

# Evaluation of Denture Hygiene Maintenance among Denture Wearers in Jammu Population

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## ABSTRACT

**Aim:** The aim of the study is to determine denture hygiene maintenance among denture wearers in Jammu population. **Materials and Methods:** The present study was conducted in District Hospital, Kathua District, Jammu, from June 2016 to October 2016. The study sample consisted a total of 100 subjects (50 males and 50 females) with age ranging from 51 to 80 years, which were selected on the basis of inclusion criteria. Patients wearing removable complete denture who used it for more 6 months were asked questions regarding the denture hygiene habits by the pre-structured questionnaire.

**Results:** The majority of the males and females clean their dentures once in a week (36% and 48%, respectively) followed by once daily cleaning pattern of the dentures (26% and 22%, respectively). The least prevalent pattern was cleaning the denture after every meal (10% and 12%, respectively). The differences between the cleaning patterns among males and females were statistically insignificant. Majority of the subjects in both the genders (42% and 48%, respectively) cleaned their dentures by brushing them without soap. However, the differences were statistically insignificant.

**Conclusion:** The majority of the patients wearing removable complete dentures in Jammu clean their dentures once in a week by brushing them without soap. Thus, proper post denture insertion instructions to maintain the hygiene of the dentures should be given to the patients to avoid the incidence of denture-related oral diseases.

**Key words:** Denture cleaning, Dentures, Elder, Jammu

## INTRODUCTION

There is a growing interest in the oral health status of the elderly, as the size of this population is increasing worldwide due to increase in life expectancy. In dentistry, there is an increasing emphasis on maintaining oral health in the old age, when alterations in oral tissues are associated with various conditions.<sup>[1]</sup>

Complete dentures are the most common treatment for total loss of teeth in a dental arch. Although the prevalence of total tooth loss continues to decline among adults, population shifts have resulted in a sustained, even slightly increasing demand for complete dentures.<sup>[2]</sup>

Denture cleanliness is essential to prevent malodor, poor esthetics and the accumulation of plaque/calculus with its deleterious effects on the mucosa.<sup>[3]</sup> The microporous surfaces

of an acrylic denture provide a wide range of environments to support microorganisms that can threaten the health of physically vulnerable denture patients.<sup>[4]</sup> There are innumerable solutions, pastes and powders available for cleaning dentures with a variety of claims about their relative efficacies.<sup>[5]</sup>

Food particles located between the denture and the gingiva or between the denture and the palate allow multiplication of *Candida* spp. and bacteria, which can cause denture stomatitis. These microorganisms may also serve as reservoirs for disseminated infections with gastrointestinal and pleuropulmonary involvement. Hence, cleansing and disinfecting of dentures are essential for the maintenance of oral soft tissue health.<sup>[6,7]</sup>

Lesions of the oral mucosa associated with wearing of removable dentures may represent acute or chronic reactions to microbial denture plaque, a reaction to constituents of

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the denture base material, or a mechanical denture injury. The lesions constitute a heterogeneous group with regard to pathogenesis. They include denture stomatitis, angular cheilitis, traumatic ulcers, denture irritation hyperplasia, flabby ridges, and oral carcinomas.<sup>[8]</sup>

It is the obligation of the dentist to motivate and instruct the denture wearers and provide the means and methods for plaque control.<sup>[2]</sup> Dental professionals must have a current knowledge of denture cleansing strategies to maximize the services offered to their denture patients.<sup>[9]</sup>

Patients should be instructed to rinse their dentures and their mouths after meals whenever possible. The mucosal surfaces of the residual ridges and the dorsal surface of the tongue also should be brushed daily with a soft brush; denture cleansers may also be used. However, it has been observed that the majority of denture wearers do not pay necessary attention to the cleanliness. This may be due to decreasing manual abilities due to advanced age.<sup>[10-12]</sup>

The present study is conducted to determine denture hygiene maintenance among denture wearers in Jammu population.

## MATERIALS AND METHODS

The present study was conducted in District Hospital, Kathua District, Jammu, from June 2016 to October 2016. The study sample consisted a total of 100 subjects (50 males and 50 females) with age ranging from 51 to 80 years, which were selected on the basis of inclusion criteria.

