



Prosthetic Status and Prosthetic Needs among Institutionalized Geriatric Individuals in Nashik City Maharashtra: A Descriptive Study

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ABSTRACT

Objectives: A descriptive cross-sectional study was conducted among institutionalized geriatric individuals in Nashik city, Maharashtra, to assess their prosthetic status and needs.

Materials and methods: The oral examination of the study subjects was carried out using Basic Oral Health Surveys, WHO 1997 criteria.

Results: A total of 160 individuals were included in the study of which 40 were females and 120 were males. A total of 55 (34.37%) study participants had some prosthesis at the time of examination, whereas 136 (85%) were in need of prosthesis. A total of 49 subjects (30.62%) needed complete dentures in both jaws. Around 26 (16.25%) of the subjects needed combination prosthesis.

Conclusions: The study concludes that the prosthetic status of the institutionalized geriatric individuals in Nashik city is poor with a higher unfulfilled prosthetic needs. A systematic strategy planning is needed to address these needs.

Clinical significance: There exists a higher unfulfilled prosthodontic need among institutionalized geriatric individuals in Nashik city.

Keywords: Elderly, Prosthetic status, Prosthetic needs, Institutionalized.

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INTRODUCTION

The age distribution of the world's population is changing. With advances in medicine and prolonged life expectancy, the proportion of older people will continue to rise worldwide. As people's age, their susceptibility to chronic

and life-threatening diseases as well as acute infections increases, exacerbated by compromised immune systems.¹

Oral diseases are usually progressive and cumulative. The process of aging may directly or indirectly increase the risk of oral diseases and tooth loss, compounded by poor general health, illnesses or chronic diseases.¹

The elderly people, also, have to face barriers to oral health care like, impaired mobility that impedes access to oral health care, financial hardship following retirement, the cost or perceived cost of dental treatment, together with poor attitudes to oral health, may deter them from visiting a dentist.¹

The burden of oral disease is likely to grow in many developing countries because of unhealthy diets rich in sugars and high consumption of tobacco. It has been observed that industrialized countries spend 5 to 10% of their national public health resources on dental care a year, but most developing countries allocate no budget at all to the control of oral disease.²

India is a developing country with almost 7.6% elderly population at present and it is expected to rise to 8.9% in the year 2016 and 21% by the year 2050.^{3,4} Hence, the present study was carried out to assess the prosthetic status and needs of institutionalized elderly in Nashik, by using WHO 1997.⁵

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted to assess prosthetic status and prosthetic needs of institutionalized elderly individuals in Nashik city. All the study subjects residing in old age homes in Nashik city.

A verbal permission was taken from the concerned authorities after explaining purpose and procedure of the study. A voluntary informed verbal consent was taken from each study subject before examination.

The oral examination was carried out using Basic Oral Health Surveys, WHO 1997⁵ criteria using artificial light. WHO, Oral Health Assessment forms⁵ were used to record the data. The examination was carried out by a single examiner, trained and calibrated prior to the study and recorded by a trained recording clerk.

Inclusion Criteria

All the geriatric individuals residing in various institutions for elderly of Nashik City.

Exclusion Criteria

- Study subjects not willing for examination
- Study subjects with contraindication for examination
- Nonambulatory/medically/psychologically compromised subjects who could not move out of their room for examination.

RESULTS

There were total 175 study subjects in four old age homes in Nashik. Out of these, 15 were excluded from the examination not being present on the day of examination or not able to come to the examination room as per exclusion criteria. Remaining 160 subjects were examined using WHO 1997 methodology, observations were recorded and the results were calculated.

Among the 160 study subjects, 25% (n = 40) were females and 75% (n = 120) were males. 10% (n = 16) of the study subjects were below 65 years of age, 63.12% (n = 101) were between 65 to 74 years of age and 26.87% (n = 43) were above 75 years as seen in Table 1.

Prosthetic status of the study subjects by type of Prosthesis and by jaw has been shown in Table 2. Total 55 (34.37%) of the study participants had prosthesis in the form of bridge (single or multiple), removable partial denture and complete denture. 19 (34.54%) subjects had prosthesis in the form of a single bridge and 7 (12.72 %) subjects had complete dentures in one or both of the jaws. It was a perceptible fact that almost all of the complete dentures were in need of replacement due to wear or improper fit.

Prosthetic needs of the study participants by type of prosthesis and by jaw has been shown in Table 3. Out of 160 study subjects, 136 (85%) were in need of prosthesis. 49 subjects (30.62%) were in need of complete dentures in both jaws. 26 (16.25%) of the subjects needed combination prosthesis.

Distribution of dentate and edentulous study subjects in different age groups has been shown in Table 4. Out of 160 study subjects, 111 (69.37%) were having natural teeth and 49 subjects (30.62%) were completely edentulous. The percentage of edentulousness was found to increase with increasing age and was highest in the age group above 74 years.

DISCUSSION

Present study included 160 study subjects in the age range from 62 to 83 years with mean age being 76.23 years.

