

Socio-economic Status, Needs, and Utilization of Dental Services among Rural Adults in a Primary Health Center Area in Southern India

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Abstract:

Background: The oral disease burden in India is showing a steady increase in the recent years. Utilization of dental care being the major factor affecting the oral health status of the population is used as an important tool in oral health policy decision-making and is measured in terms of the number of dental visits per annum.

Materials and Methods: A cross-sectional house to house questionnaire survey was conducted in three rural clusters which were randomly selected from a total of eight clusters served by a primary health center. Simple random sampling was used to select 100 houses from each cluster. Screening was done to examine the existing oral diseases. A total of 385 completed questionnaires were collected from 300 houses.

Results: Of 385 study subjects, 183 have experienced previous dental problems. Major dental problem experienced by the study subjects was toothache (68.85%) and the treatment underwent was extraction (50.27%). Most preferred treatment centers by the study subjects were private dental hospital (68.25%) and reason identified was accessibility which constituted (45.24%) of all the reasons given. Negative attitude toward dental care is one of the important barriers; 50.8% of the non-utilizers felt dental treatment is not much important.

Conclusion: Person's attitude, lack of awareness, and affordability remain the barriers for utilization of dental services. Effective methods have to be exercised to breach such barriers.

Key Words: Needs, primary health center, socioeconomic status, utilization

Introduction

Oral health is an integral part of general health. With the life expectancy increasing to 66.8 years¹ among the Indian

population, the role oral health plays in improving the quality of a person's life cannot be overstated. Over the last five decades, there has been a steady increase both in the prevalence and in the severity of dental caries in India. Crippling nature of dental disease left a large section of adult population toothless. It is evident from the literature that 30% of children suffer from mal-aligned teeth and jaws diminishing the potential of dentofacial apparatus to function properly.² Oral cancer constitutes 35-40% of total body cancers which could be attributed to the wide usage of tobacco, betel nuts, quid, pan masala etc.³

The health care delivery system in India embodies a public sector, a private sector, and an unofficial nexus of health care providers operating within an unchecked environment, with no supervision on the services provided with respect to the provider, way of provision of services, costs involved, and there is no standardization in measuring the quality of care. This impromptu health care system has created a wide disparity in access to dental care, with the frivolous and lackadaisical public health system rubbing salt into the wound. For most Indians, a visit to a dental office is considered an extraordinary and an unexpected event.

According to the concept given by Bhore committee in 1946, a primary health center (PHC) is supposed to be a basic health unit that provides curative and preventive health care services in an integrated manner to the rural population emphasizing on the preventive and promotive genres of health care, situated as close to the people as possible. The National Health Plan (1983) recommended reconstitution of PHCs at a ratio of one PHC for every 30,000 rural population in the plains. This ratio is 1:20,000 in hilly, tribal, and backward areas to render comprehensive coverage.⁴ Though the national oral health policy had recommended dentists to be recruited in all PHCs, it is unfortunate that this policy has not been implemented till date and there are no dentists appointed in PHCs in some states. There is no dentist at the PHC of the current study area.

There are nine clusters under the PHC with a population coverage of 41,650.⁵ The main objective of any oral health care system was to maintain and improve oral health care, which depends on the willingness of the individuals to seek

care. In many developing countries, oral health care utilization is limited and teeth are often left untreated. Utilization is measured as the number of visits per year or the number of people with at least one visit during the previous year, and utilization studies serve as an important tool in designing and modifying oral health policies.⁶

With this background a study is planned to know the dental services utilization among the rural population under the PHC, with the following objectives:

1. To know the normative needs among the rural population.
2. To know the factors determining utilization of dental services.

Materials and Methods

The study was carried out in clusters under the primary health center situated 30 km from Guntur, Andhra Pradesh, India.

Study population and sampling procedure

A cross-sectional house to house survey was conducted in the field practice area of a PHC in southern India. Three clusters were randomly selected for data collection from a total of nine clusters that are covered under the PHC. The list of houses was obtained from the respective rural administrative authorities. From each cluster, 100 houses were selected using systematic random sampling method. Questionnaires were distributed to adults residing in the selected houses to assess their dental care utilization, followed by screening for existing oral diseases. A total of 385 completed questionnaires was collected from 300 houses.

