

Denture care practice in completely and partially edentulous patients reporting to tertiary care center in Islamabad

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Abstract:

Introduction: Replacement of missing teeth by complete or partial denture restores esthetics, improves speech, masticatory ability and preserves the remaining natural teeth and periodontal tissues. Due to loss of teeth there are adverse effects on quality of life which is associated with aesthetic, psychological, functional, and social impacts on peoples' lives. Quality of patient's life becomes better when esthetics, phonetics and function are improved as these are the major reasons for replacing missing teeth.

Objective: The objective of the study is to evaluate the denture cleaning habits and methods used by the patients and to assess the denture hygiene in those patients visiting the prosthodontics department of tertiary care hospital.

Settings: This study is carried at Islamic International Dental College, Islamabad.

Study design: This is descriptive cross sectional study.

Duration: Six months from November 2019 to April 2020

Material and Methods: This is descriptive cross sectional study conducted at Islamic International Dental College, Islamabad. It was conducted on 100 partially and completely edentulous patients reporting to the prosthodontics department at tertiary care hospital over a period of six months from November 2019 to April 2020. A well-designed questionnaire was formulated in both English and Urdu language for the ease of the patients. The questionnaire form was used to access the knowledge of denture hygiene among patients wearing dentures, the different denture cleaning methods used and the frequency of practicing denture hygiene. **Results:** A total of 100 patients were included in the study as per the inclusion and exclusion criteria. Out of them, 53 were males and 47 were females. The correlation of denture hygiene with completely edentulous and partially edentulous patients was found.

Conclusion: This study shows that the most commonly used denture cleaning method is rinsing with water. As this is the most cost effective and easy to use method for practicing denture hygiene. Dentists should emphasize on denture cleanliness and denture cleaning methods to improve the oral health and dentures longevity.

Keywords: denture hygiene, completely edentulous patients, partially edentulous patients, denture cleaning

Introduction:

Replacement of missing teeth by complete or partial denture restores esthetics, improves speech, masticatory ability and preserves the remaining natural teeth and periodontal tissues.¹ Due to loss of teeth there are adverse effects on quality of life which is associated with aesthetic, psychological, functional, and social impacts on

patient lives.^{7,8} Quality of patient's life becomes better when esthetics, phonetics and function are improved as these are the major reasons for replacing missing teeth. Restoration of partial or complete edentulism may be done using a variety of treatment options, each with its advantages and disadvantages.⁸ Treatment plan depends on patient's age, sex, socio-economic status and

Received

date: 29th May, 2020

Accepted

date: 13th January, 2021

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Table 1: Association of denture rinsing with water or mouth wash in partially and completely edentulous patients

	Rinsing				Total
	Always	Sometimes	Rarely	Never	
Edentulous patient	31	10	3	5	49
Partially edentulous patient	37	9	3	2	51
Total	68	19	6	7	100

previous denture experience.³

The most affordable and easy to fabricate are acrylic partial and complete denture and denture hygiene is the most important factor in both the partial and fixed dental prosthesis.¹⁰ Patient's satisfaction to removable complete or partial dentures depends upon technical, biological and physiological interaction by dentist, student or quack and patient. The dentist should consider patients expectations and dental need of treatment influence the level of patient's satisfaction.

Phase of oral hygiene and denture hygiene care starts immediately after the acrylic partial or complete denture is given. Failure to comply with healthy denture hygiene practice can lead to formation of plaque on dentures which provide a thriving environment for pathogenic organisms.^{2,14} To ensure dentures free of plaque and calculus, patients are usually instructed on denture hygiene practice during insertion of new dentures and this is often reinforced during other denture maintenance appointments. There are different methods for denture hygiene that include mechanical, chemical and combination of both. Mechanical methods include soft tooth brush with hand soap over a bowl of water.^{9,13} Chemicals include vinegar, per borates, sodium hypochlorite, iodophors, alkylating agents etc.¹²

Takamiya et al., reported that once daily brushing and use of toothbrush and paste was the most common method for denture hygiene and 55% patients doesn't remove dentures at night.¹⁶

Avoidance of denture removing at night is another aspect for the cleanliness and hygiene of the denture and several studies have shown that

patient removing dentures at night show good oral health and denture maintenance and longevity.³ Overall denture soaking time at night also affects the denture hygiene and prevent plaque accumulation and therefore prevents any denture related diseases including denture stomatitis.¹⁵ These above mentioned results can be obtained by giving proper awareness on oral hygiene instructions.¹¹

The aim of this study is to evaluate the denture cleaning habits and methods used by the patients and to assess the denture hygiene in those patients visiting the prosthodontics department of tertiary care hospital.

