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An Assessment of the Prosthodontic Status of People Visiting a Dental Clinic in a South Indian City

SOMIL CHADDHA¹, RAM CHANDRA TEJA^{*2}**BACKGROUND:** Oral diseases among elderly can directly affect their Quality of Life.**AIM:** To assess the prosthodontic status of people visiting a dental clinic in a south Indian city.**MATERIALS AND METHOD:** The present study is an attempt to study the prosthodontic status of people attending a private clinic in Delhi from August to November 2021. Data was collected with the help of WHO Oral Health Assessment Form (2004) and survey was conducted as per guidelines of American Dental Association for Type III examination. Statistical analysis was done using SPSS 23.0.**RESULTS:** Out of 384 study subjects, 30.2% were completely dentulous, 17.8% were completely edentulous and rest were partially edentulous for the maxillary arch. While 14.8% were completely dentulous, 12.4% were completely edentulous and 72.8% were partially edentulous for the mandibular arch. Prosthodontic status for both the maxillary and mandibular arches.**CONCLUSION:** The study population had a poor prosthodontics status. High cost of prosthetic treatment, lack of availability of skilled healthcare professionals, poor infrastructure and the general attitude of the population towards replacement of missing teeth are the major hindrances in the way of healthcare delivery system in our country. This has led to the poor prosthodontic status in general population.**KEYWORDS:** Prosthodontic Status, Edentulous, Elderly

INTRODUCTION

Aging is a natural process, and with it, there are various physical and biological changes occurring in one's body. With advancements in technology, the average life span of an individual has increased significantly. This has led to increased number of elderly population and has further offered the dental health-care professionals to observe exceptional challenges to treat this section of elderly.¹

It is an established fact that loss of teeth has a negative impact on the oral health as well as the emotional well being of an individual.² It has been reported that one's general health is related to oral health and general health is related to quality of life, tooth loss could have an impact on quality of life.

Loss of teeth is associated with a variety of factors like oral hygiene practices, habits, socio economic status, literacy level, cultural beliefs and attitudes.³ Major reasons for tooth loss can be dental diseases like caries or periodontal pathology, traumatic injuries, congenitally missing teeth or extractions. It is predicted that the elderly population of India shall be the highest in the world by 2025.³

Over the past few years, several measures have been taken by the authorities to improve the oral health

status in Indian population. These have primarily focussed on the preventive aspects which have definitely brought down the incidence of dental disease amongst children and adults. At the same time, prosthetic needs of the population by and large have not been addressed to the same extent. High cost of prosthetic treatment, lack of availability of skilled manpower, infrastructure and the general attitude of the population towards prosthetic replacement of missing teeth are the major barriers of healthcare delivery system in our country.

Prosthetic replacements can vastly improve the oral health and function. Prosthodontic rehabilitation has the ability to reduce and, in many respects, eliminate the deficits attributable to lost teeth, and patients of all ages, properly motivated, can adapt to dental prosthesis that are carefully designed. Therefore, the present study was conducted to assess the prosthodontic status of people visiting a dental clinic in a south Indian city.

MATERIALS AND METHOD

The present study was an attempt to study the prosthodontic status of people attending a private dental clinic in south India. The Inclusion criteria was subjects 14 years or more in age and only permanent dentition was considered. Subjects were informed of



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the nature of the investigation and were included in the study after their written consent was obtained.

A survey performa was prepared with the help of WHO Oral Health Assessment Form (2004) and was framed to collect information regarding the demographic profile, educational status, income, occupation and various other factors which influenced the prosthodontic status and needs. A recording assistant was trained to assist in recording the investigation results recorded by the examiner. The survey was systematically scheduled to spread over a period of 4 months from August 2021 to November 2021. The presence of prostheses was recorded for each jaw. The following codes were used to record prosthodontic status: 0 – No prosthesis, 1 – Bridge, 2 – More than one bridge, 3 – Partial denture, 4 – Both bridge(s) and partial denture(s), 5 – Full removable denture, 9 – Not recorded. The subjects were examined with mouth mirror and explorer under natural light/ torch as per guidelines of American Dental Association for Type III examination. Armamentarium used included plane mouth mirrors, explorers, tweezers, kidney trays, sterilized Cotton / gauze pieces, disposable mouth masks, disposable gloves, torch, hand towels, data collecting sheet, pen, pencil.

Subjects were examined seated in a dental chair. The recorder was made to sit close to the examiner so that the instructions and codes could be easily heard. Immediately after the examination, oral health instructions were given as and when required.

For investigation disposable mouth masks and gloves were used. Instruments were sterilized by autoclaving and chemical sterilization. After each day of the survey, all the instruments were sterilized by autoclaving in the clinic for reuse. The data was transferred from pre-coded survey form to computer. A master file was created for the purpose of data analysis. SPSS version 20.0 was used for the statistical analyses. Descriptive statistics, chi-square tests were applied during the statistical evaluation of the data.

RESULTS

The present study consisted of 384 study subjects having age range from 18 to 76 years with mean age of 41.8 ± 14.6 years. The maximum number of study subjects (29%) belonged to 21–30 years of age. There were 201 males and 183 females and is depicted in table 1.

Gender	Frequency	Percent
Male	201	52.3
Female	183	47.7
Total	384	100.0

Table 1. Distribution of study population according to gender.

