

Utilization of dental care: An Indian outlook

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Abstract

Oral health has a significant impact on the quality of life, appearance, and self-esteem of the people. Preventive dental visits help in the early detection and treatment of oral diseases. Dental care utilization can be defined as the percentage of the population who access dental services over a specified period of time. There are reports that dental patients only visit the dentist when in pain and never bother to return for follow-up in most cases. To improve oral health outcomes an adequate knowledge of the way the individuals use health services and the factors predictive of this behavior is essential. The interest in developing models explaining the utilization of dental services has increased; issues like dental anxiety, price, income, the distance a person had to travel to get care, and preference for preservation of teeth are treated as barriers in regular dental care. Published materials which pertain to the use of dental services by Indian population have been reviewed and analyzed in depth in the present study. Dental surgeons and dental health workers have to play an adequate role in facilitating public enlightenment that people may appreciate the need for regular dental care and make adequate and proper use of the available dental care facilities.

Key words: Access, awareness, dental care, India, utilization

INTRODUCTION

Oral health is a critical but an overlooked component of overall health and well-being among children and adults. Oral health problems such as dental caries, periodontitis, and oral cancers are a global health problem in both industrialized and especially in developing countries. Dental disease restricts activities in school, work, and home and often significantly diminishes the quality of life for many children and adults, especially those who are low-income or uninsured. Huge differences exist in health status including oral health between urban and rural population in India and other developing countries.^[1] Although there have been impressive advances in both dental technology and in the scientific understanding of

oral diseases, significant disparities remain in both the rates of dental disease and access to dental care among sub-groups of the population.

India has approximately 289 dental colleges with around 25,000 graduates each year [Figure 1]. Even with such a large work force, most of the people in India do not have access to basic oral health care.^[2] The dentist to population ratio is 1:10,000 in urban areas whereas it drastically falls to 1:150,000 in rural areas.^[3] Although, dental care is a part of primary health care in India, dental care services are available in very few states at the primary health care level. Patients are not covered under any type of insurance, and generally pay out of their pockets to get treatment from both public and private dentists. Utilization is the actual attendance by the members of the public at oral health care facilities to receive care. In regions where adequate dental manpower is available yet the utilization of oral health care services is low thereby widening the oral health differences across the social economic classes.^[1] Various factors like demographic, behavioral, socio-economic, cultural, and epidemiological, etc., contribute to people's decision to either forgo care or seek professional assistance for dental problems

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Figure 1: Geographical distribution of dental colleges in India

[Table 1].^[4,5] The present paper focuses on the availability of dental care and the pattern of utilization of dental care facilities by the Indian population residing in different parts of the country.

Methods

A thorough review of literature was done which engaged most of the articles published in peer-reviewed journals relating to the subject of utilization of dental care among Indian population. The review itself began with the search of relevant key words linked with the dental care like utilization, access, barriers, dental care, India, etc., in various search engines including PubMed. Reports published only in English language were included in the review. The spotlight of the present review would not only be on the pattern of utilization of dental services by the Indian population but also on various hurdles that come across utilization. The search also targeted various socio-demographic characteristics and anxiety levels of the subjects that can influence the rate of dental service attenders. The present review also highlights important measures that can be undertaken to improve access for effective utilization of dental services.

Table 1: Various factors influencing utilization of dental services

Consumer issues	Provider issues
Presence or absence of dental symptoms	Lack of specialists in area
Poverty	Complex consumer needs and issues
Geographical region	Paper work and reimbursement issues
Social status	Number of persons/dentist
Religion	Actual and perceived fees of dentist
Race or ethnicity	Waiting time
Occupation	Experience of the dentist
Income	Economic issues
Marital status	Type of dental service
Community type	Prevention vs. treatment services

Oral health care system in India

Oral health care in India is delivered mainly by the following establishments:^[6]

- Government organizations
 - Government Dental Colleges
 - Government Medical Colleges and Dental Wing
 - District Hospitals with Dental Unit
 - Community Health Centers
 - Primary Health Centers.
- Non-governmental organizations
 - Private Dental Colleges
 - Private Medical Colleges with Dental Wing
 - Corporate Hospitals with Dental Units.
- Private practitioners
 - Private dental practitioners
 - Private dental hospitals
 - Private medical hospitals with dental units.
- Indigenous systems
 - Ayurveda
 - Sidda
 - Unani
 - Homeopathy.

Majority of dental services in India is being provided by the private dental practitioners, followed by non-governmental organizations. Various nation-wide surveys have conducted to study the pattern of utilization of dental services by Indian population. The main objective behind these surveys was to evaluate the various factors that contributed towards utilization of dental services by the people residing in varied geographical regions of the country and factors predictive of this behavior.

