

# Self-reported and clinically diagnosed dental needs among institutionalized adults in Vijayawada: A cross-sectional study

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## Abstract

**Background:** Frail and functionally dependent elderly people, living in institutions, have difficulties in accessing dental care. Hence, the present study aims to determine the relationship between subjective need and the equivalent clinical findings in an attempt to understand the factors that contribute to individual's perception of the need for dental care among institutionalized adults in Vijayawada. **Materials and Methods:** A cross-sectional study is conducted in all old age homes in Vijayawada. A total of 182 subjects were interviewed with a questionnaire consisting of demographic details, dental behavior (last visit, reason for the last visit), and self-rating of oral health and impact of oral problems, followed by the clinical examination for oral mucosal condition, dentition status and treatment needs, prosthetic status and treatment needs, and periodontal status by using World Health Organization proforma. **Results:** Results showed that normative needs of subjects are significantly more than the self-perceived needs. Response of subjects regarding their present condition of mouth and teeth is 65.4% of subjects reported good and 0.5% reported poor, with respective to perceived oral symptoms 61.9% of subjects' complaints of hypersensitivity and 23.1% of subjects were having toothache and 80.5% subjects are having difficulty in eating. The overall prevalence of complete Edentulous and require complete denture was 12.1%, and 60.4% required partial denture. **Conclusion:** About half of the participants confirmed need for problem-oriented dental care. The main reason for the problems faced by the institutionalized people is due to lack of teeth which could be prevented by appropriate care.

**Key words:** *Elderly, institutionalized, normative need, oral health, perceived need for dental care*

## INTRODUCTION

Epidemiological research indicates oral diseases are widespread throughout the world and evidence exists to show that their extent and severity increases with age.<sup>[1]</sup> Perceptions of need for dental care play a key role as to whether people in general will seek dental care and that lack of need perceptions constitutes an important barrier for utilization of health care services. Reportedly, the main benefits of dental treatment relate

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to improved psychological and social well-being. Thus, oral symptoms and functional and psychological impacts from oral conditions seem to be of great significance in the assessments of individuals' perceived need for dental care.<sup>[2]</sup> Frail and functionally dependent elderly people, living in long-term care facilities or at home, have special difficulties in accessing dental care because the problems of attending a dental clinic often appear insurmountable. The accessibility of the dental office is important too, especially for functionally disabled older patients. To help overcome these barriers, onsite dental equipment may facilitate access in larger nursing homes, while mobile or portable dental equipment may be the appropriate method of choice for smaller care facilities and for older people living at home. One important component in the use of services is self-perceived need for treatment. In fact, several studies have shown that self-perception is influenced by service use, such that it is greater among those who use dental services.<sup>[3,4]</sup> The present aim of the study was to determine the relationship between subjective need for dental care and the equivalent clinical findings in an attempt to understand the factors that contribute to individuals perception of the need for dental care.

### MATERIALS AND METHODS

A cross-sectional study was conducted in three old age homes in Vijayawada city. All the subjects (*n* = 182) present in the three old age homes were interviewed with pretested questionnaire, followed by clinical examination. All subjects who were residing in homes and who were willing to participate were included in the study. Medically comprised patients and those who were not willing to participate were excluded from the study. Ethical permission was obtained from the ethical committee, Dr. Sudha and Nageswararao Sidhartha institute of dental sciences and prior permission was obtained from the old age homes authorities.

Examinations were conducted under natural day light using plain mouth mirror and community periodontal index (CPI) probe for recording oral mucosal condition, dentition status, prosthetic status, and periodontal status using modified World Health Organization (WHO) proforma. The questionnaire consists of dental behavior (last visit, reason for the last visit) and self-rating of oral health their teeth and mouth. The answers to the questions were structured on a five-point Likert-scale (excellent, very good, good, poor, and very poor). Functional impacts included questions regarding the impact of oral problems such as difficulty in speaking, eating, smiling, sleeping, and relaxing.<sup>[5-7]</sup> During the clinical

examination by using WHO proforma, the oral mucosal condition, prosthetic status were also noted.

All examinations were conducted by single examiner. Examiner calibration was performed in the department of public health dentistry under the guidance of head of department. Around 15 patients were examined per day. The entire study was conducted over a period of 15 days.

