



Denture Hygiene Habits among Elderly Patients Wearing Complete Dentures

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ABSTARCT

Objective: To determine the denture hygiene habits in complete denture patients according to their age and time of dentures.

Methods: In this study a self administered structured was developed to know the attitude of the patients regarding denture hygiene in the department of Prosthodontics. The total study sample consisted of 230 subjects including 124 (53.9%) males and 106 (46.1%) females. Data was analyzed using SPSS version 15.0 with chi-square test at p-value <0.05.

Results: Nearly half of the subjects clean their dentures daily once. Participants from the younger age group and who had been wearing dentures since 2 years maintain better frequency of cleaning. The majority of these subjects used water and brush for denture cleansing. After seeing the condition, half of the dentures were rated as good 50.3%, followed by fair and poor as 29.5 and 20.2% respectively.

Clinical significance: Poor condition of complete dentures seen in the population is mainly due to irregularly cleansing habits and also less usage of cleansing solutions. Dentists should give proper instructions regarding maintenance of denture hygiene.

Keywords: Denture hygiene, Complete denture, Habits, Denture cleansers.

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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.¹ Although the prevalence of oral mucosal disease has been found to be higher in older subjects, such as

trauma, systemic diseases, the presence of medications and oral and denture hygiene, may also influence the development of oral mucosal diseases.²

Despite of several advances in preventive and curative dentistry, common problem of aging populations is still the large number of edentulous people which is attributed to the increased prevalence of periodontal disease and caries.³ Complete dentures are the most common treatment for rehabilitation of total loss. But the rehabilitative treatment is successful only when patients are aware of correct prosthesis use and hygiene.⁴

As denture hygiene has been reported to be the main means of preventing oral lesions.⁵ 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.⁶

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.⁷

Instructions should be given regarding rinsing of dentures and mouth after every meal. Patient's should clean mucosal surfaces of the ridges and the dorsal surface of tongue daily with brush, denture cleansers may also be used. However, it has been found that mostly denture wearers do not pay attention to oral hygiene. This may be due to decreasing manual abilities due to advanced age.⁸ So, this cross-sectional study aimed to investigate the denture hygiene habits among old age denture wearers.

METHODOLOGY

The present survey was conducted among denture wearer patients coming for follow-up in the Department of Prosthodontics and Implantology in Dental College to know their oral hygiene and denture-wearing habits.

Table 1: Frequency of denture cleansing by age of the patients						
Age groups	No.	Once (%)	Once/twice in a week (%)	Occasionally (%)	Total (%)	p-value
45-54 years	64	39.8	22.0	8.3	27.8	0.000*
55-64 years	106	32.0	65.9	36.1	46.1	0.000*
≥65 years	60	28.2	12.1	55.6	26.1	0.001*

Table 2: Frequency of denture cleansing by age of the dentures						
Denture age	No.	Once (%)	Once/twice in a week (%)	Occasionally (%)	Total (%)	p-value
0-2 years	56	32.1	24.2	2.8	24.3	0.000*
3-5 years	117	42.7	60.6	44.7	50.9	0.000*
6-8 years	57	25.2	15.1	52.5	24.8	0.001*

The total study sample consisted of 230 subjects between time period of August 2012 to April 2013. Of them 124 (53.9%) were males and 106 (46.1%) females. They were further categorized according to age groups as 45 to 54 years (Group I), 55 to 64 years (Group II) and ≥ 65 years (Group III).

After obtaining ethical clearance from the Institute, a self structured questionnaire was developed regarding this. The questionnaire was later tested among a group of 10 patients to know the appropriateness and understandability. The purpose of the survey was explained to the subjects and written consent was obtained.

The questionnaire collected demographic information as age, sex, time of wearing and other questions were to know attitude of denture hygiene habits, frequency of cleaning and nocturnal denture-wearing habits.