Studies conducted in Northern India

A retrospective study was conducted to evaluate the type of patients, disease pattern, and services rendered in dental outreach programs in rural areas of Haryana, India.^[7] A total of 1371 individuals attended the outreach program seeking the treatment. The results of the study indicated that utilization of dental services was found to be more in females than in males. The utilization of dental services

was found to be influenced by the socio-demographic characteristics of the population like age, education, occupation, etc., The study concluded that there was need to motivate people giving them information but paying attention to the individual reasons which restricted their behavior.

A cross-sectional study was carried out in Chandigarh in the year 2008, over a period of 8 months, which had two components: Community survey and the Health Facility survey.^[8] The main objective of the study was to determine the level of dental health care assess and associated factors, at various public health facilities of Chandigarh. The community survey included interviews of adult respondents at their homes and the health facility survey was initiated to interview the dentists at public health facilities to analyze the records in their clinics. In the community survey, a total of 203 persons were interviewed, 101 in urban areas and 102 in rural areas. Out of all the respondents who were having dental problems at the time of survey, 40% in the urban areas and 57.7% in the rural areas preferred to visit a dentist in the government set up for their problem. Giving less importance to dental problems, lack of time, and self-medicating were other reasons cited for not consulting the dentist. Time taken to reach a dentist was more for rural when compared with urban respondents. Therefore, specific efforts targeted to increase awareness toward oral health are required.

A three-phase survey was conducted in Delhi in 2003 by Maulana Azad Dental College and Hospital and supported by the Government of India WHO Collaborative Program. The main objectives of the study were to identify the oral health practices and patterns of utilization of dental services, to assess oral health status and treatment needs of the elderly population, and to test alternate strategies for controlling oral health problems among the elderly.^[9] The rural areas of Delhi were included in the present study and a two stage sampling technique was adopted. Most of the subjects (80%) reported availability of dental services in their area, of which a major proportion was being provided by the private sector. One-fifth of the subjects reported having suffered from dental problems and 60% of these visited a dentist to avail dental care. Reasons given by the subjects as barriers to accessing oral health care were related to lack of priority for oral health (attitudes) and their dependent status (non-ambulatory/disabled elderly). Therefore it was emphasized to change patient perception on oral health through health education and incorporate domiciliary dental care in gerontology.

A study was conducted in a group of six villages in the district of Lucknow, Uttar Pradesh. A total of 227 individuals aged 50 years or above were interviewed and

clinically examined.^[10] An educational and motivational program to increase prosthodontic awareness was organized and results were evaluated before and after the program. Certain myths that proved to be a hurdle in utilization of dental services prevailed in the study population like tooth loss is an extension of old age, eating tobacco prevented caries, dental diseases can be cured by medicines alone, tooth extraction leads to loss of vision, and oral prophylaxis causes loosening of teeth.

Studies conducted in Western India

A survey was conducted in Udaipur city in 2008, which is located in south-eastern zone of Rajasthan state.^[11] Dental anxiety is often reported as a cause of irregular dental attendance, delay in seeking dental care or even avoidance of dental care.^[12,13] Therefore, the aim of the study was to examine relationship between regularity of dental attendance and other variables like dental anxiety, dental behavior of parents, the dental upbringing of the respondents, education, socio-economic status, and sex. Many people all over the world are dentally anxious, but different studies show considerable results. According to the results of the present study, dentally anxious subjects are more irregular dental attendees than non-anxious people. Non-anxious who are regular dental attendees comprise 14.7%. Education, dental upbringing, regular dental attendance, socio-economic status, and interaction between education and anxiety were found to be importance for the prediction of regularity of dental attendance.

Another study which co-related anxiety level of the subjects with socio-demographic characteristics was conducted in Gujarat.^[14] A total of 150 patients waiting in the outpatient Department of Oral Diagnosis of a Dental College in Vadodara were included in the study. Results of the study indicated that prevalence of dental anxiety among the study population was 46%. Females were found to be significantly more anxious than the males. Subjects residing in villages were more anxious when compared with the subjects residing in the city. Subjects with traumatic negative dental experience in the past showed higher anxiety scores. This can lead to the development of negative attitude toward dentist or dental treatment and consequently non-utilization of dental services.^[15] It was emphasized to include behavior sciences in dental education and the integration of ethical considerations in the academic dental curriculum could help to improve the situation.

A descriptive cross-sectional study was conducted in Jaipur, Rajasthan to determine the association between socio-demographic factors and dental services use among patients visiting a dental college and hospital.^[16] The study sample included 180 people, aged 15-65 years visiting the outpatient department of the hospital in a 5-day period.

