

Assessment of Some Habits and Practices related to Complete Denture Wearing – A Survey of Subjects Reporting to Watim Dental Hospital

Sadia Daaniyal¹, Zarah Afreen², Ammarah Afreen³, Eruj Shuja⁴, Gulmina Saeed Orakzai⁵, Aamna Khalil⁶

¹ Senior Registrar, Department of Prosthodontics, Watim Dental College, Rawalpindi.

² Assistant Professor, Department of Prosthodontics, Watim Dental College, Rawalpindi.

³ Assistant Professor, Department of Operative Dentistry, Watim Dental College, Rawalpindi.

⁴ Assistant Professor, Department of Oral and Maxillofacial Surgery, Watim Dental College, Rawalpindi.

⁵ Assistant Professor, Department of Oral Pathology, Watim Dental College, Rawalpindi.

⁶ Assistant Professor, Department of Prosthodontics, Multan Medical and Dental College, Multan.

Author's Contribution

¹ Conception of study

^{1,2} Experimentation/Study conduction

^{1,2,3,4} Analysis/Interpretation/Discussion

^{1,2,3,4} Manuscript Writing

^{5,6} Critical Review

^{5,6} Facilitation and Material analysis

Corresponding Author

Dr. Sadia Daaniyal,

Senior Registrar,

Department of Prosthodontics,

Watim Dental College,

Rawalpindi

Email: sadia.daaniyal@gmail.com

Article Processing

Received: 10/11/2020

Accepted: 17/02/2021

Cite this Article: Daaniyal, S., Afreen, Z., Afreen, A., Shuja, E., Orakzai, G.S., Khalil, A. Assessment of Some Habits and Practices related to Complete Denture Wearing – A Survey of Subjects Reporting to Watim Dental Hospital. *Journal of Rawalpindi Medical College*. 30 Mar. 2021; 25(1): 91-96.

DOI: <https://doi.org/10.37939/jrmc.v25i1.1511>

Conflict of Interest: Nil

Funding Source: Nil

Access Online:



Abstract

Objective: To assess some habits and practices related to denture wearing among subjects reporting to Watim Teaching Dental Hospital, Rawalpindi.

Materials and Methods: This is a cross-sectional study conducted at Watim Dental College, Rawalpindi, from December 2018 to August 2019. Using a pre-structured questionnaire, data were collected from 155 subjects having used complete dentures for a minimum of 6-months. The questionnaire consisted of information including the type of dentures, duration and frequency of denture wearing, and denture cleaning habits. Data were analyzed using SPSS version 20.

Results: Out of 155 participants, 80 (51.6%) were male and 75 (48.4%) were females. 89 (57.4%) patients use toothbrushes and soap for denture cleaning. 139 (89.7%) participants didn't wear dentures while sleeping and soaked them in water. 98 (63.2%) respondents were not using antiseptic oral rinse and were casual in mouth-cleaning.

Conclusion: From this study, it is concluded that 65 (41.9%) subjects were cleaning their dentures once a day. The study also reveals that 65 (41.9%) edentulous participants were not able to clean their oral cavity. Dentists should emphasize the importance of recall visits to evaluate the status of denture hygiene along with mucosal surface examination. Patient motivation to follow hygiene instructions and informing them about the harmful effects of overnight wearing of dentures should be part of delivering the prostheses to them

Keywords: Complete dentures, dental prosthesis, oral hygiene, denture cleansers.

Introduction

Recent demographic data shows that despite several advances in preventive and curative dentistry; edentulism in the aging population is still the most common problem which is associated with the higher prevalence of caries and periodontal diseases.¹ Over the past decade, the number of elderly patients in need of complete dentures as replacement of missing teeth has increased.¹ Long-term success of the denture not only depends on the accurate clinical and technical procedures that a dentist performs but also on dental care practices carried out by the patient.² There should be a proper cleaning regime for dentures as they have a tendency to accumulate plaque, stains, and calculus like natural dentition and can cause malodor and poor esthetics.^{1,3} The microporous nature of acrylic denture base provides the ideal environment to colonize microorganisms including bacteria and fungi, resulting in a tenacious biofilm leading to oral tissue diseases and serious systemic ailments.^{1,4} Some of the common lesions are denture stomatitis, angular cheilitis, traumatic ulcers, denture irritation hyperplasia, periodontal diseases, burning mouth syndrome, flabby ridges, and oral carcinoma.⁵ Other factors contributing to poor oral health along with surface roughness of the denture are inadequate oral hygiene, poor manual dexterity, failure to follow the instructions by the patients, and lack of proper instructions and guidance by the dentist.³

