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RESEARCH ARTICLE

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EVALUATION OF COMPLETE DENTURE HYGIENE AND NOCTURNAL WEARING HABITS AMONG PATIENTS REPORTING TO PGIDS ROHTAK: AN IN-VIVO STUDY

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ABSTRACT

This is an in-vivo research conducted in the denture wearing population at PGIDS, Rohtak. The patients evaluated on their methods and frequency of oral and denture hygiene and their nocturnal denture wearing habits.

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INTRODUCTION

Life expectancy has increased over the past years, and the number of elderly requiring dentures has also increased.¹⁻³ Successful complete denture treatment can be achieved when the patients are motivated and aware of appropriate denture wear and hygiene. An essential component of complete denture service is patient education about denture hygiene. It is important that patients return regularly for oral health maintenance and evaluation of their dentures.⁴ Efficient and regular procedures for cleaning complete dentures are important for maintaining good oral health and greater longevity of the prosthesis.⁵ To minimize the prevalence of denture stomatitis, the dentist must instruct the patient in removing completed dentures 6 to 8 h per day.⁶ However, surveys have reported that complete denture wearers have difficulty in cleaning their dentures^{7, 8}, and so preventive programs are effective in promoting good oral health. Patients do not return to the dentist for control and maintenance of their dentures generally at the appropriate intervals.⁹ Thus, it is up to the dentist to guide their patients properly about proper denture cleaning and the appropriate products to be used.

Aims and Objectives: To evaluate complete denture hygiene and nocturnal wearing habits among the patients reporting to PGIDS, Rohtak.

MATERIALS AND METHODS

The study was conducted in patients reporting to the out-patient department (O.P.D) of dept. of Prosthodontics, Post Graduate Institute of Dental Science (PGIDS), Rohtak.

Inclusion Criteria: Patients who were already denture wearers at the time of reporting to the dept. of Prosthodontics, PGIDS Rohtak.

Exclusion Criteria: Patients reporting for complete dentures being made for the first time. 210 patients of both genders were asked questions by the clinician regarding the denture wearing and denture hygiene habits and the nocturnal wearing habits of their current dentures. This information was used to fill out a questionnaire (Figure 1) for each patient. The obtained data was statistically evaluated using chi-square test to draw conclusions.

Subject No.....Date.....
 Name..... Age.....years.....Gender.....
 OPD No.....Prosth. No.....
 Address.....
 Contact No.....

Questionnaire

Subject No.....Date.....
 Profession.....Education.....

HISTORY OF DENTURE(S)

- How long have you had your teeth extracted?.....
- How long have you been using denture(s)?
 A.Upper..... Lower.....
- How long have you been using the current denture(s)?
 A.Upper..... Lower.....

HYGIENE

- Have you received any instruction from your dentist on how to clean your denture(s)?
 A. Yes () B. No ()
- How do you clean your denture (s)?
 A. Do not clean ()
 B. Water + toothbrush ()
 C. Water and dentifrice + toothbrush ()
 D. Water and soap + toothbrush ()
 E. Any other method
- How often, a day do you clean your denture (s)?.....
- Do you have any difficulty cleaning the dentures? A. Yes () B. No ()
 Which part of it?
- Do you soak your denture in any substance? A. Yes () B. No ()
 Which?.....
- Do you brush:-
 A. The roof of mouth (palate) ()
 B. Tongue ()
 C. Gum (ridge) ()
- Do you use oral rinse? A. Yes () B. No ()
 How?.....
- Do you sleep with the denture(s)? A. Yes () B. No ()

Figure 1. Questionnaire

RESULTS

90 patients (42.86%) were male and 120 patients (57.14%) were female.

Table 1. Distribution of patients according to time of edentulousness (in years) for each gender

Gender	1-5	6-10	11-15	16-20	>20
Males	8	14	34	19	15
Females	11	22	30	25	32
Total	19	36	64	44	47

Table 1 shows the distribution of patients according to time of edentulousness (in years) for each gender and it was found that 1.9% patients were edentulous for less than a year, 7.1% patients were edentulous in range of 1-5 years, 17.1% patients for 6-10 years, 30.5% patients for 11-15 years, 21.0% patients for 16-20 years, and 22.4% patients for more than 20 years. The difference between males and females was not statistically significant (p=0.316). [FIGURE 2]

