Perceived Status and Care Practices among Complete Denture Wearers

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Background: Oral health is neglected even today. This can be evidently seen in the low utilization rates and poor oral health status. Conventional dentures are the most common treatment option in the restoration of lost teeth. Without appropriate denture care practices, there is an elevated risk of developing a multitude of problems. The aim of this study was to assess the perceived status and care practices among complete denture wearers in Modern Dental College and Research Centre, Indore, Madhya Pradesh, India.

Materials and Methods: A cross-sectional study was conducted in the Department of Prosthodontics at the Modern Dental College and Research Centre, Indore, Madhya Pradesh, India. Patients with self-care optimum overall health who were using either single or full complete dentures for more than 1 year from the commencement of the study were requested to participate in the study. A total of 1000 study participants were given a self-administered questionnaire on their denture care practices followed by clinical examination of the denture status. Data were statistically analyzed using the Statistical Package for the Social Sciences software for Windows, version 20.0.

Results: Maximum denture wearers informed that they cleaned their dentures once a day, with brush and water, and had the habit of removing the dentures before sleeping at night. Almost 90% of the participants reported their denture status to be good or fair. Clinical examination revealed that slightly more than half of the participants had poor denture status.

Conclusion: This study signifies the importance for improvement in patient oral health education and counseling with respect to the maintenance of dentures and upkeep of denture hygiene. It also emphasizes the need for educating patients on how to evaluate the status of their dentures.

Keywords: Denture care, denture hygiene, edentulism, practices, self-perceived

INTRODUCTION

Globally, older people are escalating faster than any other age-group.[1] India shall soon be catering earth’s second largest number of geriatric people in the world.[2] The World Health Organization (WHO) definition for oral health states that an individual is considered to have good oral health if he/she retains, throughout life, at least 20 natural teeth, which are functional, aesthetic, and not needing a prosthesis.[1]

This definition has its own inherent limitations of confining the broader construct of oral health to retention of teeth, it highlights the importance of retaining teeth to lead a healthy and productive life.[3] The role of dentists never ends with the placement of the prosthesis. Measures must be taken to ensure that any dental prosthesis is properly taken care of by the patient, thereby contributing to the health of the foundation area, the supporting tissues, and to the success of the treatment.[4,5] A neglected dental prosthesis not only represents a lack of patient self-care optimum health but also the failure of the treatment.
knowledge but also highlights a potential lack of motivation on the part of the dentist.[6,7] However, many complete denture patients tend to think that being in the state of edentulism does not require any specific oral hygiene measures, and they do not return to the dentist for regular denture maintenance.[8-12] Despite patient oral education and instructions concerning oral and denture hygiene, there remains a significant number of edentulous patients who cannot adequately clean their dentures and who wear them even while sleeping in the night, which could be due to negligence and/or lack of knowledge on denture hygiene.[12-17] This study aimed to assess the perceived status and care practices among complete denture wearers who underwent denture treatment in the department of prosthodontics in a private dental college, Indore, Madhya Pradesh, India.

MATERIALS AND METHODS

This cross-sectional study was conducted in the Department of Prosthodontics at the Modern Dental College and Research Centre, Indore, Madhya Pradesh, India, from January 2019 to December 2019. The sample size calculated for this cross-sectional study was determined using the formula $Z_{a/2}p(1-p)/d^2$. The obtained sample size was 1000. In the recruitment of the required sample, patients with self-care ability and adequate overall health who were using either single or full complete dentures for 1 year from the time of the study were requested to participate in the study. The questionnaire was prepared in English, later translated into the local language Hindi, followed by back-translation to English for assessing the accuracy of translation. The initial questionnaire was slightly modified to improve comprehension for the patients based on the suggestions received. The questionnaire sought information on demographics (including age, gender, education, and time of wearing of dentures), method and frequency of cleaning, and self-perceived denture status. A thorough clinical examination was performed after the completion of the questionnaire, which also included examination of the status of existing dentures. The dentures were evaluated for hygiene, and were categorized as “good,” “fair,” and “poor” based on the accumulated plaque on denture surfaces. Two investigators participated in the clinical examination, and the inter-examiner agreement in the clinical rating of denture status was identified to be good with a $\kappa$ statistic of 0.86. The questionnaire was found to have good internal consistency reliability (Cronbach $\alpha = 0.78$). Ethical clearance for the study was obtained from the institutional review board of the institute. The purpose of the study was explained to the participants, and a written informed consent was taken before the start of the study.

