Research Article

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A Questionnaire Based Assessment and Evaluation of Complete Denture Hygiene and Maintenance Habits In Elderly Patients: A Cross Sectional Study

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ABSTRACT

Background: This study was performed to assess the complete denture hygiene and maintenance habits among elderly patients of north Indian region.

Materials & Methods: This study was completed in the department of Prosthodontics of the institute. A total 100 patients were studied for whom complete dentures were fabricated in the concerned year by departmental staff post graduate students, interns and under graduate students. All studied patients were chosen from the department of Prosthodontics of the institute. Questions related to the complete denture hygiene and maintenance habits were framed. This set has comprised of 7 questions regarding cleansing methods, frequencies of cleaning, denture cleaning materials and other parameters. Patients were asked to complete the questionnaire and to respond genuinely.

Results: Approximately 58 patients were agreed that they are cleaning their complete dentures. 23 patients agreed that they clean it by brushing with water. 7 patients use clean it by brushing with soap. 11 patients clean it by brushing with tooth paste. 6 patients clean it by soaking in cleansing tablet solution. 4 patients clean it by soaking in mouthwashes. 7 patients use some other indigenous form of cleaning the denture.

Conclusion: The overall inferences were very crucial as they were having intricate clinical applicability. Authors found that the relative condition of complete denture hygiene and maintenance was at moderate level. Authors also noticed that majority of the studied patients were cleanout their denture by regular brush with water (n=23). However, few of the patients were rarely cleaning their complete dentures judiciously.

Keywords: Complete Denture Hygiene, Oral health, Oral hygiene practices.

INTRODUCTION

With the increase in life expectancy over the past decade, the number of elderly patients requiring dentures to replace missing teeth has also increased. Provision of the conventional denture (removable partial dentures and complete denture) is a common way to restore anatomical structures, form, function, and esthetics. Dentures are cleaned mechanically, chemically, or through a combination of these.[1-6] The most common and most widely used mechanical method of denture cleansing is the using a brush in the presence of hot or cold water. There are brushes specifically designed and sold commercially for this purpose. The number of fully or partially edentulous patients is still large in present days. Dentures are used for replacing lost teeth and returning the functional and esthetic conditions to the patients. The literature shows that the presence of some diseases and the use of certain

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medications can affect the oral tissues and amount of saliva. Knowledge of these factors associated with the constant intraoral changes related to use of the dentures and the aging of the individuals is of paramount importance to the dentist for making an accurate diagnosis and promoting health.[7-16] Complete dentures are the most common treatment for total loss of teeth in a dental arch. Although the prevalence of total tooth loss continues to decline among adults, population shifts have resulted in a sustained, even slightly increasing demand for complete dentures. Rehabilitative treatment is successful only when patients are motivated and aware of the correct prosthesis usage and hygiene. The accumulation of stains and soft and hard debris on removable dentures may have undesirable effects on the patient's oral health. The quality of the denture fitting surface, occlusal relations, denture age, and hygiene are important factors contributing to the prevalence of oral mucosal lesions associated with denture use. Care of dentures and the mucosal tissues of the edentulous mouth are important for the overall health, especially in older persons. Unclean dentures causing or contributing to oral mucosal disease and/or impairment in eating, therefore, may have a more profound effect on a frail elder person than on a younger, healthier person.[17-19] Consequently, this questionnaire based study aimed to evaluate the complete denture hygiene and maintenance habits among elderly institutionalized patients. Here, authors have faithfully attempted to explore the existing outcomes by processing their responses obtained via questionnaire exercise.

MATERIALS & METHODS

This study was performed in the department of Prosthodontics of the dental institution. A total of 100 patients were studied for the study. All selected patients had received complete dentures form the prosthodontic department only. All complete dentures were made by the under graduate and post graduate students, interns and faculty members in the concerned year. All patients were informed about the study and written consents were obtained. Ethical clearance was also obtained from the institutional ethical committee. A self prepared, close ended questionnaire was made which comprised of 7 questions about complete denture hygiene, knowledge and other related parameters. The relative importance of this study was explained to all participating patients. The privacy of the respondents and their freedom of expression were kept completely ensured confidential. All participating patients were provided a set of 7 questions and asked to fill that faithfully. The authors have also ensured to complete the questionnaire in patient's routine recall visits. This was done to further ensure the patients rights and ethical issues. To ensure entirely comfortable responses, the study was performed in an anxiety free atmosphere. It was done to ensure fair outcome those may possibly be seen if attempted arbitrarily. Results thus obtained was tabulated and subjected to basic statistical analysis. P value less than 0.05 was considered significant ($p< 0.05$).

RESULTS

All the intended parameters and values were gathered and sent for statistical analysis using statistical software Statistical Package for the Social Sciences version 21 (IBM Inc., Armonk, New York, USA). The finalized data was subjected to relevant statistical tests to obtain p values, mean, standard deviation, chi- square test, standard error and 95% CI. Table 1 and Graph 1 showed that out of 100 patients, males were 65 and females were 35. Total 27 patients were belonging to age group >60 years. In >60 years age group, maximum 27 patients were reported. Only 7 patients were falling in the age range of 41-45 years thus we can assume that most of the denture wearers were belonging to older age groups. P values were significant for first age group. It was 0.01. 58 patients were agreed that they are cleaning their denture. 23 patients clean it by brushing with water. 7 patients clean it by brushing with soap. 11 patients clean it by brushing with tooth paste. 6 patients clean it by soaking in cleansing tablet solution. 4 patients clean it by soaking in mouthwashes. 7 patients use some other indigenous form of cleaning the denture (Table 2). P value was reported to be significant (0.020**).** Distribution of patients according to frequency of cleaning has been complied in Table 3 & Graph 2. P values were significant for this comparison. It was 0.010.