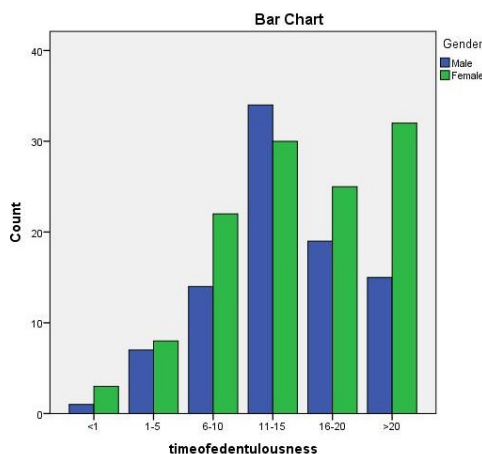


Figure 2. Period of edentulousness

Table 2. Distribution of patients according to time of use (in years) of complete dentures, for each gender

a. Maxillary complete denture use

Gender	<1	1-5	6-10	11-15	16-20	>20
Males	1	7	14	34	19	15
Females	3	8	22	30	25	32
Total	4	15	36	64	44	47

b. Mandibular complete denture use

Gender	<1	1-5	6-10	11-15	16-20	>20
Males	1	7	14	34	19	15
Females	3	8	22	30	25	32
Total	4	15	36	64	44	47

Table 2 shows the distribution of patients according to time of use (in years) of complete dentures, for each gender and it was found that 1.9% patients were using complete dentures since less than a year. 7.1% patients were using dentures for 1-5 years, 17.1% patients were using it for 6-10 years, 30.5% patients were using it for 11-15 years, 21.0% patients were using for 16-20 years and 22.4% patients were using their dentures for more than 20 years. The difference between males and females was not statistically significant (p=0.316). [Figure 3]

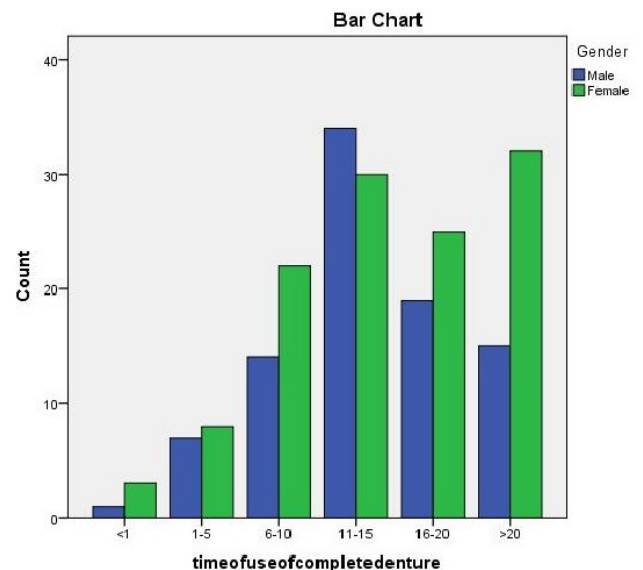


Figure 3. Time of use of complete denture

Table 3. Distribution of patients according to the age (in years) of current complete dentures, for each gender

a. Maxillary complete denture use

Gender	<1	1-5	6-10	11-15	16-20	>20
Males	1	59	22	7	1	0
Females	3	65	32	11	5	4
Total	4	124	54	18	6	4

b. Mandibular complete denture use

Gender	<1	1-5	6-10	11-15	16-20	>20
Males	1	59	22	7	1	0
Females	3	65	32	11	5	4
Total	4	124	54	18	6	4

Table 3 shows the distribution of patients according to time of use (in years) of current complete dentures, for each gender and it was found that 1.9% patients were using their current dentures since less than a year. 59% patients were using their current dentures for 1-5 years, 25.7% patients were using it for 6-10 years, 8.6% patients were using it for 11-15 years, 2.9% patients were using for 16-20 years and only 1.9% patients were using their current dentures for more than 20

years. The difference between males and females was not statistically significant ($p=0.257$). [Figure 4]

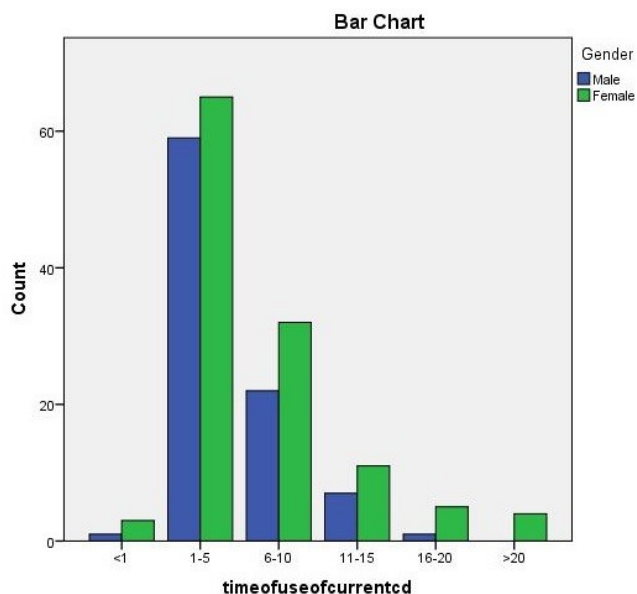


Figure 4. Time of use of current complete denture

Table 4. Distribution of patients according to instructions provided by the dentist on complete denture hygiene, or each gender