However, surveys have revealed that patients face difficulties in keeping the hygiene of their dentures.^{6,7,8} Most of the time patients don't come for their follow-up appointments at regular intervals for maintenance of the dentures.⁹ Over a period of time, various efficient methods of controlling plaque on dentures have been evolved including mechanical methods (brushing and ultrasonic devices), chemical cleansers (alkaline peroxides, hypochlorite, acids, and disinfectants), and the most advanced enzymes.⁴ Although, literature has shown, mechanical cleaning is the most efficient and common way but the preferred way is to use it in a combination of chemical cleaning.³ It is the responsibility of the dentist to guide and instruct the patients on initial adjustment and aftercare; providing guidance regarding rebasing procedures, and explaining the potential requirement for replacing dentures after some years of use.¹⁰

The rationale of this study was to assess the attitude and awareness about denture cleaning protocol amongst the patients, reporting to Prosthodontic

Department, Watim Dental College using a questionnaire. Previous studies have proved that complete denture wearers need to improve the standard of denture hygiene habits. So, the knowledge about denture hygiene habits should be continuously reassessed amongst complete denture wearers. This research will guide dentists to emphasize denture hygiene habits by educating the patients.

Materials and Methods

This cross-sectional descriptive study was carried out in the Department of Prosthodontics Watim Dental College, Rawalpindi, from Dec. 2018 to Aug. 2019. Data of 155 patients were collected after taking permission from the hospital ethical committee. The informed consent form was filled for every patient. The subjects were selected via non-probability consecutive sampling. A detailed history and examination were done. Inclusion criteria consisted of both male and female patients with ages ranging from 40 to 80 years, who were already wearing complete dentures at least for the last 6 months. Exclusion criteria consisted of patients with a history of maxillofacial trauma, any neurological disease, non-cooperative or mentally challenged people, patients with salivary gland disease, and terminally ill patients. A questionnaire previously used by Aoun and Greges⁴ was used to collect data. It consisted of socio-demographic details (age, gender, occupation), questions related to their dentures (kind of prosthesis, age of denture, and frequency of denture wearing), and denture cleaning habits (use of denture cleansers and brushing practices) was filled by the dentist. After collecting the data, statistical analysis was done using SPSS version 20. Descriptive statistics were computed for both qualitative and quantitative variables.

Protocol of Research – Questionnaire

Name: _____ Gender _____ Race: _____

Home address: _____ Date of birth: __/__/__

Profession: _____

Institution: _____

Business Address: _____

1- History

1.1- How long have you had your teeth extracted? _____

1.2- How long have you been using denture(s)? Upper _____ Lower _____

1.3- How long have you been using the current denture(s)? Upper _____ Lower _____

2- Hygiene

2.1- Have you received any instruction from your dentist on how to clean your denture(s)? Yes () No ()

2.2- How do you clean your denture(s)?
 Water + toothbrush ()
 Water and dentifrice + toothbrush ()
 Water and soap + toothbrush ()

2.3- How often a day do you clean your denture(s)? _____

2.4- Do you have any difficulty cleaning the dentures?
 Yes () No () Which part of it? _____

2.5- Do you soak your denture in any substance?
 Yes () No () Which? _____

2.6- Do you brush: the roof of the mouth (palate) () tongue () gum (ridge) ()

2.7- Do you use oral rinse? Yes () No () How? _____

2.8- Do you sleep with the denture(s)? Yes () No ()

Results

Out of 155 participants, 80 (51.6%) were male and 75 (48.4%) were females. 62 (40%) patients were using their dentures for more than 6 months to 1 year, 56 (36.1%) were having their dentures for 1 to 3 years, 25 (16.1%) for 3 to 5 years, and 12 (7.7%) for more than 5 years. The most common modality used for denture cleaning was found to be water and soap with a toothbrush which makes 57.4%, 43 (27.7%) patients are cleaning their dentures only with water, and 14.8% use some kind of dentifrice. Regarding frequency, 11 (7.1%) respondents never cleaned their dentures, 65 (41.9%) patients once a day, 65 (41.9%) twice a day, and only 14 (9%) after every meal. Many patients claimed that they do not do oral rinses with mouthwash and are not particular in cleaning their oral cavity. 120 (77.4%) participants do not find any difficulty in cleaning their dentures while 35 (22.6%) patients face some difficulty. Most of the patients soak their dentures in water when they remove them from their mouth while sleeping. Only 16 (10.3%) respondents wear their dentures at night when they are sleeping.

