

## ORIGINAL RESEARCH

# Assessment of Denture Hygiene Habits among Elderly Patients Wearing Complete Dentures

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## ABSTRACT

**Introduction:** Complete dentures are used for replacing the entire set of lost teeth in the dental arch. Regular oral and denture hygiene procedures play a major role in the maintenance of oral health and the long-term success of removable prosthodontic treatment.

**Aim:** The aim of this study was to analyze the hygiene habits of complete denture patients in the local population of Indore.

**Materials and Methods:** A descriptive, cross-sectional survey was conducted using a self-administered questionnaire involving the complete denture patients, and 459 denture subjects were assessed. Descriptive analysis was performed.

**Results:** A total of 287 subjects cleaned their denture twice a day. Majority of the subjects used only water and toothbrush to clean their dentures. About 280 subjects do not have any reflex sensation while wearing the denture. Since the complete denture provides extensive support to the patient and withstands the masticatory force very effectively, a vast number of subjects do not take out their denture while eating.

**Conclusion:** Several educational and motivational camps should be conducted to increase the awareness about denture cleanliness among the older subjects. Dentists should educate that microbial deposition on the tooth surface is harmful and instructs them to clean their dentures regularly.

**Keywords:** Complete dentures, Denture hygiene habits, Elderly patients.

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## INTRODUCTION

Complete dentures are used for rehabilitation of the entire dental arch so as to restore the esthetic and functional conditions of the patients. The maintenance of an odor-free appliance is an important parameter in the successful rehabilitation of a patient.<sup>[1]</sup>

From the moment, the edentulous patient is fitted with dentures, and the important phase of oral and denture aftercare begins. Clinical follow-up should include instructing patients on denture care, guidance regarding features of an ill-fitting denture, relining and rebasing procedures, if necessary, and the need for replacing dentures as and when required. Regular oral and denture hygiene procedures play a major role in the maintenance of oral health and the long-term success of removable prosthodontic treatment.<sup>[2]</sup>

The main aim of cleaning the denture is to remove the plaque adhering to the denture which, in turn, will eliminate the cause of denture stomatitis and reduce the presence of microorganisms on the denture which has been known to act as a reservoir of microorganisms involved in systemic diseases such as aspiration pneumonia, endocarditis, and diabetes.<sup>[3-5]</sup>

A variety of habits related to denture hygiene and duration of wearing of dentures has been reported in the literature. Therefore, a study was conducted with the objective of determining the behaviors and hygiene habits of complete denture patients in the local population of Indore.

## Aim

The aim of this study was to analyze the hygiene habits of complete denture patients in the local population of Indore.

## MATERIALS AND METHODS

### Study Design

A descriptive, cross-sectional survey was conducted using a self-administered questionnaire<sup>[6]</sup> involving the complete denture patients attending the department of prosthodontics, dental hospital in Indore city.

### Study Duration

The duration of the study was 4 months, i.e. from August to November 2017.

## Study Subjects

A total of 520 denture subjects, who reported to the Department of Prosthodontics, College of Dental Sciences and Hospital, Rau, Indore, were assessed. The questionnaire took about 15 min to complete. A total of 61 subjects who did not complete the questionnaire and were uncooperative were excluded from the study, yielding a sample of 459 individuals.

## Official Permission and Ethical Clearance

The study protocol was reviewed by the Institutional Ethics Committee of College of Dental Sciences and Hospital, and ethical clearance was granted.

## Informed Consent

A written consent was obtained from all the patients.

## Eligibility Criteria

### Inclusion criteria

Subjects willing to participate in the study were in the study.

### Exclusion criteria

Medically compromised patients and patients suffering from chronic illness were excluded from the study.

