

# A study on prosthodontic awareness and needs of an aging Indian rural population

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More than 80% of India lives in villages, who in contrast to their urban counterparts, are mostly illiterate and ignorant. The educated few migrate from rural to urban areas for money and better opportunities. For similar reasons, dentists prefer to settle in the urban scene. The obvious sufferers of this situation are the rural aged. The purpose of this study therefore, was to identify the prosthodontic need, the degree of its fulfillment, awareness of the need and reasons for unfulfilled need in this Indian rural aging subpopulation.

The study area consisted of a group of six villages collectively known as 'Sarora' situated in district Lucknow, Uttar Pradesh, India. The study population was divided on the basis of age, sex, education and economic status in order to facilitate comparisons. Interviews and clinical examination were the tools of the study. The collected data was then subjected to statistical analysis. The edentulous study population comprised 10.1% of the total study population of which 73.1% had never visited a dentist. The dentulous and the partially dentulous populations comprised 11% and 96.5% of the study population respectively and the latter was found to have unfulfilled prosthodontic need. It was concluded that outreach programs are essential to improve the condition of the rural aging population.

**Key words:** Mobile camps, outreach programs, prosthodontic demand, prosthodontic need-perceived, true

India is a developing country with a very large population, >80% of which resides in the villages. Rural areas present a bleak picture in contrast to the urban areas as the residents are mostly illiterate, ignorance and myths prevail widely,<sup>[1]</sup> the standard of living and economic status are low and no importance is given to women's education and liberation. When we consider the aging population, disease and lack of mobility compound the existing problems. Dental treatment is obviously given a go-by till tooth loss occurs.<sup>[2]</sup>

Dentists too are responsible for this state as for the same population ratio, there are ten times more dentists in cities than in villages in India.<sup>[3]</sup> Literacy and development programs are directed towards the youth, who do not find ample opportunities in the villages and hence, migrate to urban areas leaving the old to their own woes.<sup>[4]</sup>

Prosthodontic awareness and needs of a rural aging population were therefore examined to facilitate the understanding of the cause and the extent of this problem as a prelude to its attempted solution.

## MATERIALS AND METHODS

The study was conducted in a group of six villages in Lucknow district, U.P, India, collectively known as 'Sarora'. The total population of Sarora was 5800 (Census 2001) with land cultivation or agricultural labor being the chief occupations of the villagers (79%). Illiteracy was 65% and a majority of the residents came below the poverty line.

445 people of Sarora were aged 50 years or above, 227 of whom were interviewed and examined clinically. The remaining either refused to be interviewed, were away at the time of interview or were too ill to be interviewed. Close-ended multiple choice questions were presented to the subject to facilitate data processing and avoid ambiguity. Name, age, sex, educational status and monthly income of the subjects were recorded and the subjects divided into groups on the basis of:

Age: Group A<sub>1</sub>: 50-54 years, Group A<sub>2</sub>: 55-64 years, Group A<sub>3</sub>: ≥ 65 years.

Sex: Group M: Males, Group F: Females!

Educational status: Group E<sub>0</sub>: Illiterate, Group E<sub>1</sub>: Educated to or below primary level, Group E<sub>2</sub>: Educated above primary level.

Monthly income: Group I<sub>0</sub>: No source of income, Group I<sub>1</sub>: Income < Rs 1000 / month, Group I<sub>2</sub>: Income ≥ Rs 1000 / month.

The study sought to determine whether the subject felt handicapped due to the loss of teeth, whether the prosthodontic need had been fulfilled. If the need had not been fulfilled, the reasons for nonfulfillment were determined. Subject's visit, if any, to the dentist were noted, with the purpose of the visit. The data was then subjected to standard statistical tests such as mean, standard deviation. 't' test, Chi-square test and 'P' values.

## RESULTS

On comparing the level of edentulism in different groups among the study population, the edentulous subjects accounted for 10.1% of the study population [Table 1], with 11% of the study population having no prosthodontic need. Males were more edentulous than females, though the need for partial dentures in females was slightly higher. The number of fully dentulous subjects was found to increase with decreasing age, increasing monthly income and increasing educational status. Chandra and Chandra<sup>[1]</sup> stated that tooth loss was more prevalent in low income and uneducated groups. Palmqvist<sup>[5]</sup> found a greater need for treatment among elderly men as compared to women.

On studying prosthodontic needs, the study population showed greater need for upper and lower complete dentures [Table 2] than for single complete dentures. Also, the need for maxillary (including single complete and partial) dentures was more than the need for mandibular dentures. The Bureau of Economic Research and Statistics<sup>[6]</sup> reported that requirements of upper and lower complete dentures were much higher than that for single complete dentures. Brown, Meskin *et al.*<sup>[7]</sup> reported a need for maxillary complete dentures in 10% compared to the requirement of upper and lower complete dentures in 15% of the 55-64 age group.