Figure 1: The questionnaire used for data collection (Aoun and Gerges 2017)⁴

Table 1: Method of cleaning dentures by subjects

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	Water plus toothbrush	43	27.7	27.7	27.7
	Water and dentifrice plus toothbrush	23	14.8	14.8	42.6
	water and soap plus toothbrush	89	57.4	57.4	100
	Total	155	100	100	

Table 2: Frequency of cleaning dentures by subjects

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	None	11	7.1	7.1	7.1
	1 time	65	41.9	41.9	49
	2 times	65	41.9	41.9	91
	3 times or more	14	9	9	100
	Total	155	100	100	

Table 3: Denture soaking in any substance by subjects

	Frequency	Percent	Valid Percent	Cumulative Percent
0	1	0.6	0.6	0.6
Yes	135	87.1	87.1	87.7
No	19	12.3	12.3	100
Total	155	100	100	

Table 4: Habit of denture wearing while sleeping

	Yes	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	10.3	10.3	10.3
	No	139	89.7	89.7	100
	Total	155	100	100	

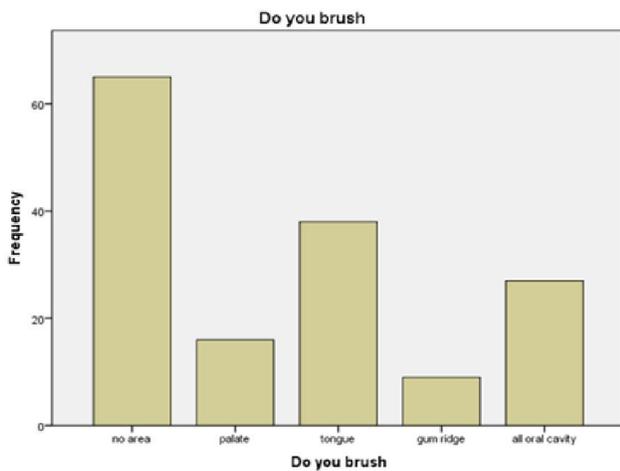


Figure 2: Mouth cleaning habit of subjects

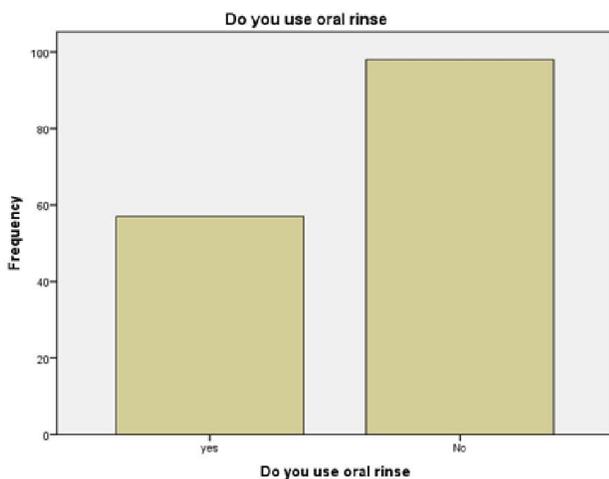


Figure 3: Use of oral rinses by subjects.

Discussion

Poor denture hygiene particularly in elderly patients is the most common problem seen in patients with

compromised health states and in those unable to maintain their denture hygiene due to manual dexterity and/or mental handicap, definitive lack of motivation, basic knowledge, carelessness, and neglect.¹¹ To ensure a problem-free, functional and esthetic prosthesis with ensured longevity, the treatment rendered to the patient should always include proper education and motivation provided by dental professionals.³

The present study also assessed the denture hygiene practices of 155 patients and their attitude toward denture hygiene and denture cleansers. Most of the patients, around 143 (92.3%) received instructions regarding denture cleaning from their dentists while some patients were informed that they were not given any instructions which are negligence on part of dental practitioners.

How do you clean your dentures?

The present study showed that 43 (27.7%) patients cleaned their dentures with only water and toothbrush. Another 23 (14.8%) patients used dentifrices with their toothbrushes. While 89 (57.4%) used water and soap with a toothbrush for maintaining the hygiene of their dentures. Previous studies also show that almost 100% of acrylic denture wearers do mechanical brushing of their prostheses. Amanda et al showed the same results regarding cleaning protocols of the dentures.⁶ Aoun et al⁴, Gautham et al⁵ and Roshene et al¹² have found that of all the respondents only 3%, 12.5%, and 22% respectively were using water and soap while our study has a much higher ratio which is 57.4%.¹² The reason for the use of soap and water is probably because it's a cheaper and easily available option.

A varying frequency of cleaning the dentures has been found among different respondents.^{13,14} 11 (7.1%) patients were not cleaning their dentures at all while 65 (41.9%) cleaned once a day and the same number of participants cleaned their dentures twice a day.