Gender	Received instructions by dentist	Did not receive instructions	Total
Males	63	27	90
Females	89	31	120
Total	152	58	210

Table 4 shows the distribution of patients according to instructions provided by the dentist on complete denture hygiene, for each gender and it was found that 72.4% patients received instructions by their dentist on complete denture hygiene while 27.6% patients did not receive any instructions on complete denture hygiene by their corresponding dentists. The difference between males and females was not statistically significant ($p=0.504$). [Figure 5]

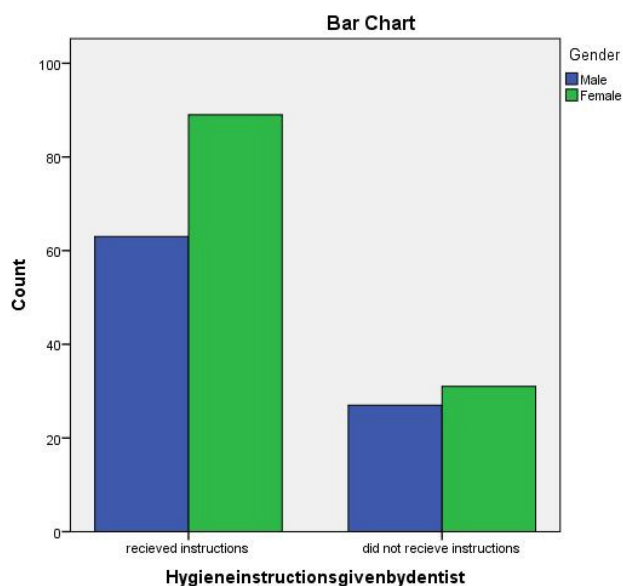


Figure 5. Hygiene instructions by the dentist

Table 5. Distribution of patients according to the method of denture cleaning used by the patient, for each gender

Method of denture cleaning used by the patient	Males	Females	Total
Do not clean	2	0	2
Water + toothbrush	6	7	13
Water + dentifrice + toothbrush	27	47	74
Water + soap + toothbrush	55	66	121
Any other method	0	0	0

Table 5 shows the distribution of patients according to the method of denture cleaning used by the patient, for each gender and it was found that 1.0% patients did not clean their dentures at all. 6.2% patients used just water and toothbrush for cleaning the dentures. 35.2% patients used water and dentifrice and toothbrush for cleaning the dentures. Maximum number of patients (57.6%) used water and soap and toothbrush for cleaning the dentures. None of the patients used any other method of denture hygiene. The difference between males and females was not statistically significant ($p=0.232$). [Figure 6].

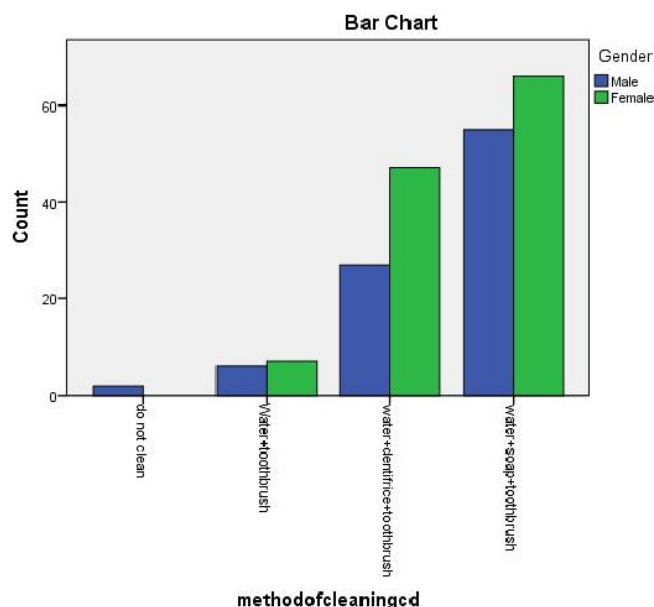


Figure 6. Method of cleaning of denture

Table 6. Distribution of patients according to the frequency of cleaning of dentures, for each gender

Gender	Do not clean	Once daily	Twice daily	Thrice daily	>3 times daily	Total
Males	2	68	18	2	0	90
Females	0	88	22	10	0	120
Total	2	156	40	12	0	210

Table 6 shows the distribution of patients according to the frequency of cleaning of dentures, for each gender and it was found that 1.0% patients did not clean their dentures at all while the majority of patients (73.8%) cleaned their dentures once daily. 19.5% patients cleaned their dentures twice daily and there were few patients (5.7%) who cleaned their dentures thrice daily. None of the patients were cleaning their dentures more than thrice daily. The difference between males and females was not statistically significant ($p=0.101$). [Figure 7].

