



A Survey of Complete Denture Patients Experiencing Difficulties with their Prostheses

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ABSTRACT

Objective: The objective of this study was to investigate the problems faced by patients having complete dentures and the cleanliness of dentures by the patients.

Materials and methods: This cross-sectional study is done with a sample of 178 patients having complete prosthesis since 1 year. A self-administered structured questionnaire pretested through a pilot survey was used in the study. The data were analyzed using the SPSS version 16.0. The Student's t-test, ANOVA and post hoc test were used as test of significance.

Results: Mastication discomfort and looseness of denture were the most common complaints followed by lack of retention (35.4%), bad breath (29.8%), tongue restriction (26.4%) and food accumulation (24.7%). There was a significant relationship of complaints with age groups ($p = 0.00$).

Clinical significance: This study concluded that most of the patients were present with complaints due to dentures. So, dental professionals should pay serious attention to their patients for subjective acceptable result of the dentures and also advice them to properly maintain hygiene of dentures.

Keywords: Complete denture, Complains, Satisfaction, Patients.

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INTRODUCTION

Edentulism occurs in about one-tenth to one-fifth of the general population in about half of the population over age 65. Loss of natural teeth has a significant impact on appearance and function. According to the World Health Organization (WHO) Global Oral Data Bank, the prevalence of edentulism older than 65 years was shown as 58% in Canada, 41% in Finland and 46% in the United Kingdom.¹

Dental prosthetics are an important part of dentistry because patients lose their teeth for different reasons and want to replace them by prostheses. Quality of a denture depends upon a number of factors such as retention, stability, fit, vertical dimension, occlusion, esthetics, accumulation of food under denture, speech, difficulty in chewing, etc. Often there is not a total agreement between the patient and the dentist in assessing the adequacy of dentures and this differing perception of patients' needs makes management more difficult. A dentist should be aware of the factors that lead to treatment failure.²

The wearing of a new complete denture may be associated with some complaints especially shortly after the insertion of the denture. The complaints may be lack of retention and stability, pain or discomfort, accumulation of food under the denture, altered speech, difficulty in chewing, unsatisfactory appearance and retching.³ Other complaints are bone resorption in edentulous alveolar ridges and sometimes overgrowth of tissue under denture which is caused by the forces generated by the mandible, during function and parafunction as the mucosa is sandwiched between the denture base and the underlying bone and hence all the forces are transmitted through this atrophic tissue.⁴

Pain or discomfort was reported by some researchers as the most common complaint among new denture wearers.⁵ Psychological factors should be considered in denture patients which shows the ability of the patient to adapt to the new dentures.⁶ Debilitating diseases and medication in older patients have an effect on the tolerance to wearing of complete dentures in many edentulous individuals. Therefore, an accurate medical history is important. The purpose of this study was to examine complete denture patients experiencing difficulties with their prostheses and to determine the most frequent complaints.

MATERIALS AND METHODS

A total of 178 complete denture wearers consisting of 96 males and 82 females, within the age group of 45 to 75 years were examined in the Department of Prosthodontics.

Inclusion criteria: Those who have been wearing dentures for at least 1 year.

Exclusion criteria: Those who were suffering from chronic or debilitating conditions such as diabetes.

Investigation: A self-structured questionnaire pretested through pilot study was designed to know the complaints of patients regarding dentures. The various complaints were presented by patients such as: pain while inserting or removing the dentures, difficulties in masticating their food, loose dentures, food accumulation around or under the prosthesis, discomfort in speaking, bad breath, ulceration, presence of infection, restricted space for tongue, retention errors incorporated with base design (underextension or overextension of denture bases in the maxilla and/or mandible), poor tissue contact (observed in mandibular bases only or both mandibular and maxillary bases), and inadequacies in the posterior palatal seal. Questionnaire was also designed to know the cleaning of dentures and denture wearing during sleep.

The necessary adjustments were performed at the end to eliminate any problems. The results of the clinical evaluation were then compared with the patient's complaints.

Data analysis: For data analysis, each right answer was given a score '1' and each wrong answer was assigned score '0'. Individual scores were summed up to yield a total score. Data was analyzed using SPSS version 17.0. Descriptive statistics were obtained and frequency distribution, means, standard deviation were calculated. Student's t-test was used to find the significance of difference in the means scores in relation to gender. One-way ANOVA and post hoc test was used to find the significance of difference of mean scores in relation to different age groups. Statistical significance for all tests was accepted at $p < 0.05$.