According to Cooper et al study, 54.8% of patients cleaned their dentures once a day and 35.5% of denture wearers cleaned their prostheses twice a day.¹⁵ Uzay Koc et al showed that 27.3% of subjects were cleaning their dentures twice a day.¹⁶ In the studies done by Amanda et al in Brazil, 73.58% of respondents clean their dentures 3 or more times a day which is a very high percentage as compared to the present study in which it is revealed that only 9% of patients clean their denture thrice a day.⁶ The reason for this huge discrepancy could be because patients reporting to Amanda's research were more educated and more aware of the importance of oral health.

The current study shows that 120 (77.4%) patients did not find any difficulty in maintaining the hygiene of their dentures while 35 (22.6%) patients reported some trouble in keeping their dentures clean. Out of 155 patients, 87.1% of participants reported that they soak their dentures in water when they remove them from their mouth. Only a small number of participants were aware of the use of chemical denture cleansers such as sodium hypochlorite and cleansing tablets in which they soak their dentures. The most probable reason for the limited use of denture cleansing agents is the cost and unesthetic brown stains on the denture.⁵ On the other hand 12.3% of patients leave their dentures outside their mouth. Similar results were obtained from the study carried out by Namrata et al which revealed that 93% of patients soak their dentures in water.² These results vary tremendously from the data collected by Geroges et al which showed 45.5% of patients soak their dentures in the water while 54.5% don't soak at all.⁵ This ignorant attitude of the patients demands more stress on follow-up visits and hygiene instructions by the dental staff.

Data analysis of this study revealed an alarming fact that 41.9% of patients were not efficient in maintaining their oral hygiene. Only 17.4% of participants reported that they brush their oral cavity. The reason for this result could be because most of the subjects participating in this study belonged to the lower middle class. These results were markedly different from Amjad et al results which revealed that 64.73% of participants were cleaning their oral mucosa as part of their oral hygiene routine as the participants were more educated and financially affluent. Dentists or dental staff must include complete care instructions about dentures and oral hard and soft tissues along with practical demonstrations.³

During this study when the respondents were asked about oral rinsing, 63.2% informed that they do oral rinsing frequently after meals. Some of them were

more aware of oral hygiene protocols and use mouthwash for rinses. 36.8% of patients were not following this practice. Amanda et al and Sahul et al in their studies showed that 53.77% and 48% of participants respectively are regular in doing oral rinses after meals.^{6,7}

Data analysis in this study shows that 139 (89.7%) respondents of the study removed their dentures from their mouth at night before sleeping and 16 (10.3%) patients had the habit of wearing their dentures at night time during sleeping. These results are very similar to the previous study carried out by Namrata et al and Sahul et al who declared that only 10%, and 16.5% of patients respectively, had the habit of sleeping with the dentures in their mouth.^{2,7} Amanda et al and Cakan et al found that almost half of the participants of their study were wearing dentures while sleeping at night time.^{6, 8} Cakan et al found no significant effect of the age and educational status on the overnight wearing of dentures.⁸ According to the current study most patients, 143 (92.3%) reported that at the time of delivery of the prostheses, they received instructions from their dentists and only 12 (7.7%) patients informed that they were not given any instructions regarding use and hygiene protocol of the dentures. These findings were similar to those of Milward et al who showed 91.8% of patients got instructions at the time of receiving their dentures.¹⁷ Apratim et al, Takamiya et al found out that 74.3% and 55.8% of subjects respectively removed their dentures before sleeping.^{19,20} Mushtaq et al in his study showed that 57.3% of patients received instruction from their dentists or dental staff whereas Aoun et al from his study revealed that 43 of 200 participants received instructions regarding denture cleaning protocol.^{3,4} The limitations of this study are that the subjects participating in the research belong to a localized population and there has been no correlation between hygiene habits, age, education level, and status of the patient. Another limitation of this study is that the status of denture-bearing soft tissue has not been scored.

Conclusion

Within the limitation of this study, it may be concluded that the patients who participated had limited knowledge regarding denture hygiene protocols and oral care. It is deduced that 65 (41.9%) subjects were cleaning their dentures once a day. The study also reveals that 65 (41.9%) edentulous participants were not able to clean their oral cavity.

Therefore dentists should emphasize the importance of recall visits to evaluate the status of denture hygiene along with mucosal surface examination. Patient motivation to follow hygiene instructions and informing them about the harmful effects of overnight wearing of dentures should be part of delivering the prostheses to them.