Questionnaire

A structured questionnaire was designed with seven questions in the local language. Demographic profile includes details regarding name, age, sex, education, occupation, income (Kuppuswamy's socio-economic status [SES] Scale-updating for 2007).⁷ Each respondent was asked a series of questions on dental health attitudes, last dental visit, treatments underwent and factors influencing utilization. Data were analyzed using IBM SPSS version 19 software. Descriptive statistics were used to summarize the results. Responses to the questionnaire were analyzed using Chi-square test to assess the association between demographic characteristics. A significant relationship

was assumed to exist between the groups if the *P* value was found to be <0.05.

Ethical clearance

Ethical clearance was obtained from the ethical committee of Sibar Institute of Dental Sciences and prior permission was taken from local authorities. Informed consent was obtained from all the participants in the study.

Inclusion criteria

Subjects who were available on the day of examination and permanent residents of the study area.

Exclusion criteria

Subjects who were mentally challenged were excluded.

Results

Of the 385 study subjects, 190 (49.4%) were male and 195 (50.6%) were female with majority of them belonging to the age group of 35-44 years (22.08%). Principal number (46.23%) of the study subjects belonged to upper lower (UL) SES and very few subjects (1.31%) belonged to upper SES. 4.41% study subjects belonged to lower SES, 40% of study subjects belonged to lower middle (LM) SES, and 8.05% study subjects belonged to upper middle (UM) SES.

Table 1 shows the distribution of study subjects according to the "felt need." Major dental problem experienced by the study subjects was toothache which constituted around 68.85%, of which 51.37% study subjects belonged to LM socio economic group. 12.02% of study subjects experienced more than one dental problem. Difference in proportions is statistically significant as analyzed by Chi-square test (*P* = 0.00).

Table 2 shows the distribution of study subjects according to the treatments underwent. Majority of study subjects have undergone an extraction which constituted about 50.27% of which 37.17% study subjects belonged to LM socio economic group. The percentage of subjects who underwent restorations and prosthetic treatments constitute 5.46% and 3.28%, respectively. Influenced by various factors 31.15% of the subjects with one-third of them belonging to lower SES, availed no treatment despite having dental problems. Difference in

Table 1: Distribution of study subjects according to felt need.

SES	Tooth pain (%)	Mobile tooth (%)	Fractured tooth (%)	Bleeding gums (%)	Swelling (%)	Missing tooth (%)	Fractured tooth (%)	Decayed tooth (%)	More than one problem (%)	Other problems (%)	Total (%)
Lower	6 (54.55)	2 (18.18)	0	0	0	1 (9.09)	0	0	2 (18.18)	0	11 (100)
UL	15 (60)	0	1 (3.57)	1 (3.57)	1 (3.57)	0	2 (7.14)	1 (3.57)	6 (21.43)	1 (3.57)	28 (100)
LM	94 (75.8)	8 (6.45)	0	4 (3.22)	0	0	2 (1.61)	0	12 (9.68)	4 (3.22)	124 (100)
UM	11 (64.7)	1 (5.88)	0	0	0	1 (5.88)	1 (5.88)	0	2 (11.76)	1 (5.88)	17 (100)
Upper	0	0	0	0	0	0	0	1 (33.3)	0	2 (66.7)	3 (100)
Total	126 (68.85)	11 (6.01)	1 (0.55)	5 (2.73)	1 (0.55)	2 (1.09)	5 (2.73)	2 (1.09)	22 (12.02)	8 (4.37)	183 (100)

SES: Socio economic status, UL: Upper lower, LM: Lower middle, UM: Upper middle

proportions is statistically significant as analyzed by Chi-square test ($P = 0.00$).

Table 3 shows the distribution of study subjects according to the preferred treatment centers. Most of the study subjects (68.25%) preferred private dental clinics over government dental hospital (75.08%) in pursuing their dental needs. Difference in proportions is statistically significant as analyzed by Chi-square test ($P = 0.00$).

Table 4 shows the distribution of study subjects according to factors influencing for not utilization of dental services. Impenitent attitude of the patient stands out as prime reason (50.88%) for not visiting the dentist and is followed by the reasons like “lack of awareness” (14.03%) and notions like “dental treatments are expensive” (14.03%). Upper SES group reported reason for not visiting a dentist was “lack of time.” The difference observed was statistically significant ($P = 0.00$).

Table 5 shows the distribution of study subjects according to the reason for taking treatment in a particular center. Much of the study subjects (45.24%) stated proximity of dental

clinics as influencing factor in choosing a center to avail dental treatments and only 13.49% of the subjects underwent treatment in a particular center as they provide better quality treatment. Difference in proportions is statistically significant as analyzed by Chi-square test ($P = 0.00$).

