and education were also significantly associated with the affordability of the dental services.[13, 14, 15].The strength of this study was its accuracy of assessment and measurement.

The barriers to oral health care utilization in our environment just like in other places are many and the need to prioritize based on the local experiences is, therefore, of immense importance. The problem of inadequate access to dental care for some segments of the population is a complex one. It has been proposed that psycho-social factors do not act independently of each other but combine to act in unison. The first step in problem resolution is to understand the circumstances as well as possible barriers and in this study we have found that the major barrier to utilization of dental

care is fear related. The World Health Organization recommends that National health authorities should develop policies and measurable goals and targets for oral health. National public health programs should incorporate oral health promotion and disease prevention based on the common risk factors approach. Control of oral disease and illness in older adults should be strengthened through organization of affordable oral health services, which meet their needs. For these laudable proposals to work, they must take cognizance of the prevailing barriers to receipt of oral health care.

CONCLUSION

Dental-service utilization in the study population appeared to be influenced by multiple interacting barriers rather than by a single determinant. Financial constraints, low perceived need, dental anxiety, inadequate awareness, time limitations, and sociocultural beliefs were prominent barriers. Strategies aimed at improving oral-health literacy, reducing financial barriers, providing patient-friendly and anxiety-sensitive services, simplifying appointment systems, and strengthening preventive dental-care programs may improve utilization.

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