References

1. Suresan V, Mantri S, Deogade S, Sumathi K, Panday P, Galav A, et al. Denture hygiene knowledge, attitudes, and practices toward patient education in denture care among dental practitioners of Jabalpur city, Madhya Pradesh, India. *The Journal of the Indian Prosthodontic Society*. 2016 Jan;16(1):30.
2. Namrata M, Ganapathy D. Awareness about denture hygiene: A survey among patients wearing complete dentures and removable partial dentures. *Int J Orofac Biol* 2017;1:59-65
3. Mushtaq MA, Altaf J, Sheikh MA, Ali M, Khan MWU, et al. Assessment of Knowledge and Practices about Denture Hygiene among Complete Denture Wearers in Lahore City. *J Pak Dent Assoc* 2019;28:187-191.
4. Aoun G, Gerges E, Assessment of hygiene habits in acrylic denture wearers: a Cross-sectional study. *Mater Sociomed* 2017;29(3):216-218.
5. Gautham P, Mallikarjun M, Chakravarthy K, Kumar KR, Budege V, Bodankar N. Assessment of denture hygiene maintenance among elderly patients in Nizamabad (Telangana) population: A survey. *Journal of Dr. NTR University of Health Sciences*. 2016 Oct 1;5(4):275.
6. Peracini A, Andrade IM, Paranhos HD, Silva CH, Souza RF. Behaviors and hygiene habits of complete denture wearers. *Braz Dent J*. 2010;21(3):247-52
7. Lerra S, Khajuria N. A clinical survey of 250 cases on denture hygiene habits and oral tissue conditions of complete denture wearers. *IJADC* 2017 Sep; 3(4): 252-254
8. Cakan U, Yuzbasioglu E, Kurt H, Kara HB, Turunç R, Akbulut A, et al. Assessment of hygiene habits and attitudes among removable partial denture wearers in a university hospital. *Niger J Clin Pract*. 2015;18(4):511-5.
9. Arora A, Chawla Arora P, Kaur I, Kaur J. Oral hygiene habits among complete denture wearing patients in Amritsar-a survey *IJCDC*, 2017 Jan 1;7(1).
10. Akram M, Iqbal Q, Naeem S. Denture Hygiene Knowledge and Practices among Complete Denture Wearers Seen at Dental Hospital. *Journal of Nepal Dental Association* 2019 Jul; 19(2):10-13.
11. Azad AA, Butt MM, Ahmed A, Malik AS. Denture hygiene habits among edentulous patients seen at Armed Forces Institute of Dentistry, Rawalpindi. *Pak Oral Dent J*. 2015;35:735-7
12. Roshene R, Robin P, Raj JD. A survey of denture hygiene in older patients. *Journal of Pharmaceutical Sciences and Research*. 2015 Oct 1;7(10):897.
13. Ferruzzi F, Martins JC, Mori AA, Santin GC, Kurihara E, Sabio S. Influence of educational materials on the hygiene and utilization habits of denture wearers. *Gen Dent*. 2015 Jul 1;63(4):e6-10.
14. Ribeiro DG, Pavarina AC, Eunice, Giampaolo ET, Machado AL, Jorge JH, et al. Effect of oral hygiene education and motivation on removable partial denture wearers. *longitudinal study. Gerodontology*. June 2009;26(2):150-156.
15. Cooper P, Hegde R, Hegde C. A Questionnaire-Based Survey to Assess the Knowledge and Awareness of Denture Staining in Complete Denture Wearers. *Journal of Health and Allied Sciences NU*. 2019 Apr;9(02):45-50.
16. Vural Uk koç vural uz, taş n, yıldız e, şener m, uzamiş tekçiçek me, et al. The oral hygiene and denture status of people living in a residential home. *ciit*.40,ss.19-25, 2016
17. Milward P, Katechia D, Morgan MZ. Knowledge of removable partial denture wearers on denture hygiene. *Br Dent J*. 2013;215(10): E 20
18. Amjad M, Azad AA, Ayub MM, Qureshi MA, Javed MU. Denture Hygiene Habits In Complete Denture Wearers At Armed Forces Institute of Dentistry. *PAFMJ*. Dec 2010; 60(4): 12-31.
19. Apratim A, Shah SS, Sinha M, Agrawal M, Chhaparia N, Abubakkar A. Denture hygiene habits among elderly patients wearing complete dentures. *The journal of contemporary dental practice*. 2013 Nov 1;14(6):1161.
20. Takamiya AS, Monteiro DR, Barao VA, Pero AC, Compagnoni MA, Barbosa DB. Complete denture hygiene and nocturnal wearing habits among patients attending the Prosthodontic Department in a Dental University in Brazil. *Gerodontology*. 2011 Jun;28(2):91-6.