## Pro Forma Details

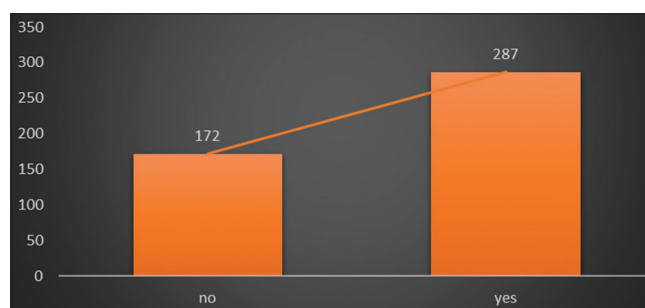
Figure 1 depicts the survey form which included self-explanatory questions in correspondence to previous studies conducted by Roshene *et al.*<sup>[6]</sup> A random sampling method with convenient sample size was used. Questionnaire was prepared both in English and Hindi (local language) to improve the participants' understanding of the questions.

The patients took 10–15 min to complete the questionnaire. Filled questionnaire pro forma was collected and analyzed.

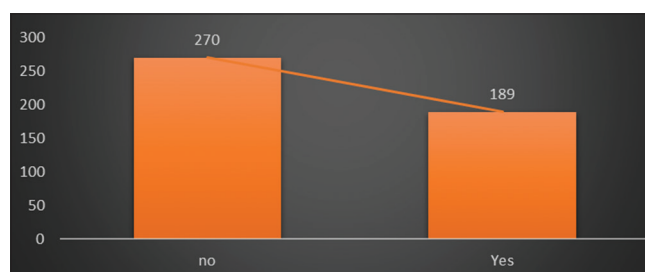
## Statistical Analysis

The data were entered into Microsoft Excel spreadsheet and processed using the Statistical Package for the

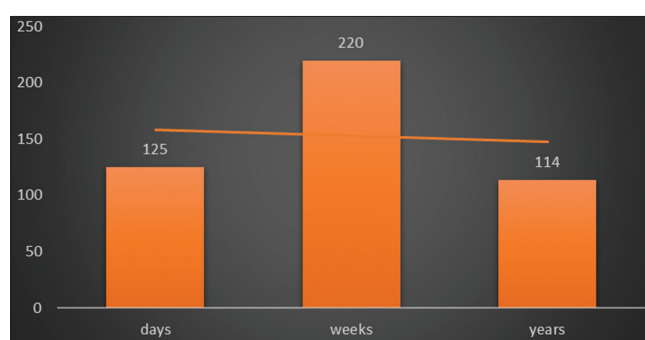
Figure 1: Questionnaire



Graph 1: Frequency of cleaning denture per day



Graph 2: Incidence of using mouthwash



Graph 3: Duration of using denture

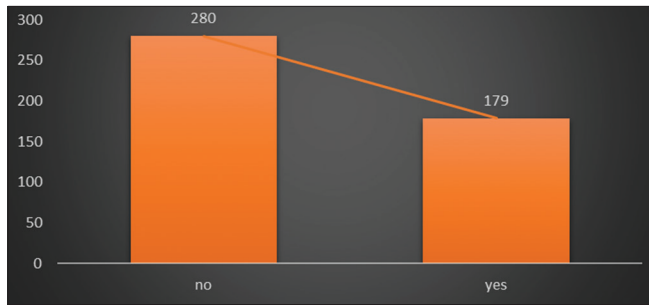
Table 1: Demographic distribution of the study subjects

Demographics	n (%)
Gender	
Male	319 (69.5)
Female	140 (30.5)
Age	
Group 1 (30–50 years)	290 (63.18)
Group 2 (51–70 years)	90 (19.6)
Group 3 (71 years and above)	79 (16.55)

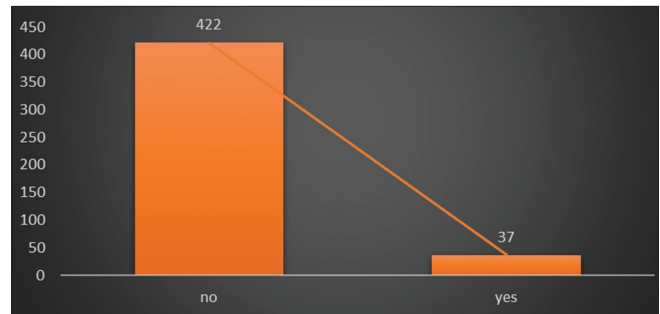
Social Sciences version 20 (SPSS Inc., Chicago, Illinois, USA). Descriptive analysis was performed.