According to the results of the study, place of residence and income/month were significantly associated with dental service utilization as people residing in urban areas and economically sound visited the dentist more often when compared with people residing in rural areas and belonging to low-income groups. However, there was no significant difference between age, gender, and education level with dental service utilization. It is cited that this could be due to the fact that the dental college hospitals and most of the private dental clinics are situated within the city limits and very less or virtually no dental care services are available in the rural areas.

A cross-sectional survey was carried out among 427 randomly selected individuals in Udaipur in 2009 using a pre-tested questionnaire.^[17] The objective of this study was to determine the barriers in regular dental care and home care and to assess their association with age, sex, education, and income. Results of the survey showed that the male group had more dental visits, but females experienced higher dental fear. The younger age group had more visits within 1 year in comparison to the older group. Increase in education decreases the barriers for regular dental care. Income had a significantly negative correlation with dental visit. This study also revealed the patient's perceived need that people visited the dentist only if they had symptoms which may be due to their belief that dental conditions are not serious or life threatening. It is suggested that to motivate people successfully, one not only has to give them information but also has to pay attention to the individual reasons which restrict their behavior.

Results of another cross-sectional survey^[18] conducted to investigate and compare the influence of social and cultural factors as access barriers to oral health care amongst people from various social classes in Pimpri, Gujarat indicated that irrespective of the social class difference, 88% participants wished to seek only expert/professional advice for the dental treatment. Unavailability of services on Sunday, going to dentist only when in pain, trying self-care or home remedy, inadequate government policies, and budgetary constraints were among the major access barriers which proved to be an obstacle in utilization of dental care.

Surveys conducted on South Indian population

A house-to-house survey was conducted in the field practice in Mangalore, Karnataka where dental services are provided free of cost. The main objective of the survey was to determine the factors related to the utilization of dental services.^[19] The study sample comprised 195 adults to whom questionnaires were distributed. The results of the study depicted that nearly 30% of the study population had never visited a dentist although 44% of them had dental problems at the start of the study and majority of them

were aware that free preventive dental procedures were provided nearby. Not having any problems with their teeth and lack of time were the two major barriers for dental visit reported by the study population. It is recommended that awareness of the people have to be improved and people be motivated to use the services available so that they can lead a socially and economically productive life.

A community-based cross-sectional study was conducted among 300 people aged 60 years and above in villages around Manipal, South India in 2008.^[20] The objective behind the survey was to identify the various barriers to avail dental health services. A house-to-house interview was conducted on 300 individuals who comprised the study population. The available dental care agencies were private clinics and government hospitals. Among them 90% who utilized dental agency utilized private dental care. The remaining utilized traditional medicines for dental problems. A positive correlation was found between socio-economic status and readiness to avail free dental services. Age was cited as an important barrier to avail dental services even if services were given free of cost. As age increased, utilization of dental services decreased. Anxiety and fear of dental treatment was more common in women especially those of low-socio-economic status. Imparting preventive dental education and strengthening of the primary health centers can go long way in reducing these barriers.

A cross-sectional study was conducted among 11-12 year school children in Bangalore city. The aim of this study was to assess knowledge, attitude, and practice towards oral health.^[21] The study group comprised 212 children (males and females). The survey found that pain and discomfort from teeth were common whereas dental visits were infrequent. Fear of the dentist was the main cause of irregular visit in 46% of the study participants. Findings of this study also show that utilization of dental service is mainly for pain relief with the mother being the prime person involved in the utilization of dental services. It is suggested that systematic community-oriented oral health promotion programs are needed to target lifestyles and needs of school children.

A study was conducted among the municipal employees of Mysore city in 2004 to assess the prevalence of dental caries, periodontal diseases, oral pre-malignant, and malignant lesions in relation to socio-economic factors.^[22] According to the findings of the study, subjects who had caries were higher in the persons with lower socio-economic status. This can be attributed towards poor utilization of dental services which can be related to the cost and lack of awareness on the etiological factors for oral diseases.^[23,24] During any dental program planning,

priority should be given to lower class people having higher prevalence of diseases and unmet treatment needs.

Other studies

A study was conducted in Majuli, Assam to find out various medicinal plants used for dental care either in flowering or fruiting stage by common people.^[25] During the survey a total number of 23 plant species belonging to 15 family were recorded and use of plant parts are different to different localities. The traditional method of treatments and cares are still prevalent within different tribes of Majuli, Assam. The present trend of urbanization of the study areas also indicate that in spite of establishment of small health centers in the area, uses of plants and traditional practices will continue to play a significant role in the socio-cultural life of these village communities. The use of medicinal plants for curing oral health problems could be a major contributor for not utilizing available dental services by these people.