### RESULTS

Table 1 illustrates the distribution of study subjects based on sociodemographic variables (age, gender, occupation, source of income, and type of institution). The mean age of study subjects is 68.7. A total of 93.4% of subjects are unemployed and 95.5% of the study population is dependent on their children for daily expenses, 45.05% are staying in free institutions and 54.95% are staying in a paid institution. Table 2 shows distribution of study subjects based on previous dental visit and self-perceived needs. In regard to their present condition of mouth and teeth, 65.4% of subjects perceived that it is in a good state, while only 0.5% perceived it as poor. (*P* value 0.03) In respect to the perceived oral symptoms, 61.9% of subjects complained of hypersensitivity, 23.1% of subjects were having toothache, and 80.5% subjects were having difficulty in eating. The decayed missing

**Table 1: Distribution of study subjects based on sociodemographic variables**

Factor	Male	Female	Total	Percentage
Age groups (years)				
60-64	7	9	16	8.8
65-69	25	27	52	28.5
70-74	28	29	57	31.3
75-79	26	17	43	23.6
80-84	2	3	5	2.7
85-89	1	5	6	3.4
90-94	3	0	3	1.6
Total	92	90	182	100
Occupation				
Unemployed	88	82	170	93.4
Unskilled	4	8	12	6.59
Total	92	90	182	100
Source of income				
Dependent	90	83	173	95.05
Independent	2	7	9	4.95
Total	92	90	182	100
Type of institution				
Free	42	40	82	45.05
Paid	50	50	100	54.95
Total	92	90	182	100

filled teeth (DMFT) scores showed the mean number of sound teeth was 9.22, decayed teeth was 1.89, missing teeth due to caries was 6.48, and missing due to other reasons was 7.13. The overall mean of decayed, missing, and filled is 8.37 [Table 3]. Among study subjects, 86.2% are not having any

prosthesis, 9.9% had a partial denture, and 3.8% had a full denture (*P* value 0.02). A total of 12.1% of subjects required full prosthesis, 60.4% required multiple denture, and 9.9% required a combination of prosthesis [Table 4].

**Table 2: Distribution of study subjects based on previous dental visit and self-perceived needs**

Self-perceived needs	Previous dental visit		Total (%)	Pearson's chi-square
	Yes (%)	No (%)		
Present condition of mouth and teeth				
Very good	19 (20.2)	7 (8.0)	26 (14.3)	<i>P</i> =0.03*
Good	61 (64.9)	58 (65.9)	119 (65.4)	
Poor	14 (14.9)	22 (25.0)	36 (19.8)	
Very poor	0 (0)	1 (1.1)	1 (.5)	
Total	94 (100)	88 (100)	182 (100)	
Perceived oral symptoms				
Tooth ache	17 (20.7)	20 (25.6)	37 (23.1)	<i>P</i> =0.02*
Hypersensitivity	55 (67.1)	44 (56.4)	99 (61.9)	
Loss of taste	10 (12.2)	14 (17.9)	24 (15.0)	
Total	82(100.0)	78 (100.0)	160 (100.0)	
Difficulty in performing daily activities				
Eating	50 (72.5)	57 (89.1)	107 (80.5)	<i>P</i> =0.001
Speaking	6 (8.7)	1 (1.6)	7 (5.3)	
Sleeping and relaxing	12 (17.4)	6 (9.4)	18 (13.5)	
Total	69(100.0)	64 (100.0)	133 (100.0)	

\* *P* ≤ 0.05 means significant

**Table 3: Distribution of study subjects based on previous dental visit and dentition status**

Dentition status	Last dental visit	N	Mean	SD	T test
No. of teeth present	Yes	94	11.05	5.658	<i>P</i> <0.05
	No	88	10.49	5.954	
Sound teeth	Yes	94	9.22	4.748	
	No	88	8.60	4.965	
Decayed teeth	Yes	94	1.83	2.193	
	No	88	1.89	2.341	
Missing due to caries	Yes	94	6.48	3.033	
	No	88	6.50	3.363	
Missing due to other reasons	Yes	94	7.13	4.268	
	No	88	6.40	4.050	
Filled teeth	Yes	94	0.00	0.000(a)	
	No	88	0.00	0.000(a)	
Root caries	Yes	94	1.83	2.193	
	No	88	1.89	2.341	

\**P* ≤ 0.05 means significant. SD=Standard deviation

## DISCUSSION

The results from the present study indicate that 54.4% of the elderly people perceived a need for dental treatment. Present study shows a greater percentage of need when compared with studies conducted by Ekanayake and Perera (46%) and Slaughter and