Material and Methods:

This is descriptive cross sectional study conducted after approval from ethical committee at Islamic International Dental College, Islamabad. It was conducted on 100 partially and completely edentulous patients reporting to the prosthodontics department at tertiary care hospital over a period of six months from November 2019 to April 2020. Inclusion criteria included both male and female patients who have been using dentures for at least one year and were willing to participate and were in a good physical and mental attitude. Informed written consent was taken from every patient who was willing to participate in the study. A well-designed questionnaire was formulated in both English and Urdu language for the ease of the patients. The questionnaire form was used to access the knowledge of denture hygiene among patients wearing dentures, the different denture cleaning methods used and the frequency of practicing denture hygiene. The patient's demographic details and socio-economic status was also included in the study. Data was collected and analyzed using SPSS 23.

Results:

A total of 100 patients were part of the study as per the inclusion and exclusion criteria. Out of them, 53 were males and 47 were females. The correlation of denture hygiene with completely edentulous and partially dentate patients was found.

Table 2: Association of denture rinsing with water and mouthwash along with finger scrubbing in completely edentulous and partially dentate patients

	Finger scrubbing				Total
	Always	Sometimes	Rarely	Never	
Edentulous patient	20	18	7	4	49
partially edentulous patient	22	17	8	4	51
Total	42	35	15	8	100

Table 3: Association of denture rinsing with toothbrush without tooth paste in completely edentulous and partially edentulous patients

	Without toothpaste				Total
	Always	Sometimes	Rarely	Never	
Edentulous patient	20	17	9	3	49
Partially edentulous patient	18	21	8	4	51
Total	38	38	17	7	100

Table 4: Association of denture rinsing with toothbrush with toothpaste in completely edentulous and partially edentulous patients

	Without toothpaste				Total
	Always	Sometimes	Rarely	Never	
Edentulous patient	10	10	18	11	49
Partially edentulous patient	10	8	13	20	51
Total	20	18	31	31	100

Discussion:

Denture hygiene is important among complete and partial removable denture wearers for the denture longevity and wellbeing of patient's oral health. Proper denture hygiene and regular visit to the dentist is important for dentures success.¹

This study describes the patient's knowledge, attitude towards denture hygiene regimens. In this study 23% respondents reported that they had never been instructed about denture hygiene measures by their dentists which is in contrast to studies conducted by Peracini et al¹ and Dikbas et al⁶ which showed 51.89%, 82.9% respectively, were never advised about denture hygiene instructions. Another study was conducted by Thatapudi S et al³ in India and it was found that only 10.2% were not instructed.

Combinations of mechanical and chemical cleaning techniques are present for effective denture cleaning. Data from different studies suggests that the most effective method for denture hygiene is a combination of both mechanical and chemical means.⁴

Nikawa et al⁴ described that brushing being the most commonly performed denture hygiene practice, whereas denture rinsing is the most prevalent denture hygiene measure and it is recorded to be 68% according this study in contrast to the study conducted in Nigeria by tunde J et al² where the percentage is around 40%.

Denture cleaning through finger scrubbing is one of the most common methods in Pakistan due to the limited awareness and financial restraints. This study shows 42% of the subjects always use finger scrubbing along with denture rinsing being the most cost effective and easy method in contrast to the study in India by Thatapudiet al³ where only 19% patients used finger scrubbing.

Apart from finger scrubbing the other most mechanically used method is brushing. Brushing is a simple, in-expensive and effective method for the removal of denture biofilm. It quickly removes film, soft buildups from denture surfaces. And beyond its obvious benefits it also aids in chemical cleansing (denture soaking). However, some patients present restricted hand movement and may experience difficulties with this method. Another disadvantage is that the abrasive action could result in the wear of the denture base and relining materials.

In this study 38% patients used bushing only which is in contrast to study by Veres et al.¹⁷ in which 70% patients used brushing with tap water to clean their dentures.

Studies among complete denture wearers showed that most denture wearers have poor denture cleaning habits and poor oral hygiene.

Takamiya et al,¹⁶ reported that once daily brushing and use of toothbrush and paste was the most common method for denture hygiene.⁶ The reason for the common use of mechanical method could be attributed to the fact that many people employed toothbrush and paste for dental hygiene and could easily adopt this for care of their dentures as they transit from dentate to edentulous state which is most cost effective.¹³

This study showed that 20% subjects used dentifrice along with toothbrush in contrast to the study conducted by Peracini¹ and Tunde J² whereas, 84.91% and 53% were reported respectively whereas study conducted by CC Azodo et al⁵ showed that 86.2% respondents used toothbrush along with the toothpaste for denture cleaning.

Conclusion:

This study shows that the most commonly used denture cleaning method is rinsing with water. As this is the most cost effective and easy to use method for practicing denture hygiene.

Dentists should emphasize on denture cleanliness and denture cleaning methods to improve the oral health and dentures longevity.

Conflict of interest: none

Funding source: none

Role and contribution of authors:

Dr Sara Amir Khan, collected the data, referencens and did the initial write up.

Dr Sana Sultan, collected the data and helped in introduction writing.

Dr Muhammad Aamir Ghafoor Chaudhary, critically review the article and made the final changes

Dr Maleeha Majid, collected the data, references and helped in discussion writing.

Dr Hafsa Ijaz, collected the data, referenes and also helped in methodology and result writing.

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