An oral care medicinal plants survey was conducted in different districts of Tamil Nadu during the period of 2000-2004 used by village people and ethnic tribes of Tamil Nadu.^[26] A total of 114 plant species were identified which were used to relieve toothache, used as toothbrush, mouthwash/gargle, and treat gum disorders. All these practices are a major barrier towards utilization of dental care services by these people.

Coverage for oral health

A World Health Survey (WHS) was conducted in India in 2003 and successfully implemented in six states in the country due to the collaborative efforts of the Evidence, Information and Policy Division of the WHO, Geneva; the WHO-WR office, New Delhi; Indian Institute of Population Sciences, Mumbai; and a number of state level research organizations and researchers in the area of population health. The World Health Survey covered six major states of India, namely, Assam, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh and West Bengal, which comprise about 47% of the country's population. The WHS-India covered a representative sample for each state.^[27]

Overall, 28% of respondents reported oral health problems in India. West Bengal (42%) has the highest proportion of respondents with oral health problems. Respondents treated for oral health problems ranges between 21% and 28%, except West Bengal. Prevalence of oral health problems does not systematically vary by residence, insurance status, and by income quintiles.^[27]

Of those who were diagnosed with oral health problems, 51% have been treated. The percent of respondents treated

for oral health problems is highest in Karnataka (72%) and lowest in Assam (26%). Prevalence of oral health problems is higher among females than in males. However, the percentage who received treatment for oral health problems do not vary much by sexes. A higher percentage of urban and higher income quintile respondents received treatment for oral health problems.^[27]

Role of dental insurance in dental care utilization

Unlike most western countries, specific dental insurance plans are not common in India. Indian Dental Association has been striving to bring out a new all-inclusive oral and dental health care insurance scheme. However, it has been unable to achieve anything substantial in this front. We, as oral health care workers, are capable to reach every class and village across the country. Dental health insurance can also bring about dental health care awareness percolating at the gross root levels. It would serve as a good motivation to the people to regularly visit the dentist and this in turn serves as an effective preventive measure. If we have to create awareness and pass on the benefits of longevity of teeth across the society, dental profession should impress on to the policy makers to have beneficial dental insurance schemes for the masses.^[28]

CONCLUSION AND RECOMMENDATIONS

Dental disease is a serious public health problem with universal distribution and affecting all age groups. However, despite this universal distribution, only a few seek dental care. Thus a wide gap is created between the actual dental needs of the population and the demand for dental care which is quite understandable from the cited literature. In India, people encounter various obstacles in utilization of dental services. These barriers can be removed by motivating people and making them aware about the oral health problems that remove anxiety and fear so that they develop positive attitude towards dental treatment. It is suggested that mobile dental clinics, dental camps, and dental outreach programs could be solutions to spread awareness and disseminate treatment. There is a need for reasonably priced, rural oral health centers to make dental care available to rural strata of the population. Unmet treatment needs of the people belonging to lower class should be addressed during conduction of dental programs. School-based screening and motivation programs significantly improve the percentage of children who seek free dental treatment at a dental school.^[29] These programs can also target lifestyles and needs of the school children.

Studies regarding the utilization dental services by north-east Indian population are almost non-existent. Therefore it is the responsibility of the health sector to

gather data on the utilization of dental services by people residing in this part of the country. Information about the population's use of dental services is both necessary and useful as the dental sector experiences the impact of changing forces which influence the number of people who visit the dentist and the type of services they consume. When such information is available, it can help dentists and planners more toward more optimal distributions of manpower and money. In its absence, resources are less likely to be allocated to uses where they produce the greatest amount of additional benefits.