Considering the prosthodontic need fulfillment in the study population, 96.5% of the population had unfulfilled prosthodontic needs [Table 3]. The unfulfilled need was higher in females, older age subjects and lower education and income groups. Shah, Parkash and Sunderam<sup>[8]</sup> stated that the level of fulfillment of prosthodontic need for partial dentures was < 13% in the aging population. !

On comparing reasons for nonfulfillment of prosthodontic need, the most important reason given was disinterest of the subject in need [Table 4]. The justifications for this disinterest varied from the opinion that getting older was the sole reason of tooth loss, to

a generalized disillusionment with their environment / family. Financial constraints were the second most important reason. Also, financial constraints were given more importance by older and incomeless subjects while the lack of acknowledgment of the need was given less frequently by more educated subjects as a reason for nonfulfillment of prosthodontic need. ! Peter<sup>[9]</sup> stated that in underprivileged people, there is a feeling that the ultimate loss of teeth is one of the natural vicissitudes of life.

In examining whether tooth loss was considered disadvantageous by the study population and if so, examining what the disadvantage was, 44% of the study population did not feel disadvantaged despite tooth loss. Brodeur, Demers *et al.*<sup>[10]</sup> had earlier reported a 38.2% difference in true need and felt need in an elderly population. Older subjects felt more disadvantaged by tooth loss than younger ones with 77.7% of the study population finding the difficulty in mastication to be the main disadvantage while only 22.3% considered poor appearance as a major handicap. Younger subjects gave more importance to poor appearance as compared to older subjects. !

On evaluating reasons of visiting a dentist in the study population, 73.1% of the study population had never visited a dentist while 2.2% had visited one to have dentures made [Table 5]. The number of subjects never having visited a dentist, was higher in the lower educational status and / or older subjects as well as in the female population. !

**Table 1: Comparison of dental status in different age groups**

	A <sub>1</sub>		A <sub>2</sub>		A <sub>3</sub>		Total	
	No.	%	No.	%	No.	%	No.	%
Edentulous	0	0	6	8.3	17	23.3	23	10.1
Partially dentulous	64	78.1	61	84.7	54	74.0	179	78.9
Fully dentulous	18	21.9	5	7.0	2	2.7	25	11.0
Total	82	100	72	100	73	100	227	100

$\chi^2 = 36.08; P < 0.001$

**Table 2: Prosthodontic need of the study population**

	Number	Percentage (in 227 subjects)
Complete dentures	23	10.1
Maxillary complete dentures	12	5.3
Mandibular complete dentures	3	1.3
Maxillary partial dentures	136	59.9
Mandibular partial denture	144	63.4

**Table 3: Prosthodontic need fulfillment in the study population**

	Number	Percentage
Need fulfilled	7	3.5
Need unfulfilled	195	96.5
Total	202	100

$\chi^2 = 19.99, P < 0.001$

**Table 4: Comparison of reasons for nonfulfillment of prosthodontic need in male and female subjects**

Reason	Male		Female		Total	
	No.	%	No.	%	No.	%
No need was felt or patient was not aware of possibility of rehabilitation	20	19.6	20	21.5	40	20.5
Lack of nearby facility or conveyance	8	7.8	7	7.5	15	7.7
Subject was aware of need but disinterested for any reason	52	51.0	37	39.8	89	45.6
Subject was very sick	2	2.0	0	0	2	1.0
Economic constraints	20	19.6	29	31.2	49	25.2
Total	102	100	93	100	195	100

$\chi^2 = 5.85, P = 0.21$

**Table 5: Comparison of reasons to visit a dentist in male and female subjects**

	Male		Female		Total	
	No.	%	No.	%	No.	%
Never visited a dentist	83	67.5	83	79.8	166	73.1
Visited only in severe pain	35	28.5	21	20.2	56	24.7
Visited also to have prosthesis made	5	4.0	0	0	5	2.2
Total	123	100	104	100	227	100

$\chi^2 = 7.16, P = 0.03$

## DISCUSSION

The study showed the lack of prosthodontic awareness and the large gap between fulfilled and unfulfilled need in the rural aged, even more so in females, older, uneducated and incomeless subjects. The onus is on us (the dental community) and on the administration to strive for the following:<sup>[4]</sup> (1) Separate geriatric dental outpatient dispensaries (OPDs) which keep in mind the many handicaps of the aged; (2) Free or subsidized dental treatment for the aged and (3) Mobile dental clinics and dental camps.

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