### Inclusion Criteria

The following criteria were included in this study:

- Completely edentulous patients.
- Patients wearing removable complete dentures from at least 6 months.

### Exclusion Criteria

The following criteria were excluded from the study:

- Patients wearing removable partial dentures.
- Patients having fixed partial dentures and implant supported dentures.

Patients wearing removable complete denture who used it for more 6 months were asked questions regarding the denture hygiene habits by the pre-structured questionnaire.

The evaluated data were subjected to statistical analysis using SPSS software version 20. Chi-square test was applied to interpret the evaluated data.

## RESULTS

Table 1 summarized the age distribution of patients wearing removable complete dentures. Table 2 summarized that majority of the males and females clean their dentures once in a week (36% and 48%, respectively) followed by once daily cleaning pattern of the dentures (26% and 22%, respectively). The least prevalent pattern was cleaning the denture after every meal (10% and 12%, respectively). The differences between the cleaning patterns among males and females were statistically insignificant ( $P = 0.5316^{NS}$ ).

Table 3 summarized that majority of the subjects in both the genders (42% and 48%, respectively) cleaned their dentures

by brushing them without soap. However, the differences were statistically insignificant ( $P = 0.4433^{NS}$ ).

## DISCUSSION

The present study was conducted in District Hospital, Kathua District, Jammu, to determine denture hygiene maintenance among denture wearers in Jammu population. The findings of our study found that most of the patients had a habit of cleaning their dentures once in a week (42%), which is in contrast with the findings of Saha *et al.* who concluded that nearly half of the subjects cleaned their dentures once daily. In our study, 31% of the subjects had a pattern of cleaning their dentures once in a day, which is similar with the findings of Ali H *et al.*<sup>[13]</sup>

The present study showed that 45% of the subjects brushed their dentures without soap and only 19% immersed their dentures in water to clean them. These findings are in agreement with the studies conducted by Ali H *et al.*<sup>[13]</sup> and Patel and Patel.<sup>[14]</sup> Peracini *et al.* concluded that 58.49% of the patients did cleaning by immersion and among the substances used for immersion of the dentures; water was the most frequently used (38.71%).<sup>[15]</sup> The limitation of the study is that different types of immersion mediums were not taken into consideration and also the self-procedures used to clean the dentures were not taken into account. The poor denture maintenance by the patients can be attributed to lack of awareness and improper instructions about the cleaning of dentures by the prosthodontist to the patients.

**Table 1:** Age distribution of patients

Age (years)	Males	Females	Total
51-60	9	7	16
61-70	24	29	53
71-80	17	14	31
Total	50	50	100

**Table 2:** Pattern and frequency of denture cleansing in males and females

Pattern	Frequency (%)		Total
	Males	Females	
After every meal	5 (10)	6 (12)	11 (11)
Once daily	13 (26)	11 (22)	24 (24)
Once in a week	18 (36)	24 (48)	42 (42)
Twice in a week	14 (28)	9 (18)	23 (23)
Total	50 (100)	50 (100)	100 (100)

$\chi^2=2.202$ ,  $df=3$ ,  $\chi^2/df=0.73$ ,  $P(\chi^2>2.202)=0.5316^{NS}$

**Table 3:** Method of cleaning dentures

Method	Males (%)	Females (%)	Total (%)
Brushing with Soap	17 (34)	19 (38)	36 (36)
Brushing without Soap	21 (42)	24 (48)	45 (45)
Immersion in water	12 (24)	7 (14)	19 (19)
Total	50 (100)	50 (100)	100 (100)

$\chi^2=1.627$ ,  $df=2$ ,  $\chi^2/df=0.81$ ,  $P(\chi^2>1.627)=0.4433^{NS}$

## CONCLUSION

It can be concluded that majority of the patients wearing removable complete dentures in Jammu clean their dentures once in a week by brushing them without soap. Thus, proper post denture insertion instructions to maintain the hygiene of the dentures should be given to the patients to avoid the incidence of denture-related oral diseases.

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