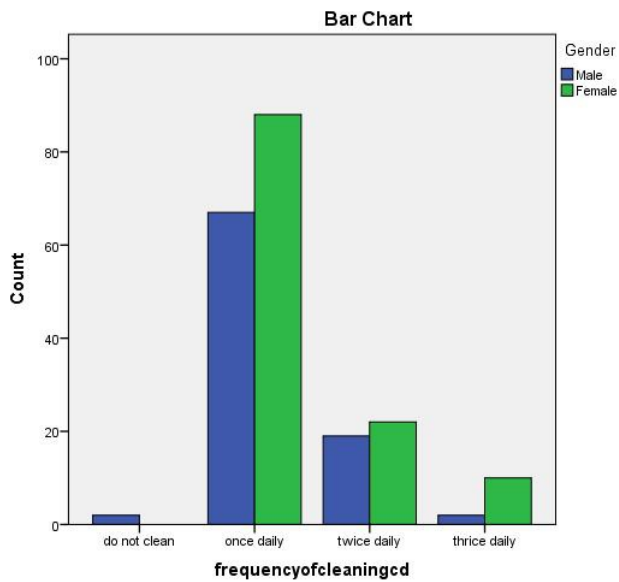


Figure 7. Frequency of cleaning of denture

Table 7. Distribution of patients who cleaned regions of the oral cavity, for each gender

Gender	Regions of oral cavity		
	The roof of mouth (palate)	Tongue	Gum (ridge)
Males	12	73	59
Females	15	90	64
Total	27	163	123

Table 7 shows the distribution of patients who cleaned regions of the oral cavity, for each gender and it was found that 12.9% patients cleaned their roof of mouth and 77.6% patients cleaned their tongue while only 9.5% patients cleaned their gums. The difference between males and females was not statistically significant ($p=0.237$). [Figure 8].

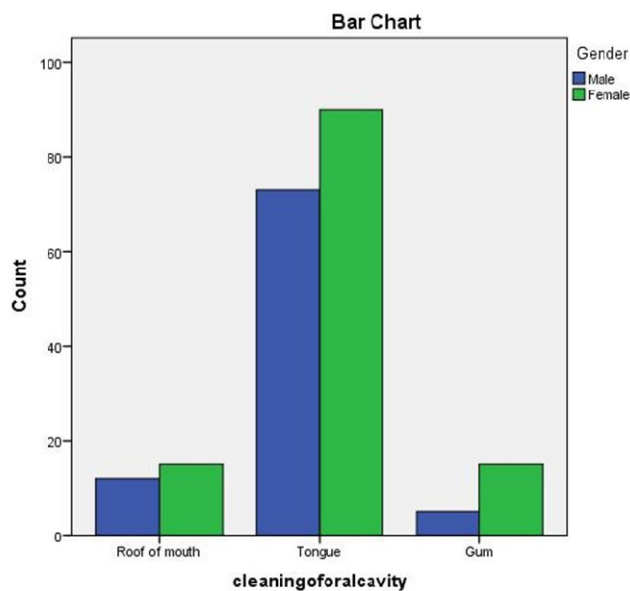


Figure 8. Cleaning of oral cavity

Table 8. Distribution of patients according to the use of oral rinse, for each gender

Gender	Did not use oral rinse	Used oral rinse
Males	88	2
Females	111	9
Total	199	11

Table 8 shows the distribution of patients according to the use of oral rinse, for each gender and it was found that most of the patients (94.8%) did not use any kind of oral rinse while only 5.2% patients were using oral rinse. The difference between males and females was not statistically significant ($p=0.089$). [Figure 9]