## RESULTS

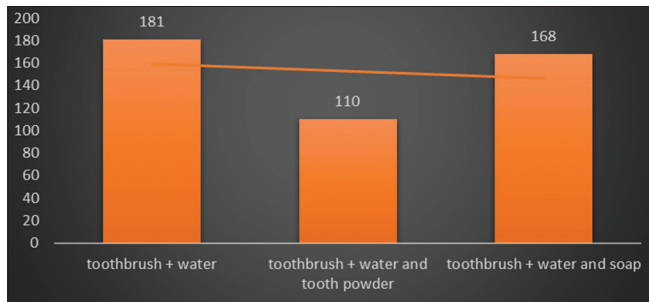
Table 1 shows, there were 319 males and 140 females study subjects out of which 290 study subjects were in the age group of 30-50 years, 90 subjects in 51-70 years



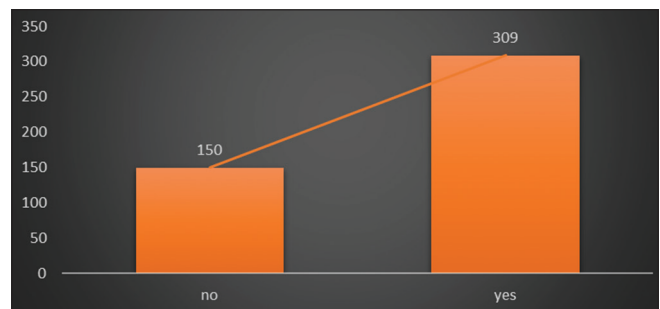
**Graph 4:** Incidence of denture causing any reflex sensation



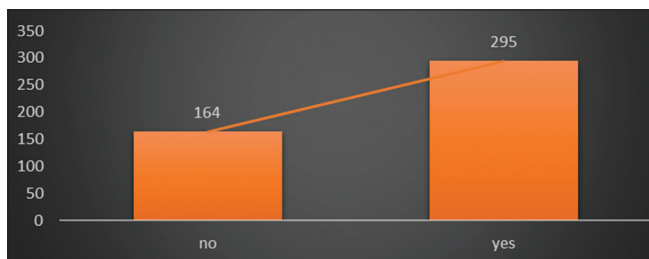
**Graph 8:** Incidence of take out the denture while eating



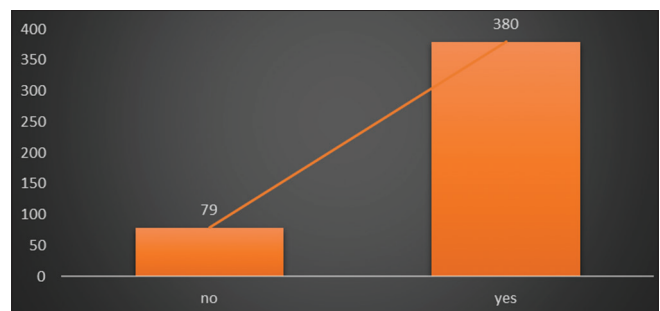
**Graph 5:** Materials used by the subjects for cleaning the denture



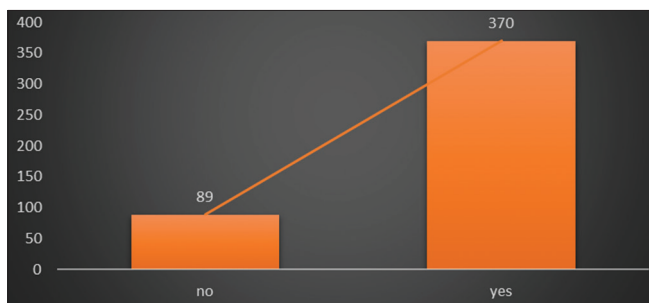
**Graph 9:** Occurrence of cheek or tongue mucosa biting