Table 1: Age & gender wise distribution of patients.

Age Group (Yrs)	Male	Female	Total	P value
41-45	2	5	7 [7 %]	0.01*
46-50	11	6	17 [17 %]	1.00
51-55	19	4	23 [23 %]	0.90
56-60	17	9	26 [26 %]	0.20
>60	16	11	27 [27 %]	0.60
Total	65	35	100	*Significant

***p<0.05 significant**

Table 2: Questionnaire responses evaluation with related statistical inferences.

Questionnaire	Variables	No. of Respondents [n]	p Value
1	Are you cleaning your complete denture by any means ?	58 [Out of 100 Subjects]	0.020*
2	If yes then: Do you clean it by brushing with water	23	
3	If yes then: Do you clean it by brushing with soap	7	
4	If yes then: Do you clean it by brushing with tooth paste	11	
5	If yes then: Do you clean it by soaking in cleansing tablet solution	6	
6	If yes then: Do you clean it by bsoaking in mouthwashes	4	
7	Any other combination	7	

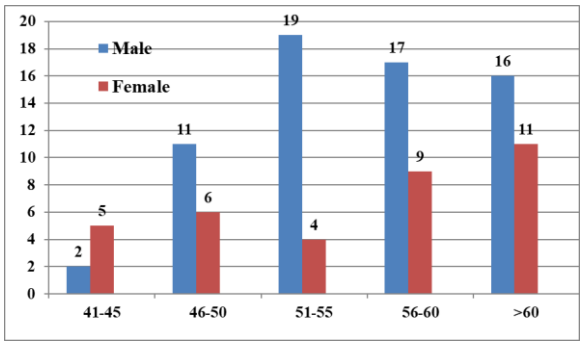
***p<0.05 significant**

Table 3: Allocation of patients according to frequency of cleaning.

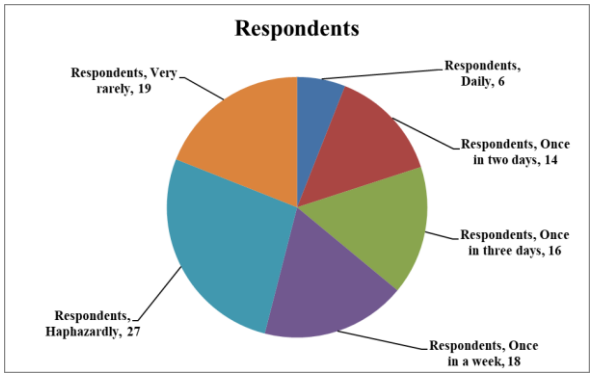
S. No	Frequency	Cleaning frequency (n)	p value
1	Daily	6	0.010*
2	Once in two days	14	
3	Once in three days	16	
4	Once in a week	18	
5	Haphazardly	27	
6	Very rarely	19	

***p<0.05 significant**

Graph 1: Age & gender wise distribution of patients.



Graph 2: Graphical representation of patients according to frequency of cleaning.



DISCUSSION

Complete dentures are used for replacing the entire set of lost tooth in the dental arch so as to replace the esthetic and functional conditions to the patients and to maintain an odor-free appliance. The fitting of the denture, its occlusal relations, age and hygiene of the denture are the most important etiological factors which in turn contribute to the occurrence of oral cavity lesions as a result of denture use.[20-26] Placement of denture in the oral cavity produces profound changes of the oral environment that may have an adverse affect on the integrity of the oral tissues. The primary objective of maintaining the complete denture is to prevent the occurrence of lesions like commisural chelitis, burning mouth syndrome, mouth ulcer, denture irritation hyperplasia, gagging leading to caries and periodontal disease in the oral cavity. In elderly patients, care of the mucosal tissues and the dentures of the edentulous mouth are very important for overall health.[27-31] The main aim of cleaning the denture is to remove the plaque adhering to the denture which in turn will eliminate the cause of denture stomatitis and reduce the

presence of micro-organisms on the denture which have been known to act as a reservoir of micro-organisms involved in systemic diseases like aspiration pneumonia, endocarditis and diabetes. Daily hygiene has been reported to be the main means of preventing mucosal inflammation. The patient's correct cleansing of complete dentures is essential to prevent staining of dentures and the coating of dentures with a biofilm which could damage the adjacent mucosa and cause systemic diseases. The adherence of Candida albicans to the acrylic surfaces of dentures is implicated as the first step in the pathogenesis of associated stomatitis. Few workers demonstrated that there is a strong correlation between unsatisfactory cleaning and the prevalence of Candida.

A lack of preventive hygiene programmes, denture cleanliness and denture removal overnight were found to be associated with denture stomatitis. Other authors also have reported a deficiency in denture cleaning in their studies. Improvements in oral and prosthetic hygiene are also considered significant factors for the treatment of prosthesis-related stomatitis.[32-37]

CONCLUSION

The overall inferences were very crucial as they were having intricate clinical applicability. Authors found that the relative condition of complete denture hygiene and maintenance was at moderate level. Authors also noticed that majority of the studied patients were cleanout their denture by regular brush with water (n=23). However, few of the patients were rarely cleaning their complete dentures judiciously.

Thus, Dentists must be properly counseling the patients regarding the importance of denture hygiene on overall oral and general health. Our study results must be considered as suggestive for evaluating clinical outcomes for such critical situations. However, we expect some other large scale studies to be performed that could further establish standard guidelines in these perspectives.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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