Total 55 (34.37%) of the study participants had prosthesis at the time of examination. Similar findings have been recorded by Prasad KVV,⁶ Thakare V and Ajith Krishnan CG.⁴ The prosthetic status was higher in few other studies.⁷⁻¹⁰

Table 1: Age and gender wise distribution of study participants

Age group	Male	Female	Total
Below 65 years	10 (62.50%)	6 (37.50%)	16 (10%)
Between 65-74 years	80 (79.20%)	21 (20.79%)	101 (63.12%)
Above 75 years	25 (58.13%)	18 (41.83%)	43 (26.87%)
Total	115 (71.87%)	45 (28.12%)	160

Table 2: Prosthetic status of the study subjects by type of prosthesis and by jaw

Type of prosthesis	Upper jaw	Lower jaw	Both jaws	Total
Bridge	5 (3.12%)	6 (3.75%)	8 (5%)	16 (34.54%)
More than one bridge	3 (1.87%)	5 (3.12%)	5 (3.12%)	13 (23.63%)
Removable partial denture	8 (5%)	2 (1.24%)	6 (3.75%)	16 (29.09%)
Complete denture	1 (0.62%)	0 (0.00)	6 (6.25%)	7 (12.72%)
Total (No) Percentage	17 (10.62%)	13 (8.12%)	25 (18.12%)	55

Table 3: Prosthetic needs of the study participants by type of prosthesis and by jaw

Type of jaw	Type of prosthesis				Total
	Single unit	Multiple unit	Combination	Complete denture	
Upper jaw	7 (4.37%)	16 (10.00%)	13 (8.12%)	0 (0%)	36 (22.50%)
Lower jaw	5 (3.12%)	21 (13.12%)	9 (5.60%)	0 (0%)	35 (21.87%)
Both jaws	4 (2.5%)	8 (5.00%)	4 (2.50%)	49 (30.62%)	65 (34.37%)
Total	16 (10.00%)	45 (28.12%)	26 (16.25%)	49 (30.62%)	136 (85.00%)

Table 4: Agewise distribution of dentate and edentulous study subjects

Age group	Dentate	Edentulous	Total
Below 65 years	12 (75%)	4 (25%)	16 (10%)
Between 65-74 years	71 (70.29%)	30 (29.70%)	101 (63.12%)
Above 74 years	28 (65.11 %)	15 (34.88 %)	43 (26.87%)
Total	111 (69.37 %)	49 (30.62 %)	160

A total of 136 (85%) study subjects were in need of prosthesis out of which 49 subjects (30.62%) were in need of complete dentures in both jaws and 26 (16.25%) of the subjects needed combination prosthesis.

The need for prosthesis was similar to the studies by Stuck AE⁸ et al, Mersel A¹⁰ et al, Smith JM¹¹ et al, Frenkel H¹² et al, Thakare V and Ajith Krishnan CG.⁴ Higher prosthetic needs have been reported by Kraljevic S.⁷

It was seen that high percentage of study participants were in need of prosthetic rehabilitation compared to those with fulfilled prosthetic needs. The probable reasons for lower percentage of fulfilled prosthetic needs in the present study may be due to an unfounded belief by families and health-care practitioners that tooth loss is inevitable during aging, lack of awareness on the importance of oral health and components of dental care, poor access to services and higher costs of dental care, etc.

Among 160, 49 (30.62%) study participants were completely edentulous. The percentage of edentulousness was found to increase with increasing age.

The findings were in correlation with those reported by Thakare V and Ajith Krishnan CG,⁴ Ekanayake L,¹³ Edward CM,¹⁴ Miyazaki H,¹⁵ Dohllan TA,¹⁶ Rao A.¹⁷ Lower prevalence 11.83% of edentulousness has been reported by Prasad KVV⁶ among home dwelling elderly. However in the present study, the subjects were institutionalized elderly and period of institutionalization is seen to be associated with edentulousness.¹⁴

Higher prevalence of edentulousness has been observed among few other studies.^{8,12,18,19,20-22} The higher prevalence of edentulousness in these studies may be due to the higher mean age of the study subjects as compared with the present study wherein a lower mean age was observed. Majority of the studies, show a positive correlation between edentulousness and age.

The higher edentulousness observed among other studies may also be due to the reason that in most of these studies the subjects were either hospitalized or are having the medical illnesses of longer duration, psychiatric problems, physical dependency etc. These are not significant in our study as subjects with severe physical and mental disability were excluded from the examination according to the exclusion criteria.

The results of the present study shows that there was high percentage of unfulfilled prosthetic needs among the institutionalized elderly individuals in Nashik and the prosthetic status was poor. A wide gap was seen in between the prosthetic needs and prosthetic status.

This indicates an urgent need of proper strategy planning by the institutional authorities, dental professionals, government to add the dimension of quality to increased life years and to make these latter years of life more fruitful and pleasurable. National oral health planners should be encouraged to integrate systematic oral health activities toward improved quality of life.

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