Statistical analysis: The obtained data were statistically analyzed using the Statistical Package for the Social Sciences (SPSS) software, version 20.0 (IBM SPSS Statistics for Windows; IBM, Armonk, NY). Descriptive statistics, Spearman’s correlation test, and chi-square test were used for data analysis. Alpha level was set at 5%, and the statistical data were summarized in table form.

RESULTS

Of the 1000 denture wearers who participated in the study, female participants outnumbered male participants by a considerable margin. The majority of the participants belonged to the age-group of 50–74 years, who were illiterates, residing in rural areas, with 1 year of experience wearing dentures. Approximately 80% of the participants reported cleaning their dentures once a day regardless of the material used for cleaning. The most common mode of cleansing dentures was with water and toothbrush (76%). Table 1 shows the correlation between self-perceived denture status, their actual denture status, the duration of wearing dentures, and the frequency of cleansing dentures. No statistically significant association was observed between the denture hygiene practices of the patients and their educational level ($P > 0.05$). Almost 90% of the study participants reported their denture status to be good or fair. Clinical examination revealed that more than half of the participants had poorly maintained dentures. A significant weak positive correlation was observed between the self-perceived denture status and

| Table 1: Correlation between self-perceived denture status, actual denture status, duration of wearing dentures, and the frequency of cleansing dentures |
|---------------------------------------------------------------|
| **Correlation coefficient**                                   |
| **Self-perceived denture status**                             | **Actual denture status** | **Duration of denture status** | **Frequency of cleansing dentures** |
| Self-perceived denture status                                 | 1(-)                      | 0.192                          | -0.062                             | 0.309                             |
| Actual denture status                                        | 0.192                     | 1(-)                           | -0.109                             | 0.104                             |
| Duration of denture wear                                     | -0.641                    | -0.432                         | 1(-)                               | -0.092                            |
| Frequency of cleansing dentures                              | 0.220                     | 0.112                          | -0.082                             | 1(-)                              |
actual denture status. Figure 1 shows the association between denture hygiene practices and self-perceived or actual denture status.

**DISCUSSION**

This study reveals the denture hygiene practices among complete denture wearers, as well as the self-perceived, actual status of these dentures. A significant majority of the participants (90%) reported cleaning their dentures once a day regardless of the method of cleaning. However, this was not reflected in the clinical examination of dentures, with 60% of dentures being rated as having poor hygiene. There are two possible explanations for this mismatch: one could be the method of cleansing the dentures, and the other reason could be the general tendency of the participants to be socially desirable. The percentage of participants who reportedly clean their dentures once daily was higher in this study than those reported by Saha *et al.*[17] (52.5%) and Apratim *et al.*[18] (44.7%). The reasons for low frequency of cleansing dentures in these studies were the lack of awareness on how to clean their dentures. This highlights the important need to make patients more aware regarding the process of cleansing dentures.[19-23]

The most common method of denture cleaning was using water and brush, which is found to be more than other studies. The reasons for this finding could be the fact that majority of the study participants were from rural areas who have limited access for denture care materials both in terms of availability and affordability. On examining the condition of the dentures, most of the study participants were identified to have fair denture hygiene. The relatively fair denture hygiene status in the earlier studies could be due to the limited awareness among the patients regarding the necessity to keep denture hygiene and limited denture hygiene education updated, they might have received at the oral health care facilities. The belief among a majority of participants that the status of their dentures is good or fair could actually be a contributory factor for poor self-care.

**CONCLUSION**

The study revealed that the denture hygiene practices were fair among the study population. It highlights the need for improvement in patient education and counseling with respect to the maintenance of dentures and upkeep of denture hygiene. It also emphasizes the need for educating the patients on how to evaluate the status of their dentures.

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**Conflicts of interest**
There are no conflicts of interest.

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