

Prosthetic Status and Needs Among 65–74 Years Population of Khora Village, Ghaziabad District, Uttar Pradesh

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Abstract

Aim: To assess the prosthetic status and needs among 65–74 years population of Khora Village, Ghaziabad district, Uttar Pradesh. *Materials and Methods:* The study population consisted of 153 subjects (65–74 years). Out of 153 subjects, 138 elderly individuals (79 males and 59 females) were examined at their homes under standardized conditions. There prosthetic status and needs were recorded according to WHO 1997 methodology. *Results:* Only 6.52% of study subjects possessed full dentures and 13.76% subject possessed partial denture. At least 9 out of 10 subjects needed some form of prosthetic treatment. Some form of prosthetic treatment needed by male subjects was 89.3% and 94.4% by female subjects was found statistically insignificant ($p < 0.05$). *Conclusion:* The results illustrated poor prosthetic status and showed extremely high need for treatment in this population.

Keywords: Elderly; Prosthetic Status; Prosthetic Needs; Ghaziabad.

Introduction

The ageing phenomenon has transpired as a significant health issue of the twenty-first century. Across the world, declining fertility and increased longevity have collectively resulted in higher numbers and proportions of older persons 60 years and above [1, 2]. India has attained the tag of an ageing nation with the elderly population in 2013 being over 8% and is anticipated to increase to 20% by 2050 [3].

Eighty per cent of the elderly population resides in rural areas. At least 3 out of 4 of the elderly are economically dependent. One in three of the elderly are below the poverty line and only 28% of the elderly population is literate. Two salient features regarding the elderly population of India are that the rate of growth of the elderly population is much quicker than the growth of the total population and the feminization of the elderly population [4].

The complexity of oral health status and its association with systemic health among older adults

make prevention and early intervention critical. If impairments are not addressed at an early stage the likelihood becoming disabled increases manifold [5].

A number of studies have been conducted in the past on the oral health status of elderly people [6, 7] which revealed that oral health of elderly people was poor. Besides, some of the studies indicated that dental treatment needs greatly exceeded the demand for treatment in both categories i.e. denture and non-denture wearers. Dental caries & periodontal disease are most common oral diseases affecting 50–60% [8] and 95–100% [9] adult populations in India respectively. Nearly 19% of the population aged between 65–74 years is edentulous [10]. Thus, it is essential to assess the oral health status and treatment needs, among rural population.

Though many studies are done for the same but no baseline data was available pertaining to the prosthetic status and needs of older people in Ghaziabad district. Hence, an attempt was made to assess the prosthetic status and needs of 65–74 years of Khora village, Ghaziabad district, UP.

Materials and Methods

This cross-sectional descriptive study was conducted to assess the prosthetic status and needs among 65–74 years of population residing in Khora

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village of Ghaziabad district. Permission to conduct this survey was obtained from IEC (Institutional Ethical Committee).

The complete list of the population of Khora village was obtained from last election voting list from village Sarpanch office and all the 153 elderly subjects were considered for the study. With the help of sarpanch, houses were visited and approximately 153 subjects who were residents of that place were examined after taking the verbal consent. Out of 153 study subjects, 15 subjects did not participate: the reasons being refusal, not present at home during examination etc. Clinical examination on the remaining 138 was carried out by a single trained and pre-standardized examiner accompanied by a trained recorder.

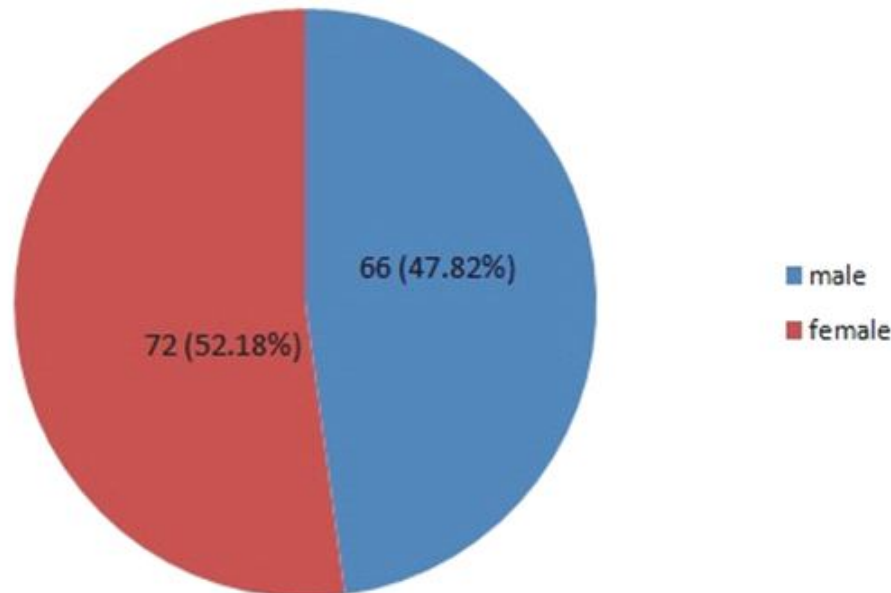
Type III examinations were carried out with mouth mirror and WHO periodontal probe. Prosthetic status and prosthetic treatment needs were recorded by using WHO methodology 1997 [11]. In general each subject was classified into one of the three categories according to his or her denture status such as no denture, denture wearers (either bridge or partial denture) and full denture.