**Table 4: Distribution of study subjects based on previous dental visit and prosthetic status and prosthetic needs**

Clinically diagnosed prosthetic status and prosthetic needs	Previous dental visit		Total (%)	Pearson chi-square
	Yes (%)	No (%)		
Prosthetic status in upper arch				
No prosthesis	78 (83.0)	79 (89.8)	157 (86.3)	<i>P</i> =0.03*
Partial denture	12 (12.8)	6 (6.8)	18 (9.9)	
Full removable denture	4 (4.3)	3 (3.4)	7 (3.8)	
Total	94 (100.0)	88(100.0)	182 (100.0)	
Prosthetic status in lower arch				
No prosthesis	78 (83.0)	79 (89.8)	157 (86.3)	<i>P</i> =0.02*
Partial denture	12 (12.8)	6 (6.8)	18 (9.9)	
Full removable denture	4 (4.3)	3 (3.4)	7 (3.8)	
Total	94(100.0)	88(100.0)	182 (100.0)	
Prosthetic needs in upper arch				
No prosthesis need	16 (17.0)	9 (10.2)	25 (13.7)	<i>P</i> =0.001
Need for 1 unit	5 (5.3)	2 (2.3)	7 (3.8)	
Need for multi unit	54 (57.4)	56 (63.6)	110 (60.4)	
Need for a combination	10 (10.6)	8 (9.1)	18 (9.9)	
Need for full prosthesis	9 (9.6)	13 (14.8)	22 (12.1)	
Total	94(100.0)	88(100.0)	182 (100.0)	
Prosthetic needs in lower arch				
No prosthesis need	16 (17.0)	9 (10.2)	25 (13.7)	<i>P</i> =0.001
Need for 1 unit	65 (69.1)	62 (70.5)	127 (69.8)	
Need for a combination	4 (4.3)	4 (4.5)	8 (4.4)	
Need for full prosthesis	9 (9.6)	13 (14.8)	22 (12.1)	
Total	94(100.0)	88(100.0)	182 (100.0)	

\* *P* ≤ 0.05 means significant

Taylor (43%).<sup>[8,9]</sup> The reason in this difference could be some factors such as demographics, predisposition, and oral health condition. Chisick *et al.*, conducted a study to know the factors influencing perceived need of dental care active in U.S. military personnel. The study showed that self-perception was greater among those who had not used dental services. In another study done by Gilbert *et al.*,<sup>[10,11]</sup> to understand the perceived need for dental care in dentate older adults, he concluded that perception for dental needs was greater among those who had used dental services. Individuals usually give greater importance to the symptoms, functional and psychological impact of oral diseases than to the visible signs of the disease.<sup>[12]</sup> This was also evident in the present study, since perceived need for dental treatment was associated with worse perception of oral health condition and oral appearance, and to worse perception of chewing capabilities. Self-perception was also greater among individuals who had felt pain. A positive association between pain and self-perceived need for treatment is found in the present study and the results of this study is in accordance with the study conducted by Ekanayake and Perera in Srilanka.<sup>[8]</sup>

Medically compromised patients were excluded from the study due to the sole reason that the existing debilitating disease may influence the sensory and the motor perception and function of the particular individual which may have an impact on the outcome of the study.

Out of whole sample, 12.1% of subjects require full prosthesis, 60.4% required partial denture, 9.9% require a combination of prosthesis, and the edentate elderly people presented lower frequency of self-perceived need for dental treatment, possibly reflecting a certain accommodation with their edentate situation. Edentulism is prevalent among older people all over the world and is highly associated with socioeconomic status. Epidemiological studies show that persons of low social class or income and individuals with little or no education are more likely to be edentulous than persons of high social class and high levels of income and education.<sup>[13-16]</sup> Results from the present study showed that there is a big discrepancy between self-ratings of satisfaction with oral health and clinically diagnosed treatment needs. These results are in accordance with the previous studies conducted by Gilbert *et al.*, Jokovic and Locker, Heft *et al.*, Kaplan and Baron-Epel, Ekanayake and Perera, and underlines the limits of only clinical estimation of need. This is mainly due to the fact that clinical measures determine the extent of the disease and not its severity and, therefore, are not always associated with symptoms

that the patient may or may not report. Subjective evaluation of oral health and oral disadvantage has a greater association with the reports of dental need compared with the presence of active disease. This underlines the perception that disease is something that individuals feel and experience and not just a pathological procedure.<sup>[1,15,16]</sup>

Higher prevalence of both untreated decay and unmet treatment needs was associated with lower utilization of dental care for dentate subjects. Paying for dental care, transportation difficulties, and poor health were the most frequently identified barriers that limited access to oral health care.<sup>[2,13]</sup>

## CONCLUSION

This study provided further understanding of the discrepancy between perceived need for dental care and clinically diagnosed dental problems. Self-perceived need for dental treatment suggests that health education should be stimulated. In this way, it would be possible to improve individuals' capacity to carry out oral self-examination and to identify nonpainful signs and symptoms of oral diseases at an earlier stage, and to correlate these with the need for dental treatment. The results give insight into the role of normative need and significance of certain signs and symptoms on the patient's perception of dental need. These people require education, motivation regarding prevailing dental problems, and program for treating the problems faced by them.

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