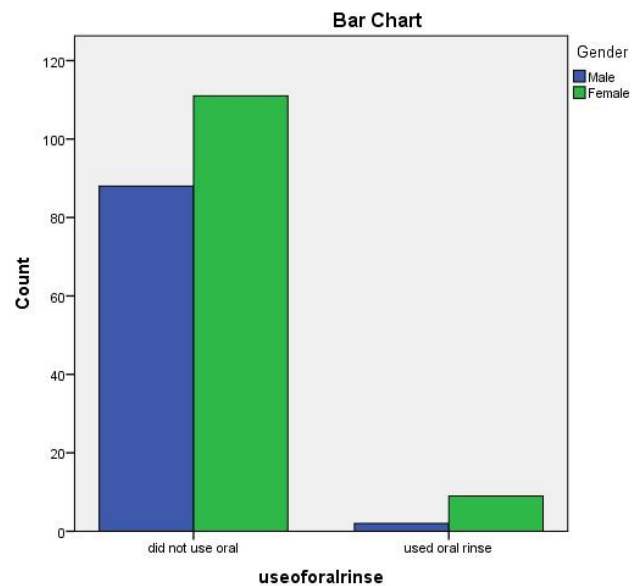


Figure 9. Use of oral rinse

Table 9. Distribution of patients according to the use of dentures while sleeping, for each gender

Gender	Did not wear dentures while sleeping	Wore dentures while sleeping
Males	54	36
Females	88	32
Total	142	68

Table 9 shows the distribution of patients according to the use of dentures while sleeping, for each gender and it was found that most of the patients (67.6%) did not sleep with the dentures and removed their dentures at night while 32.4% patients were wearing their dentures while sleeping also. The difference between males and females was statistically significant ($p=0.041$) [Figure 10].

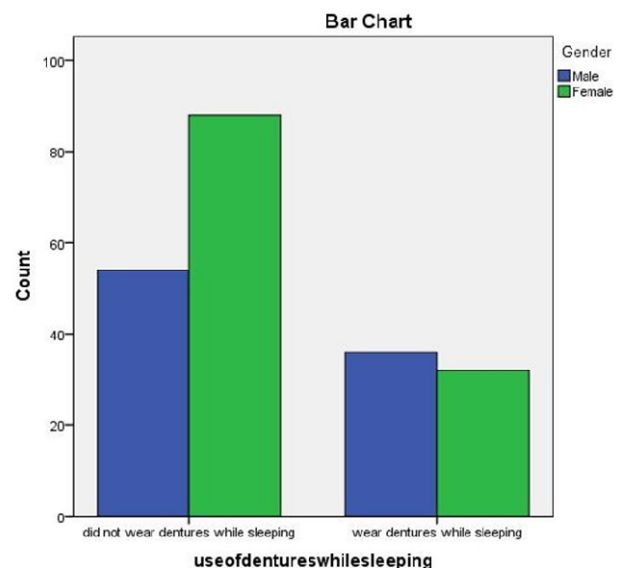


Figure 10. Use of dentures while sleeping

DISCUSSION

Poor denture hygiene has a negative impact on the elderly and is an important public health issue.^{2,3} The results showed that 32.4% patients (52.9% males and 47.1% females) were wearing their dentures at night during sleep which is less than that reported by Parizi MT et al (55.1%)¹⁰, de Castellucci Barbosa et al (64%)¹⁴ and Peracini et al. (58.49%)⁴. A significant association was found between denture stomatitis and use of denture overnight by Sadig¹¹. In the present study there was no correlation between gender and denture hygiene; however, females' dentures were cleaner. This is not in accordance with the study by Baran and Nalcaci, who found a significant correlation between sex and denture hygiene.¹ Majority of the patients (73.8%) were cleaning their dentures once daily while 19.5% patients were using denture hygiene measures twice daily only 5.7 patients cleaned their dentures three times a day. Most of the patients (72.4%) reported that they had received the denture hygiene instructions from their previous dentist while 27.6% patients had not received any instructions for cleaning of dentures from their dentist. This is not in accordance with the study by Parizi MT et al who found that 60.4% had not received the denture hygiene instructions¹⁰. Therefore it is necessary that dentists should always give instructions on denture hygiene and oral hygiene to the denture wearers. Most commonly used method of denture hygiene by the patients in this study was water and soap and toothbrush (used by 57.6% patients) which is in accordance with the studies by the studies by Baran and Nalcaci, and Khasawneh and al-Wahadni who reported that most patients cleaned their dentures with a toothbrush.^{1, 16} The current complete denture of 59.0% patients was less than 5 years old while 25.7% patients were using the current denture for 6-10 years. There were few patients (1.9%) who were using the same denture for more than 20 years and 2.9% patients using the same denture for 16-20 years.

CONCLUSION

Based on the present study, following conclusions were drawn

1. Most of the patients were cleaning their dentures once daily.
2. Most of the patients had received instructions on denture hygiene by their previous dentist.
3. Most commonly used method for denture hygiene by patients was water and soap and toothbrush.
4. There was no significant difference denture hygiene by males and females.

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