Table 6 shows the distribution of normative needs according to gender. Majority (49.78%) study subjects were observed with the presence of multiple problems, 27.1% were observed with calculus and 8.05% were observed with decayed teeth. Among the study subjects, 9.68% of the UM socio economic group presented with decayed teeth. 3.9% of the LM socio economic group had gum diseases. 29.77% of the UL socioeconomic group showed calculus. 5.9% of the lower socio economic group had missing teeth. However, the difference observed was statistically not significant ($P = 0.407$).

Discussion

Utilization is not just the willingness of people to seek care, but the actual attendance at the site of delivery of health care services to receive care. The present study was conducted with a sample of 385 subjects, who were the permanent residents

Table 2: Distribution of study subjects according to the type of treatments received.

SES	Extraction (%)	Restoration (%)	Scaling (%)	Prosthesis (%)	Ortho treatment (%)	Surgery (%)	Not taken any treatment (%)	Multiple treatment (%)	Other treatments (%)	Total (%)
Lower	5 (45.45)	0	1 (9.09)	0	0	0	3 (27.27)	2 (18.18)	0	11 (100)
UL	13 (46.43)	5 (17.86)	1 (3.57)	1 (3.57)	0	1 (3.57)	6 (21.43)	0	1 (3.57)	28 (100)
LM	68 (54.84)	3 (2.42)	1 (0.81)	2 (1.61)	1 (0.81)	0	44 (35.48)	2 (1.61)	3 (2.42)	124 (100)
UM	6 (35.29)	2 (11.76)	1 (5.88)	2 (11.76)	0	0	3 (17.65)	2 (11.76)	1 (5.88)	17 (100)
Upper	0	0	1 (33.33)	1 (33.33)	0	0	1 (33.33)	0	0	3 (100)
Total	92 (50.27)	10 (5.46)	5 (2.73)	6 (3.28)	1 (0.55)	1 (0.55)	57 (31.15)	6 (3.28)	5 (2.73)	183 (100)

SES: Socio economic status, UL: Upper lower, LM: Lower middle, UM: Upper middle

Table 3: Distribution of study subjects according to preferred treatment centers.

SES	Government dental hospital (%)	Private dental clinic (%)	Medical shop (%)	Dental college hospital (%)	House hold remedies (%)	Folk medicine (%)	Total (%)
Lower	3 (37.5)	3 (37.5)	1 (12.5)	0	0	1 (12.5)	8 (100)
UL	2 (9.09)	18 (81.82)	0	2 (9.09)	0	0	22 (100)
LM	13 (16.45)	53 (67.09)	7 (8.86)	2 (2.53)	1 (1.26)	3 (3.8)	79 (100)
UM	1 (6.67)	10 (66.7)	1 (6.67)	2 (15.33)	1 (6.67)	0	15 (100)
Upper	0	2 (100)	0	0	0	0	2 (100)
Total	19 (15.08)	86 (68.25)	9 (7.14)	6 (4.76)	2 (1.58)	4 (3.17)	126 (100)

SES: Socio economic status, UL: Upper lower, LM: Lower middle, UM: Upper middle

Table 4: Distribution of study subjects according to factors influencing for not utilization of dental services even though they have perceived the problem.

SES	Fear (%)	No time (%)	Inaccessibility (%)	Expensive (%)	Not aware (%)	Don't think important (%)	Total (%)
Lower	0	0	0	0	1 (33.33)	2 (66.67)	3 (100)
UL	0	1 (16.66)	1 (16.66)	0	1 (16.66)	3 (50)	6 (100)
LM	2 (4.54)	7 (15.92)	0	8 (18.18)	6 (13.63)	21 (47.73)	44 (100)
UM	0	0	0	0	0	3 (100)	3 (100)
Upper	0	1 (100)	0	0	0	0	1 (100)
Total	2 (3.5)	9 (15.79)	1 (1.75)	8 (14.03)	8 (14.03)	29 (50.88)	57 (100)

SES: Socio economic status, UL: Upper lower, LM: Lower middle, UM: Upper middle

Table 5: Distribution of study subjects according to reason for taking treatment in particular center.

