

Assessment of Demographic Profile of Complete Denture Wearers and their Denture Hygiene Habits

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ABSTARCT

Objective: To evaluate the denture hygiene practices among elderly complete denture wearers.

Subject and Methods: A total of 210 denture wearers in age range of 40 to 80 years were recruited in the study. All the study subjects were interviewed regarding their complete denture in terms of wearing duration, cleaning frequency, cleaning methods, continuous wearing and instruction regarding its hygiene.

Results: Mean age of patients was 54.03+11.06 years, minimum 38 years and maximum 80 years. Males were found in majority 56.7% and females were 43.3%. Most of the cases i.e 38.1% wearing the denture form 1-3 years, followed by 29.0% wearing denture from less than 6 months. Around 53.3% were cleaning their denture once a day. Denture cleaning frequency and cleaning methods were statistically insignificant according to age and gender

Conclusion: Brushing with dentifrice and without dentifrice was the method of choice for cleaning. Awareness programs should be carried out regarding proper cleaning methods and its cleaning frequency and others.

Keywords: Denture Hygiene, Complete Denture Wearers, Habits.

INTRODUCTION

The WHO defines "Oral health as the capacity of a person to maintain, throughout life, at least 20 natural teeth that are functional, aesthetically pleasing, and do not require a prosthesis.¹ As the senior populace grows globally due to a rise in life longevity, there is an increased concern in their oral health condition. Ensuring oral health in old age, when changes in oral tissues are linked to a variety of illnesses, is becoming more and more important in dentistry.² Today dentistry is focused on a preventive approach, increasingly aimed at health promotion and education. As a result, patients experience greater tooth retention rates and improved oral health.³

There are several underlying causes of tooth loss, including dental caries, losing of periodontal support, a history of dentoalveolar trauma, a record of dental illness, etc. The incidence of tooth loss in any adult community is expected to increase as the population ages. As a result, the oldest age groups often have the greatest rates of total tooth loss.² Loss of teeth is linked to aesthetic, psychological, functional, and social effects on people, all of which have a noticeable detrimental impact on people's quality of life.^{1,4}

Complete dentures are the only & most common treatment for total loss of teeth in a dental arch⁵. Whole dentures are used to restore the entire set of lost teeth in the dental arch so as to return the aesthetic and functional conditions to the patient. Continuous use of these dentures must be accompanied by an efficient and systematic denture cleaning routine, which not only ensures denture effectiveness over the long run but also protects the wellbeing of the oral mucosa in the area. Care of dentures and the mucosal tissues of the edentulous mouth is essential for the overall health;⁶ any lacking in proper denture care practices is reported to be associated to a likelihood of emerging a assemble of difficulties vary from denture stomatitis, angular cheilitis and burning mouth syndrome to serious superimposed infections¹. The major purpose of cleaning the denture is to detach the plaque sticking to the denture that in turn to remove the source of denture stomatitis and lessen the presence of micro-organisms on the denture that has identified to serve by a reservoir of micro-organisms participating in systemic diseases such as aspiration pneumonia, endocarditis and diabetes^{7,8}. Dentists' and denture patients should become conscious of the fact that microbial plaque on dentures might be dangerous to the oral mucosa as well as the entire health. Therefore, it is the concern of the patient to maintain for oral hygiene by everyday home-based carefulness plan. Though,

denture wearers in compared to the dentate, take no notice of the significance of plaque control. It is the responsibility of the dentist to educate the denture wearers and provide the means and methods for plaque control. Dental professionals needed an ongoing understanding of denture cleansing strategies to build up the services given to their denture patients⁹. Dentists must prepare for periodic recalls to assess the effectiveness of oral and denture care habits and, if required, reinforce them. This will allow them to gauge the degree of awareness among denture users. The suggested study's objective was to gauge complete denture wearers' level of understanding and knowledge regarding denture hygiene maintenance in order to determine whether there was any correlation between this understanding and various demographic factors like age, gender, socioeconomic status, and schooling.

This study will raise awareness about denture cleanliness among the older populace, it will emphasize attention on the required for enhancement of patient education and counseling concerning continuity of dentures so as to uphold of denture hygiene. It will give value to the required for educating the patients and will empower them on how to assess themselves the position of their denture.

MATERIAL AND METHODS

This cross-sectional research used non-probability convenience sampling and was undertaken at the Liaquat University of Medical and Health Sciences at Jamshoro's Oral Diagnosis Outpatient Department. The study was carried out during June and July 2021. Rao Soft's sample size calculator used the percentage "prevalence of full dentures is 16.3 percent" to get the sample size.¹⁸ In this study sample contained of total 210 subjects in the age group of 40-80years.