Statistical Analysis

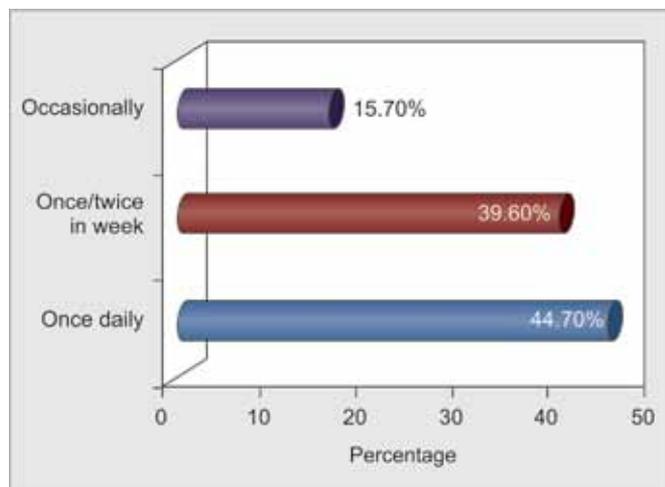
Data was analyzed using SPSS version 15.0. Frequency distribution, means, standard deviation were calculated with Chi-square test at p-value <0.05.

RESULTS

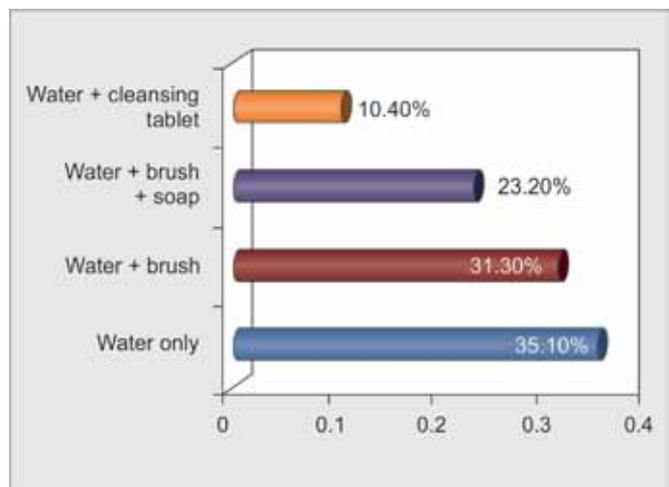
Out of the total sample size of 230 subjects who participated in the study, 64 belonged to the age group of 45 to 54 years, 106 subjects were of 55 to 64 years and 60 were ≥ 65 years of age.

Overall 44.7% participants clean their dentures almost once a day (Graph 1). Table 1 Shows that significantly most of the elderly patients in the age group of 45 to 54 years clean their dentures once daily, i.e. 39.8 and 65.9% of the subjects from age group of 55 to 64 years maintain denture hygiene once/twice a week. Whereas more than half of the participants, i.e. 55.6% from the oldest age group (≥ 65 years) clean their dentures occasionally (p = 0.001).

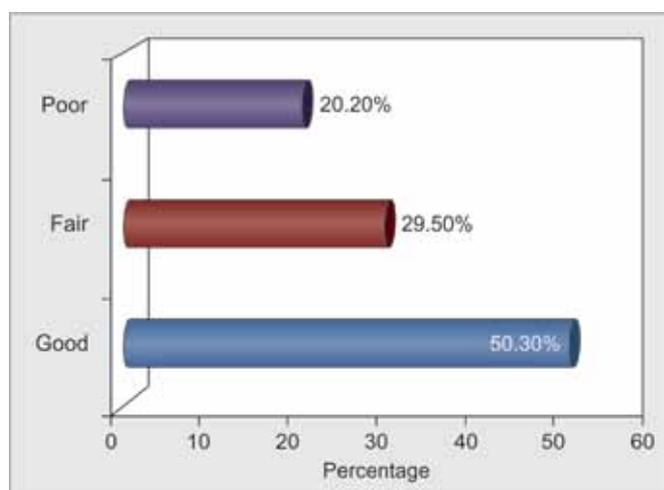
According to the age of dentures, it was observed that most of the study subjects (32.1%) who have been wearing dentures since 2 years clean it once daily. Among those who were wearing from 3 to 5 years, mostly participants clean once or twice in a week. And most people rarely maintain denture hygiene who were wearing since a long time, i.e. 6 to 8 years (Table 2).