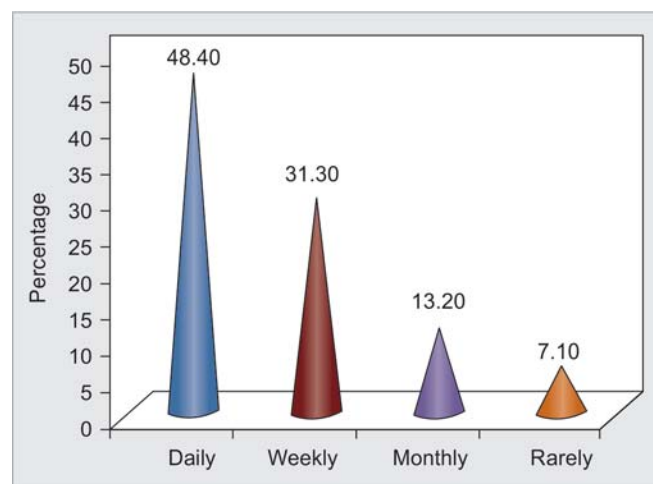
RESULTS

The total study population was 178 which is divided into different age groups as group 1 = 45 to 54 years (27.5%), group 2 = 55 to 64 years (53.3%) and group 3 = ≥ 65 years (19.2%) with mean age of 64.8 years.

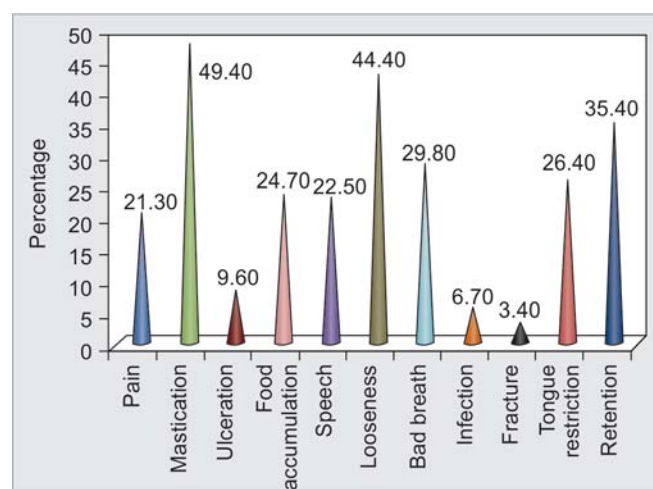
When it was asked regarding cleanliness of dentures around half of them had the habit of daily cleaning but rest do it weekly, monthly and rarely (Graph 1). According to different types of complaints faced by participants in this

study, it was observed that the most common problem faced was mastication (49.4%) followed by looseness of dentures (44.4%) and retention (35.4%). Around 21.3% patients complained of pain while wearing dentures; ulcers underneath the dentures were seen among 9.6% subjects; 24.7% complained about food accumulating around or under their prosthesis; 22.5% stated that people cannot understand them while they are speaking. A total of 29.8% patients said they have bad breath. Few subjects have infections due to prosthesis and fracture of dentures was rarely seen. A total of 26.4% participants mentioned that they have restricted space for tongue (Graph 2).

In the present study, less than half of the participants, i.e. 48% were having the habit of removing dentures during sleep. The results showed that females were having more complaints of dentures than their counter parts, as shown in Table 1. A significant increase in the number of complaints was seen with age groups ($p = 0.00$) (Table 2). Similarly, significant values were obtained in the mean difference of all age groups as group 3 were having more problems followed by groups 2 and 1 respectively (Table 3).



Graph 1: Frequency of cleaning of dentures among study population



Graph 2: Complaints faced by patients due to dentures

Table 1: Mean scores of denture problems according to gender using Student's t-test

Sex	No.	Mean	SD	p-value
Male	98	2.15	1.410	0.958**
Female	80	2.19	1.478	

Table 2: Mean scores of denture problems according to age groups using ANOVA test

Age groups	No.	Mean	SD	F-value	p-value
45 to 54 years	49	1.57	1.000	10.585	0.000*
55 to 64 years	95	2.19	1.170		
≥65 years	34	2.97	2.125		

Table 3: Mean difference between different age groups using post hoc test

Age (I)	Age (J)	Mean difference (I-J)	Std. error	p-value
Group 1	Group 2	-0.618	0.240	0.038*
	Group 3	-1.399	0.304	0.000*
Group 2	Group 1	0.618	0.240	0.038*
	Group 3	-0.781	0.273	0.018*
Group 3	Group 1	1.399	0.304	0.000*
	Group 2	0.781	0.273	0.018*

Group 1 = 45 to 54 years, group 2 = 55 to 64 years and group 3 ≥ 65 years

DISCUSSION

The wearing of a new complete denture may be associated with some complaints especially shortly after the insertion of the denture. The complaints may be lack of looseness, pain or discomfort, mastication problems, food accumulation, altered speech, bad breath, etc.³

The results of this study showed that most of the patients were complaining of mastication discomfort or pain and looseness of dentures. The present results were lower than other studies done by Smith and Hughes (1988). This might be due to that the mean age of study population in the present study was lower than that of Smith and Hughes study⁷ and Brunello et al in 1998⁸ whereas the problems were more than that of Ogunrinde and Dosumu study in 2012.⁵

The frequency of fracture of denture was very few when compared to other studies such as Khasawneh and Arab (2003),⁹ Darbar et al in 1994.¹⁰ Poor fit was the main cause in these studies, so movement of denture during mastication will cause fracture due to series of small loadings.