REFERENCES

- Singh A, Purohit B. Targeting poor health: Improving oral health for the poor and the underserved. *Int Aff and Glob Strategy* 2012;3:1-6.
- Sivapathasundharam B. Dental education in India. *Indian J Dent Res* 2007;18:93.
- Tandon S. Challenges to the oral health workforce in India. *J Dent Educ* 2004;68:28-33.
- Cohen LA, Bonito AJ, Eicheldinger C, Manski RJ, Macek MD, Edwards RR, *et al.* Behavioral and socioeconomic correlates of dental problem experience and patterns of health care-seeking. *J Am Dent Assoc* 2011;142:137-49.
- Andersen RM. Revisiting the behavioral model and access to medical care: Does it matter? *J Health Soc Behav* 1995;36:1-10.
- "Formulation of guidelines for meaningful and effective utilization of available manpower at dental colleges for primary prevention of oro-dental problems in the country" (A GOI-WHO Collaborative Programme) [homepage on the Internet]. New Delhi; 2007. Available from: http://screening.iarc.fr/doc/Oral_Health_Oro-Dental_Problem_WHO_Project_Guidelines.pdf. [Last cited 2012 September 30].
- Vashisth S, Gupta N, Bansal M, Rao NC. Utilization of services rendered in dental outreach programs in rural areas of Haryana. *Contemp Clin Dent* 2012;3:164-6.
- Verma H, Aggarwal AK, Rattan V, Mohanty U. Access to public dental care facilities in Chandigarh. *Indian J Dent Res* 2012;23:121.
- Goel P, Singh K, Kaur A, Verma M. Oral healthcare for elderly: Identifying the needs and feasible strategies for service provision. *Indian J Dent Res* 2006;17:11-21.
- Parlani S, Tripathi A, Singh SV. Increasing the prosthodontic awareness of an aging Indian rural population. *Indian J Dent Res* 2011;22:367-70.
- Kulkarni S, Jain M, Mathur A, Mehta P, Gupta R, Goutham B. A relation between dental anxiety, the parental family and regularity of dental attendance in India. *J Oral Health Comm Dent* 2009;3:29-33.
- Cohen LK, Bryant P. Utilization of dental services. In: Richards ND, Cohen LK, editors. *Social sciences and dentistry: A critical bibliography*. Netherlands: A. Sijthoff; 1984. p. 209-240.
- Nuttall NM, Bradnock G, White D, Morris J, Nunn J. Dental attendance in 1998 and implications for the future. *Br Dent J* 2001;190:177-82.
- Malvania EA, Ajithkrishnan CG. Prevalence and socio-demographic correlates of dental anxiety among a group of adult patients attending a dental institution in Vadodara city, Gujarat, India. *Indian J Dent Res* 2011;22:179-80.
- Locker D, Thomson WM, Poulton R. Onset of and patterns of change in dental anxiety in adolescence and early adulthood: A birth cohort study. *Community Dent Health* 2001;18:99-104.
- Devaraj CG, Eswar P. Association between socio-demographic factors and dental service utilization among people visiting a dental college hospital in India: A descriptive cross-sectional study. *Indian J Stomatol* 2011;2:212-5.
- Kakatkar G, Bhat N, Nagarajappa R, Prasad V, Sharda A, Asawa K, *et al.* Barriers to the utilization of dental services in udaipur, India. *J Dent (Tehran)* 2011;8:81-9.
- Garcha V, Shetiya SH, Kakodkar P. Barriers to oral health care amongst different social classes in India. *Community Dent Health* 2010;27:158-62.
- Poudyal S, Rao A, Shenoy R, Priya H. Utilization of dental services in a field practice area in Mangalore, Karnataka. *Indian J Community Med* 2010;35:424-5.
- Thomas S. Barriers to seeking dental care among elderly in a rural South Indian population. *J Indian Acad Geriatrics* 2011;7:60-5.
- Harikiran AG, Pallavi SK, Hariprakash S, Ashutosh, Nagesh KS. Oral health-related KAP among 11- to 12-year-old school children in a government-aided missionary school of Bangalore city. *Indian J Dent Res* 2008;19:236-42.
- Chandra Shekar BR, Reddy C. Oral health status in relation to socioeconomic factors among the municipal employees of Mysore city. *Indian J Dent Res* 2011;22:410-8.
- Somkotra T, Detsomboonrat P. Is there equity in oral healthcare utilization: Experience after achieving Universal coverage. *Community Dent Oral Epidemiol* 2009;37:85-96.
- Khan AA, Jain SK, Shrivastav A. Prevalence of dental caries among the population of Gwalior (India) in relation of different associated factors. *Eur J Dent* 2008;2:81-5.
- Bora A, Devi P, Borthakur SK. Traditional practice for oral hygiene and hazard by common people: A case study in Majuli, Assam. *J Nat Prod Plant Resour* 2012;2:221-5.
- Ganesan S. Traditional oral care medicinal plants survey of Tamil Nadu. *Natural Product Radiance* 2008;7:166-72.
- World Health Survey, 2003. Morbidity prevalence. In: *Health system performance assessment*. New Delhi: WHO-WR Office; 2006 p. 67.
- Toor RS, Jindal R. Dental insurance! Are we ready? *Indian J Dent Res* 2011;22:144-7.
- Toor RS, Jindal R. Dental insurance! Are we ready? *Indian J Dent Res*. 2011;22:144-7.
- Hebbal M, Nagarajappa R. Does school-based dental screening for children increase follow-up treatment at dental school clinics? *J Dent Educ* 2005;69:382-6.

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