Graph 1: Frequency of cleansing dentures by the elderly patients



Graph 2: Method of denture cleansing



Graph 3: Condition of dentures at the time of examination

According to the method of maintaining denture cleanliness, most of the patients maintain it with water only (35.1%) whereas very few did it with combination of water and cleansing tablets (10.4%) (Graph 2). In this study 74.3% of the subjects had nocturnal denture-removing habit.

After seeing the condition half of the dentures were rated as good 50.3%, followed by fair and poor as 29.5 and 20.2% respectively (Graph 3).

DISCUSSION

Cleansing and disinfecting of dentures are essential for the maintenance of oral soft tissue health. Adequate cleansing habits render biofilm formation difficult, in analogy to what happens on the natural dentition.

In this study most of the participants clean their dentures with water only (35.1%) and the findings were lower than the study conducted by Patel et al study in 2012 among a sample population of complete denture wearers in Ahmedabad.⁹ The present study also showed that 31.1% had habit of using brush along with water. But again the findings are lesser than the previous studies as Polyzois found 86% prevalence in Australia as knowledge of maintaining proper hygiene by brush is less among Indian population.¹⁰ Similar higher results were observed by Coelho et al (2004) in Brazil¹ and Dikbas et al (2006) in university hospital.¹² The reason behind this may be due to lower level of knowledge and awareness among this population.

Where 23.2% of the subjects maintain denture hygiene with water along with brush and soap and these findings are comparable to Patel et al study.⁹

It was found that 10.4% subjects immerse their dentures in cleansing solutions and the results were in contrast with Barbosa et al in 2008¹³ and Patel et al in 2012. It could be due to high cost of solutions and bleaching also results damage to denture.^{14,15}

Veres et al¹⁶ observed that 36% of the participants brushed their dentures, and very few people (5%) used immersion as cleaning and 63% used only water to clean their prostheses. Whereas the most of the studies had found that commonly used denture hygiene method is brushing with toothbrush.^{17,18}

Some authors mentioned that brushing with toothpaste may make denture surfaces rougher, which increases the accumulation of dental plaque and reduces the shine of denture surfaces.¹⁹ In addition; brushing without toothpaste is an inadequate approach to remove the microorganisms that colonize resinous materials.²⁰ Ideally, combination of brushing and soaking with cleansing solutions has been recommended as the most effective method for cleaning dentures.²¹

Around 44% of the study subjects mentioned that they clean their dentures once daily and the findings were similar to Ozcan et al²² in which 45.7% stated that they clean their dentures once a day. However many studies have shown higher frequency of cleaning as Peracini et al¹⁷ who reported 73.58% cleaned their dentures 3 times daily and Pietrokovski et al²³ said that 96% of patients reported cleaning their dentures 2 times per day.

The present study had shown that 74.3% subjects remove their dentures during night and this habit was positive than other studies as 41.5% reported by Dikbas et al,¹² 55.2% by Baran and Nalçaci²⁴ and only 26.3% reported by Marchini et al²⁵ who remove their dentures. Ideally prostheses should not be worn overnight to give rest to the supporting tissues.

According to the condition of the dentures around half of the dentures were in good condition in this study. Where as Amjad et al²⁶ in 2010 mentioned that denture hygiene was rated as 'Good' for 21.9% participants, 'Fair' for 45.0% and 'Poor' for 32.94%.

CONCLUSION

The study concluded that most common method of cleaning was mechanical either with water only, or brush and or soap. Frequency of cleaning with cleansing solutions was very low. But still half of the respondents maintain their denture hygiene daily, therefore similar percentage of subjects had their dentures in good condition. Dentists should educate that microbial deposition on the tooth surface is harmful and instruct them to clean their dentures regularly.

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