Prosthetic need applied to one of the three categories according to his or her need: no denture required (No prosthesis needed), partial denture required (either one unit prosthesis or multiunit prosthesis or combination of one and/ or multiunit prosthesis) and full denture required. Recording was done with the help of a recorder who was made to sit near the examiner.

The collected data were processed and analyzed by Statistical Package for Social Science (SPSS) version 18 on Microsoft office Excel 2007. The chi-square test was used to show association between gender of individuals and need for prosthesis.

Results

A total of 138 elderly subjects (Age range = 65–74 years; mean age 68.7 years \pm 1.9 years) were examined of which 66 (47.82%) were males and 72 (52.17%) were females (Graph 1).



Out of the total population of 138, 9 (6.52%) male subjects had complete dentures prosthesis and 7 (5.07) had single denture (upper or lower jaw).

Out of 66 male subjects only 5 (7.5%) subjects possessed complete denture, whereas 3 (4.54) had single (upper or lower) denture.

Out of 72 females 4 (5.55) subjects possessed complete denture whereas 4 (5.55) had single (upper or lower) denture.

As far as partial dentures were concerned, (13.76) subjects possessed partial dentures. Out of 66 male subjects only 9 (11.3%) and 10 (13.88) out of 72 female subjects possessed partial denture (in one or both jaws). None of the subjects were wearing a bridge in both jaws, whereas 2 (3.03) male subjects and 1 (1.38) female subject had a bridge in a single (upper or lower) jaw.

Table 1:

Gender	Subjects	Complete denture N (%)		Partial dentures N (%)		Bridge(s) N (%)	
		Upper or Lower	Upper & Lower	Upper or Lower	Upper & Lower	Upper or Lower	Upper & Lower
Male	66	3 (4.54)	5 (7.5)	6 (9.09)	3 (4.54)	2 (3.03)	0
Female	72	4 (5.55)	4 (5.55)	8 (11.1)	2 (2.77)	1 (1.38)	0
Total	138	7 (5.07)	9 (6.52)	14 (10.1)	5 (3.62)	3 (2.17)	0

127 (92.02%) subjects needed some form of prosthetic treatment. Of these, 28.9% of subjects required complete dentures and 15.9 % of subjects needed single (either upper of lower) complete dentures. 4.34% of subjects needed (upper or lower) single partial dentures and 42.75 % of subjects needed both upper and lower partial dentures.

Table 2:

Gender	Subjects	Requiring Prosthetic Treatments	Complete denture N (%)		Partial dentures N (%)	
			Upper or Lower	Upper & Lower	Upper or Lower	Upper & Lower
Males	66	59 (89.3)	7 (10.6)	19 (28.7)	3 (4.5)	30 (45.4)
Females	72	68 (94.4)	15 (20.8)	21 (29.1)	3 (4.16)	29 (40.2)
Total	138	127 (92.02)	22 (15.9)	40 (28.9)	6 (4.34)	59 (42.75)

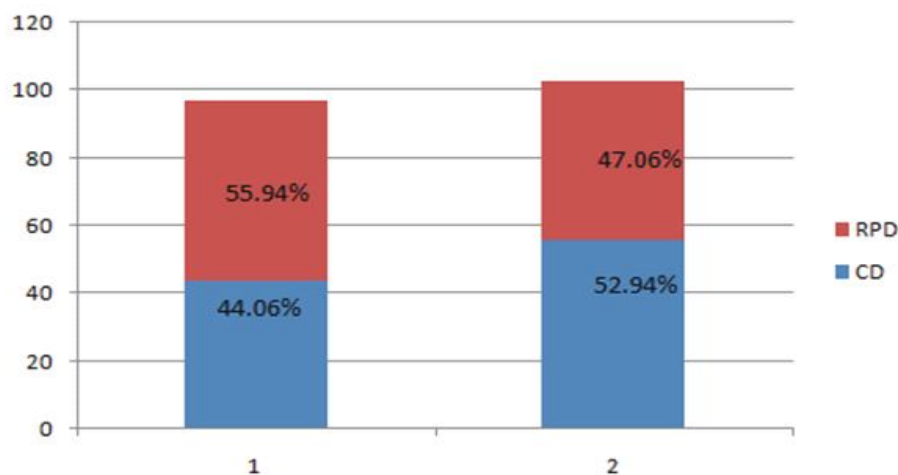
94.4% of females were in need prosthetic treatment as compared to 89.3% of males. Among the male subjects, 28.7% needed complete dentures, whereas 10.6% needed single (either upper or lower) complete dentures. Among female subjects 29.1% needed complete dentures, whereas 20.8% needed single (either upper or lower) complete dentures (Table 2).