**Graph 6:** Occurrence of irritation while wearing denture



**Graph 10:** Occurrence of eating hard food with denture



**Graph 7:** Incidence of difficulty in cleaning the denture

and 79 subjects in 71 years and above. Graph 1 shows, a total of 287 subjects who are nearly more than half of the sample size cleaned their denture twice a day. Graph 2 shows, most of the patients wearing complete denture do not use mouthwash. Graph 3 shows, 220 subjects used dentures for weeks 125 subjects used the dentures for days and 114 subjects used the dentures for years. Graph 4 shows, 280 subjects do not have any reflex sensation while wearing the denture. Graph 5 shows, majority of the subjects used only water and toothbrush to clean their dentures. Graph 6 shows, they have irritation

while wearing the denture. Graph 7 shows, 370 subjects find difficulty while cleaning their dentures. Graph 8 shows, a vast number of subjects do not take out their denture while eating. Graph 9 shows, of 459 subjects, cheek bite or tongue bite occurs in 309 patients wearing the denture routinely. Since the complete denture provides extensive support to the patient and withstands the masticatory force very effectively. Graph 10 shows, 180 subjects chewed hard food with denture and 79 subjects did not chewed hard food with denture.

## DISCUSSION

Poor denture hygiene is a seemingly common problem encountered by prosthetic dentists' with their numerous complete denture patients.<sup>[7]</sup> This study describes a detailed patient behavior on denture cleansing regimens. The negative impact of poor denture hygiene among older adults is an important public health issue.<sup>[8]</sup> Although denture hygiene education is the utmost important part of denture therapy, most elderly

patients are not sufficiently informed and periodically recalled to review denture care.<sup>[9]</sup>

The wearing of new complete denture is usually associated with a lot of complaints. The complaints are looseness of the denture, pain, discomfort, masticatory problems, bad odor, altered speech, and accumulation of food particles. To avoid any other infections or diseases, the denture must be maintained in a proper condition by cleaning it often.<sup>[10]</sup>

In the present study, of 459 subjects, about 287 subjects who are nearly more than half of the sample size cleaned their denture twice a day. Similar results were found in the study conducted by Roshene *et al.*,<sup>[6]</sup> Nevalainen *et al.*,<sup>[11]</sup> and de Castellucci Barbosa *et al.*,<sup>[12]</sup> while opposite results were found in a study done by Hoad-Reddick *et al.*<sup>[13]</sup> and Dikbas *et al.*<sup>[14]</sup>

In the present study, most of the patients wearing complete denture do not use mouthwash. Similar results were found in the study conducted by Roshene *et al.*<sup>[6]</sup> and Thatapudi Shankar *et al.*<sup>[9]</sup>

In the present study, most of the subjects used only water and toothbrush to clean their dentures. This value was much higher than that reported by Apratim *et al.*<sup>[15]</sup> and lower than that reported by Patel *et al.*<sup>[16]</sup> However, the others studies conducted by Coelho *et al.*<sup>[17]</sup> and Dikbas *et al.*<sup>[14]</sup> reported much higher values in comparison to the present study.

These results showed that mostly elderly subjects are not very much aware of the denture hygiene and its various complications. The individuals do not use appropriate cleansing solutions to clean their denture properly. Most of them do not place the denture in water during sleep at night which in turn can cause many problems in the oral environment. The denture should be cleaned after placing in water overnight so as to remove any slimy layer which is most commonly present in it.

## CONCLUSION

It was concluded that the patients had limited knowledge about denture hygiene and oral care and that the subjects were unaware of the measures of cleaning the dentures. Financial and socioeconomical factors can be the other etiological reason for neglecting the use of denture cleaning aids.

Several educational and motivational camps should be conducted to increase the awareness about denture cleanliness among the older subjects. Dentists should educate that microbial deposition on the tooth surface is harmful and instructs them to clean their dentures regularly.

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