Around 22.5% of patients complained of difficulties in speech and the findings were similar to Aghdaee et al study in 2007.² It may be due to the overextension of the upper dentures onto the soft palate which generally results in speech difficulties.

Loss of retention of dentures was also commonly seen in this study which is in agreement with previous reports.^{1,11,12} Additionally, loss of retention caused

dissatisfaction of patients related to function. The loss of retention of the dentures may have impaired the patients' ability to chew.

Food accumulation was noticed in 24.7% of subjects which was in contrast to the study done by Aghdaee et al in 2007² in which food accumulation was seen in 80% of patients. The reason behind this could be that frequency of loose denture cases in that study was more than the present one. So looseness of dentures leads to accumulation of food. A significant relationship was observed between the presence of denture retention problems and complaints of loose dentures as well as difficulties in mastication. These results corroborate with those of Smith and Hughes, who observed same problems in denture base extension and generally poor retention.⁷ Bad breath was also a common finding in this study because only half of the subjects, i.e. 48% were having the habit of removing dentures during sleep and some people rarely clean their dentures.

There was no significant relationship between gender and the number of complaints contrary to the reports of Ogunrinde and Dosumu study in 2012⁵ and Powter and Cleaton-Jones.¹³

CONCLUSION

Mastication was the most frequent complaint among complete denture wearers in the present study and the common cause of complaints was looseness and retention. A significant correlation was seen with age groups but not with gender. This study suggested that complete denture patients present with complaints most often when there are denture faults. So, dental professionals should pay serious attention to their patients for subjective acceptable result of the dentures.

REFERENCES

1. Bilhan H, Erdogan O, Ergin S, Celik M, Ates G, Geckili O. Complication rates and patient satisfaction with removable dentures. *J Adv Prosthodont* 2012 May;4(2):109-115.
2. Aghdaee NA, Rostamkhanib F, Ahmadi M. Complications of complete dentures made in the Mashhad Dental School. *J Mashhad Dent School, Mashhad Univ Med Sci* 2007;31(Special Issue):1-3.
3. Laurina L, Sobolever U. Construction faults associated with complete denture wearers' complaints. *Stomatologija* 2006;8(2):61-64.
4. Tyson KW, McCord JF. Chairside options for the treatment of complete denture problems associated with the atrophic (flat) mandibular ridge. *Brith Dent J* 2000 Jan;188(4):10-14.
5. Ogunrinde TJ, Dosumu OO. The influence of demographic factors and medical conditions on patients complaints with complete dentures. *Ann Ibd Pg Med* 2012;10(2):16-21.
6. Bliss CH. Psychologic factors involved in presenting denture service. *J Prosthet Dent* 1951 Jan-Mar;1(1-2):49-63.

7. Smith JP, Hughes D. A survey of referred patients experiencing problems with complete dentures. *J Prosthet Dent* 1988 Nov;60(5):583-586.
8. Brunello DL, Mandikos MN. Construction faults, age, gender and relative medical health: factors associated with complaints in complete denture patients. *J Prosthet Dent* 1998 May; 79(5):545-554.
9. Khasawneh SF, Arab JM. A clinical study of complete denture fracture at four military hospital in Jordan. *JRMS* 2003 Dec;10(2):27-31.
10. Darbar UR, Huggett R, Harrison A. Denture fracture—a survey. *Br Dent J* 1994 May;176(9):342-345.
11. Petersen PE, Yamamoto T. Improving the oral health of older people: the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol* 2005 Apr;33(2):81-92.
12. Hobkirk JA, Abdel-Latif HH, Howlett J, Welfare R, Moles DR. Prosthetic treatment time and satisfaction of edentulous patients treated with conventional or implant-supported complete mandibular dentures: a case-control study (part 1). *Int J Prosthodont* 2008 Nov-Dec;21(6):489-495.
13. Powter G, Cleaton-Jones P. Quantitative assessment of some factors governing complete denture success. *J Dent Assoc S Afr* 1980 Jan;35(1):5-8.

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