SES	Availability (%)	Affordability (%)	Better quality (%)	Others suggestion (%)	Total (%)
Lower	1 (12.5)	5 (62.5)	0	2 (25)	8 (100)
UL	12 (54.54)	0	3 (13.64)	7 (31.8)	22 (100)
LM	36 (45.57)	14 (17.72)	11 (13.92)	18 (22.78)	79 (100)
UM	8 (53.33)	3 (20)	1 (6.67)	3 (20)	15 (100)
Upper	0	0	2 (100)	0	2 (100)
Total	57 (45.24)	22 (17.46)	17 (13.49)	30 (23.8)	126 (100)

SES: Socio economic status, UL: Upper lower, LM: Lower middle, UM: Upper middle

Table 6: Distribution of normative needs according to SES.

SES	Decayed teeth (%)	Gum diseases (%)	Calculus (%)	Irregular teeth (%)	Missing teeth (%)	Fractured teeth (%)	Ulcers (%)	Others (%)	Multiple problems (%)	NAD (%)	Total (%)
Lower	0	0	2 (11.76)	0	1 (5.9)	0	0	1 (5.9)	13 (76.46)	0	17 (100)
UL	15 (8.43)	4 (2.45)	53 (29.77)	1 (0.56)	4 (2.45)	5 (2.81)	2 (1.12)	2 (1.12)	80 (44.94)	12 (6.74)	178 (100)
LM	12 (7.8)	6 (3.9)	38 (24.67)	0	4 (2.6)	0	0	1 (0.65)	86 (55.84)	7 (4.54)	154 (100)
UM	3 (9.68)	1 (3.22)	7 (22.58)	3 (9.68)	1 (3.22)	1 (3.22)	0	0	13 (41.93)	2 (6.45)	31 (100)
Upper	1 (20)	0	4 (80)	0	0	0	0	0	0	0	5 (100)
Total	31 (8.05)	11 (2.86)	104 (27.01)	4 (1.03)	10 (2.6)	6 (1.56)	2 (0.52)	4 (1.03)	192 (49.87)	21 (5.45)	385 (100)

SES: Socio economic status, UL: Upper lower, LM: Lower middle, UM: Upper middle

of a PHC area. The sample comprised of 190 males (49.35%) and 195 females (50.65%). In the present study, maximum (22.27%) number of subjects belonged to the 35-44 years age group and a minimum of 5.44% subjects belonged to the age group of 0-14 years.

In our study, it was observed that toothache was the ubiquitous problem, which being an emergency condition should logically have forced them to visit a dentist. But nearly 30% of people having toothache had not visited a dentist, whereas a study conducted by Poudyal *et al.* (2010)⁸ showed that 50% of study Subjects undergone treatment.

It was identified from the current study that not giving much importance to dental care was the major factor negatively influencing the utilization of dental care accounting for 50.88% of the total influencing factors. However, a study done by Poudyal *et al.* (2010),⁸ where a majority of people opined that they had no dental problems, recognized that the mismatch between normative need and perceived need was the major factor affecting utilization of dental care.

In our study, it was observed that fear was not a major reason for non-utilization of dental care, constituting for a mere 3.5% of all the reasons given for non-utilization. Nonetheless, these results are not in accordance with a study done by Kakatkar *et al.* (2011)⁹ and Tong and Tong (2005)¹⁰ where fear was recognized as the major reason for not utilizing the dental care.

This study did not show significant difference between the dental visit history among males and females; and similar results were observed in a study done by Poudyal *et al.* (2010).⁸ Dissimilar results were observed in a study done by Liddell and Locker (1997),¹¹ Kakatkar *et al.* (2011).⁹

Most preferred treatment centers by the study subjects were private dental hospitals (24.7%), and the reason identified was accessibility which constituted (15.1%) of all the reasons given. 30.1% of the subjects were satisfied with the treatments received.

Conclusion

“Utilization of oral healthcare services” has long been used as an indicator of oral health related behavior. The iterated reason for not visiting the dentist was “did not think it was important,” which shows the laxity of Indian population towards oral health. The only health service available for the rural population is PHC, but there is no dentist in it to provide dental care. The need of the hour is to improve the oral health knowledge and awareness among people. Motivating them towards availing oral health care is a prime requisite to provide them a socially and economically productive life. Recruitment of dentists in primary health centers and providing the necessary infrastructure is the only possible way to abolish the malady of “apathy toward procuring oral health care.” Policy reforms should be initiated to purge the trammels in achieving “an increase in utilization of dental care.”

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