Inclusion criteria:

- Age (>40 Years)
- Gender (both males and females)
- Those who are using complete dentures for more than 6 months.

Exclusion criteria:

- Those who are not keen to participate in the study.
- Implant supported complete denture wearer
- Selfcured (simplex) made complete denture

Data collection tool: All the study subjects were interviewed regarding their complete denture in terms of wearing duration, cleaning frequency, cleaning methods, continuous wearing and

instruction regarding its hygiene. All the data was collected via study proforma including questioner.

Data analysis plan: Data was analyzed by SPSS version 20.0. Frequency and percentage were used for categorical variables like (gender, residential status, method of cleaning denture, awareness about cleaning denture). Mean and standard deviation was used for continuous variables like age etc. Chi- square test was applied and a p-value <0.05 was considered as significant.

Ethical considerations: The project was started with the approval of the supervisor and other competent authorities of LUMHS. Informed consent was taken from the subjects before commencement of the project. The data recorded was kept confidential and no one except the concerned investigators be allowed to access the data. During data collection, the queries regarding hygiene of denture from subjects were addressed properly.

RESULTS

Total 210 individuals were studied; mean age of patients was 54.03+11.06 years, minimum 38 years and maximum 80 years. Fig.1

Males were found in majority 56.7% and females were 43.3%. Most of the patients 67.1% were resident of urban areas and 32.9% were from rural areas. Out of all 79.5% cases were non-employee and only 20.55 were government employee. Table.1

In this study most of the cases i.e 38.1% wearing the denture form 1-3 years, followed by 29.0% wearing denture from less than 6 months, 23.3% wearing from 3 to 5 years and 9.5% wearing it from >5 years. According to cleaning frequency 53.3% were cleaning their denture once a day and 43.8% were cleaning twice a day, while 2.9% were not cleaning. According to cleaning methods 34.8% were cleaning with brush with dentifrice and 32.4% were leaning by brush without dentifrice, 9.5% with soak in effervescent, 17.1% with soak in water and remaining with other things. Out of all 72.4% has been instructed on how to clean your denture and mostly by dentists. Table .2

In this study denture cleaning frequency and cleaning methods were statistically insignificant according to age and gender, p-values were quite insignificant. Table 3 & 4

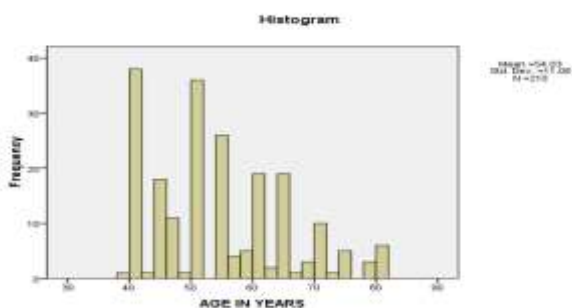


Fig.1: Descriptive statistics of age n=210

Table 1: Patients distribution according to gender, residence and occupation n=210

Variables	Frequency	Percent	
Gender	Male	119	56.7
	Female	91	43.3
	Total	210	100.0
Residential status	Urban	141	67.1
	Rural	69	32.9
	Total	210	100.0
Occupation	Govt. Employee	43	20.5
	Non Govt. Employee	167	79.5
	Total	210	100.0

Table.2 Denture hygiene habits n=210

Questions regarding hygiene	Frequency	Percent	
How long have you been wearing denture?	> 6 months	61	29.0
	1-3 years	80	38.1
	3-5 years	49	23.3
	> 5 years	20	09.5
How many times do you clean your denture per day?	No Cleaning	06	02.9
	Once daily	112	53.3
	Twice daily	92	43.8
How do you clean your denture?	No cleaning	10	4.8
	Brush without dentifrice	68	32.4
	Soak in other Solution	01	0.5
	Brush with dentifrice	73	34.8
	Soak in effervescent	01	0.5
	Brush with water and soap	20	9.5
Have you ever been instructed on how to clean your denture	No Cleaning	36	17.1
	Others	01	0.5
	Yes	152	72.4
	No	58	27.6
	Who instructed you?	A dentist at another time	139
Other healthcare professional		3	1.4
Friends/relatives		7	3.3
Other		61	29.0
What were you instructed to do?	Brush without dentifrice	12	5.7
	Do not wear denture overnight	124	59.0
	Use a denture brush	11	5.2
	No instructions	63	30.0
Do you wear your denture overnight?	No, the denture hurts me	21	10.0
	Yes, i do not think it is necessary to remove it	34	16.2
	Yes, i feel uncomfortable when i am not wearing it	20	9.5
	No, i was instructed to remove it	111	52.9
	Yes, i don't remove it because i don't want anyone seeing me without the denture	14	6.7
	No, i remove it because the denture doesn't fit	10	4.8