Out of 384 study subjects, 30.2% were completely dentulous, 17.8% were completely edentulous and rest were partially edentulous for maxillary arch. While 14.8% were completely dentulous, 12.4% were completely edentulous for the mandibular arch. (Table 2&3)

Missing teeth mandible	Frequency	Percent
Completely dentulous	116	30.2
Kennedy class I	48	12.5
Kennedy class II	62	16.1
Kennedy class III	58	15.1
Kennedy class IV	32	8.3
Completely edentulous	68	17.8
Total	384	100.0

Table 2. Distribution of study population according to missing teeth in maxillary arch.

Missing teeth maxilla	Frequency	Percent
Completely dentulous	57	14.8
Kennedy class I	60	15.6
Kennedy class II	79	20.6
Kennedy class III	84	21.8
Kennedy class IV	57	14.8
Completely edentulous	47	12.4
Total	384	100

Table 3. Distribution of study population according to missing teeth in mandibular arch.

Most partially edentulous subjects lost their teeth due to caries and the next common factor was periodontal issue. (Table 4)

Reason for loss of teeth	Frequency	Percent
Caries	206	53.6
Periodontal	86	22.3
Trauma	42	10.9
Not applicable	50	13.2
Total	384	100.0

Table 4. Distribution of study population according to reason for loss of teeth.

The study comprised of 384 subjects in the age range of 19-76 years. There were 206 males and 178 females. Edentulism increased with age, majority of subjects who were edentulous, belonged to age group of 60 years and above. Prosthodontic status for both the maxillary and mandibular arch was very poor with 59.6% and 51.8% individuals being devoid of any kind of prosthesis in the maxillary and mandibular arch respectively. Table 5 and 6 show the prosthodontic status of the study population in both the maxillary and mandibular arch.

DISCUSSION

The present study reveals that complete edentulousness increased with increase in age. These results were similar to the results obtained by Shah N (2004).⁴ Subjects above the age of 60 years needed complete dentures as compared to the younger age group who had a higher need for partial dentures. This may be because in the rural elderly, knowledge regarding availability of prosthetic services is very low.

Prosthodontic status maxillary arch	Frequency	Percent
No prosthesis	229	59.6
Bridge	36	9.3
Partial denture	42	10.9
Full removable denture	77	20.2
Total	384	100.0

Table 5. Distribution of study population according to prosthodontic status in maxillary arch.

Prosthodontic status mandibular arch	Frequency	Percent
No prosthesis	199	51.8
Partial denture	56	14.5
Full removable denture	129	33.7
Total	204	100.0

Table 6. Distribution of study population according to prosthodontic status in mandibular arch.

The prosthetic status in males and females in this study population showed significant differences with the higher percentage of females having a full removable prosthesis. The females were more concerned about the negative impact of loss of teeth on their appearance.

The prevalence of the partially edentulous condition indicates a lack of progress towards controlling dental disease or the patient's affordability of fixed prostheses. The prevalence of Kennedy's Class III was more in accordance with the findings by Geetha Prabhu et al. (2011).⁵ Dental caries was the most important reason for tooth loss in our study population. It constituted about 105(51.5%) followed by periodontal disease 44(11.6%) and trauma 12 (5.8%). This finding confirmed that caries remains a problem in adults. This finding agreed with other studies by Prabhu et al (2009).⁶

The fact that dental caries is the leading cause of tooth loss may be attributed to changes in diet in both rural an urban areas.

The results of the present study highlight a very poor prosthodontic status which are in accordance to the results of the studies carried out by Nadgere J et al (2010)⁷ and Shah VR et al. (2012).⁸ It still remains a challenge for most developing countries to establish policies and programs to effectively provide oral healthcare to the masses. Various measures suggested below can be employed to meet this goal.

Oral health care delivery should be made a part of the general health care programs. Primary health care workers can help spread awareness about the

importance of regular oral health check-up and the importance of prosthodontic rehabilitation.

The dentists in the rural set ups should be educated to not practice extraction as a simpler form of treatment, rather stress and educate people for preventive and restorative procedures which will eventually lower the prosthodontic need.

Mobile dental clinics, outreach programs, door to door campaigning, offering subsidized or free prosthodontic rehabilitation, provision of dental insurance schemes by the state government, setting up of separate geriatric clinics can help in improving the current situation.

There were a few limitations of this study. The first limitation was its cross-sectional nature, which limits our ability to relate the time pattern to the present dental status of the subjects interviewed. Second, unrestorable teeth as well as root stumps were considered as teeth being present. Such teeth which were indicated for extraction but still present in the mouth will add to the treatment needs. Also, the existing prosthesis which were faulty were counted as prosthesis being present but were indicated for replacement which would add to the treatment need.

In certain shortened dental arches, the patient may not experience much change in the masticatory function. Thus, in those individuals in which sufficient number of occluding pairs are present prosthodontic replacement may not be required thus lowering the prosthodontic need.

CONCLUSION

The findings of this study clearly demonstrate a high prosthodontic status among the population surveyed. To improve the oral health and prosthodontic status, it is necessary to spread awareness regarding the importance and benefits of prosthodontic treatment. Results show that the prosthodontic status is very poor. Edentulism should be declared as a disease and also the consequences of edentulousness should be described to the population. A greater awareness regarding proper dental hygiene and timely replacement of the missing teeth needs to be stressed among the general public. In the rural elderly, knowledge regarding availability of prosthodontic services is very low which translates into a high unmet prosthodontic need. Many of them did

not know that just a few missing teeth could be replaced. Prosthodontic services are not available in most of the government run hospitals and that there were wide gaps between level of edentulousness, denture wear and denture needs of the community are the issues that need to be addressed to improve the situation that currently exists.

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