Among the male subjects, 45.4% needed upper and lower partial dentures, whereas 4.5% needed single (upper or lower) partial dentures. On the other hand, 40.2% of females needed upper and lower partial dentures, whereas 4.16% needed single (upper or lower) partial dentures. There was no statistical

significant association found between gender of the subjects and need for prosthesis (Table 2).

Among male subjects 44.06 % needed complete denture and 55.94% partial dentures. While in female group 52.94 % needed complete denture and 47.06 % needed partial dentures (Graph 2).

Graph 2. Distribution of prosthesis need by gender



Discussion

In the present study significantly lower number of subjects had some prosthesis. Only 6.52 % of study subjects possessed complete denture, 13.76% subjects had partial dentures (single or both upper & lower) and 2.17% subject had bridge.

These results are similar to other studies conducted. Goel *et al*, [12] reported that 92.6% of the edentulous subjects were not having any oral prosthesis in the upper arch and 92.5% in the lower arch. Shrivastav *et al*, [13] reported 86.3% and 88.0% of the subjects had no prosthesis in the upper and lower arch respectively and only 4.2% had complete dentures. Shenoy *et al*, [14] reported 88% of the 133

subjects were fully edentulous, and only 12% had complete dentures. Thukral *et al*, [15] found 78.5% required dentures. Bijjargi and Chowdhary found that less than 50% of edentulous elderly and only 10% of partially edentulous elderly were wearing dentures [16].

The few reasons for such poor prosthetic status might be due to high incidence of caries and periodontal disease among the elderly population, attitudes towards oral health, their care-seeking behavior, and the limited options of treatment modalities etc.[17]

It was observed that there was not much of difference between male subjects (7.5%) and female subjects (5.5%) who possessed complete denture. This reflects that utilization of dental care services varies between genders; being higher among females [18].

92.02% subjects require some form of prosthetic treatment. Out of this, 48.81% required complete denture (single or both upper and lower) and 51.18% required partial dentures. The results are similar to the study conducted by other such similar studies [6, 17, 19].

Such a high percentage of prosthetic need might be due to problems related to decrease in physical mobility, dependency on help and general tiredness that make difficult to visit a dental clinic or limit the utilization of dental services [20].

In the present study, the prevalence of edentulousness was higher as compared to DCI survey, [17] but higher as compared to Shah N [8] and all South East Asian countries except Sri Lanka as reported by WHO [10].

Few studies have been conducted concerning the oral health conditions, prosthetic status and needs among elderly population in India. To draw any trend analysis from the limited number of studies available will be erroneous, although the available data suggests that the Indian geriatric population has poor oral health and prosthetic status with high unmet needs.

Unfortunately, the provision of oral healthcare services is very little in rural parts of India where approximately 80% of the elderly reside. India has 306 dental colleges, almost one-third of the world's schools. More than 26,000 dentists graduate produce in India each year. There is a total workforce of approximately 200,000 dental practitioners in India at present, which is expected to soon swell to 350,000. However, majority of the dental surgeons (95%) work in private sector in urban and suburban areas. Dentists-to-population ratio in India, which was 1:300,000 in the 1960's, stands at 1:10,000 today. Dentist-to-population ratio is 1:250,000 in rural areas [21]. Thus, considering the amount of prosthetic need

the elderly population must be educated for the maintenance of oral hygiene. Periodic dental screening and domiciliary dental visits need to be developed to improve access to dental service. But all this will be possible once the present generation of dentists coming out of dental colleges move towards the rural area and lend a helping hand towards the elderly.

Recommendations

Formulating national oral health strategy

Healthy geriatric policies need to be formulated once we have the adequate database for elderly population. Limited numbers of studies are available from the community to estimate the burden of oral diseases in elderly population in India. Government of India must ensure that every elderly person receives quality oral care at affordable costs. National oral health policy needs to be implemented with a special emphasis and an objective towards reducing geriatric oral health burden and improving the oral health-related quality of life of the elderly.

Implementing Geriatric Dental Education

Despite demographic pointers indicative of the future volume of geriatric oral healthcare needs, no formal training on this subject has been introduced in the dental curriculum in India by Dental Council of India whereas most of the dental schools in US and Europe support geriatric dentistry. In all the subjects of undergraduate and postgraduate dental curricula in India, geriatric dentistry does not figure anywhere. No training is given for oral care provision to patients in long-term care facilities or for the homebound elderly. Time has come to change the mind-sets of policy-makers, students and academicians and incorporate geriatric dentistry as a subject formally in the undergraduate dental curriculum and introducing a new speciality of geriatric dentistry for dental care for elderly in this country.

Conclusion

The present study clearly indicates that the prosthetic status was very poor with few subjects having prosthesis and prosthetic needs were higher. There is an escalating demand for geriatric oral healthcare in India. Education in geriatric dentistry will enable dental professionals to understand, plan and deliver need-based oral healthcare to elderly

population. Viewing the shift in the demographic profile, it becomes the responsibility of the policy framers and the dental profession to ensure that India has an adequate number of dentists with the appropriate knowledge and skills to treat the elderly.

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