Table 3: Denture cleaning frequency according to age and gender

Variables	How many times do you clean your denture per day?			p-value	
	No Cleaning	once daily	twice daily		
Age groups	40-50 years	3	51	51	0.256
	51-60 years	1	28	26	
	>60 years	2	33	15	
Gender	Male	1	70	48	0.065
	Female	5	42	44	

Table 4: Denture cleaning methods according to age and gender

Variables		How do you clean your denture?								p-value
		No cleaning	Brush without dentifrice	Soak in other Solution	Brush with dentifrice	Soak in effervescent	Brush with water and soap	Soak in water	Others	
Age groups	40-50 years	6	33	0	40	0	10	16	0	0.133
	51-60 years	1	24	0	12	0	7	10	1	
	>60 years	3	11	1	21	1	3	10	0	
Gender	Male	4	35	1	46	1	12	19	1	0.557
	Female	6	33	0	27	0	8	17	0	

DISCUSSION

Continuous use of dentures requires regular hygiene maintenance, a task which is often neglected by the patients. In this study mean age of patients was 54.03±11.06 years, minimum 38 years and maximum 80 years. Similarly Haider A et al¹⁰ reported that the age range was from 45 to 75 years, the most common age group was 51-60 years (44%). However Peracini A et al¹¹ reported that the mean age of patients was 63.35 years.

In this study males were found in majority 56.7% and females were 43.3%. Consistently Haider A et al¹⁰ reported that in their study 31(62%) were males and 19 (38%) were females. Inconsistently Peracini A et al¹¹ reported that the most of individuals were females (82.08%).

In this study most of the case 38.1% wearing the denture form 1-3 years, followed by 29.0% wearing denture from less than 6 months, 23.3% wearing from 3 to 5 years and 9.5% wearing it from >5 years. According to Peracini A et al¹¹, even so, 62.26 % of the survey participants had been utilising the relatively similar upper complete denture for over five years, 49.06 % had been using the same lower complete denture for over five years, and 24.53 % and 16.04 % had been utilising the same upper and lower dentures, respectively, for more than 20 years. Additionally, Coelho et al discovered that the majority of individuals kept their dentures for 20 years.

In this study according to cleaning frequency 53.3% were cleaning their denture once a day and 43.8% were cleaning twice a day, while 2.9% were not cleaning. Similarly, Peracini A et al¹¹ reported that 73.58% of patients cleaned their dentures 3 or more times daily.

In this study according to cleaning methods 34.8% were cleaning with brush with dentifrice and 32.4% were leaning by brush without dentifrice, 9.5% with soak in effervescent, 17.1% with soak in water and remaining with other things. On other hand Roshene R et al⁷ reported that maximum number of the subjects cleaned their dentures with just water and a toothbrush (74%). These value were significantly high than the reported by Apratim et al.¹² and lower than that reported by Patel et al¹³ in Ahmadabad. Shigli K et al¹⁴ observed that the all the cases answered as they cleaning their prostheses daily; 94.7% patients hired a tooth brush, 5.3% used denture brush and 3.6% used denture cleansers. A mixture of techniques (brushing and soaking) was utilised more often, according to Hoad-Reddick et al.¹⁵ Veres et al¹⁶ discovered that 59% of participants cleaned and soaked their dentures, compared to 36% who only used a brush, and 5% who just used immersing to clean their dentures. Patients' use of their dentures throughout the day may cause biofilm to accumulation on their surface.¹¹ As a result, denture-induced stomatitis, which includes biofilm as its primary etiological cause, is more common due to continued use. Denture stomatitis was more common in patients who wore their dentures constantly (day and night), by Zissis et al.¹⁷ The same results were reported by Peracini A et al¹¹ who found that showed that 58.49% of the patients usually slept with their dentures.

In this study denture cleaning frequency and cleaning methods were statistically insignificant according to age and gender; p-values were quite insignificant. However, no such findings were found in the literature. This increase in life expectancy is due to improvements in medical facilities and the

dental needs of this population require special attention. The denture needs to be properly cared for by the patient, thereby contributing to the health of the underlying area, supporting the tissue and taking steps to ensure successful treatment. Ignored dentures not only represent a patient's lack of knowledge, but also a potential lack of dentist motivation.¹⁴

CONCLUSION

It is concluded that the interviewed patients had limited knowledge regarding denture cleansing and oral hygiene. Brushing with dentifrice and without dentifrice was the method of choice for cleaning; most of the patient were using the same complete dentures 1 to 3 years, and were used to sleep with the dentures. Awareness programs should be done regarding proper cleaning methods and its cleaning frequency and others.

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