Research Article

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Cross Sectional Evaluation of Complete Denture Hygiene and Maintenance Habits Among Institutionalized Elderly Patients: A Questionnaire Based Original Study

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ABSTRACT

Aim: The present questionnaire based study was conducted to assess the complete denture hygiene and maintenance habits among elderly institutionalized patients of north Indian region.

Materials & Methods: The present study was conducted in the department of Prosthodontics. It included 100 patients who received complete dentures in the year 2018. Patients were selected from the regular OPD of the department. A questionnaire was outlined which comprised of 10 questions regarding cleansing methods, frequencies of cleaning, denture cleaning materials and other related parameters. All were given a set of 10 questions and asked to respond. Informed consents were obtained from the participants.

Results: Out of 100 patients, males were 65 and females were 35. Roughly 8 patients were cleaning their complete denture on daily basis. Half of the patients reported that they were unaware of denture cleaning methods. Also, the overall complete denture hygiene and maintenance were significantly low in older age group (>70 Years). 24 patients were cleaning their denture using brush with tooth paste.

Conclusion: The responses were very imperative as they reflected the present scenario of complete denture cleansing habits. The overall status of complete denture hygiene and maintenance was below moderate level. Most of the patients were cleaning their denture using brush with tooth paste (n=24). In the older age group, most of the complete dentures were not hygienically maintained solely due to lack of knowledge and motivation. Few of the patients were cleaning their complete dentures very rarely.

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

INTRODUCTION

Since decades, complete denture therapy are the most common mode of rehabilitation for total loss of teeth. The relative incidence and prevalence of total tooth loss continues to decline amongst Asian adults. However there is an ever increasing, demand for complete dentures in this province.[1] Complete denture after care is most important for optimal health of oral tissues and mucosa particularly in older populations. Unhygienic and contaminated complete dentures start acting as a reservoir for bacterial and other microorganisms. They also start attracting and favoring formation of bacterial plaque. Eventually denture wearers start complaining about bad breath and other dilemmas.[2] These entire phenomenon collectively affect the overall masticatory efficiency and patient comfort.

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Therefore as a routine and standard practice, patients must be advised to clean their dentures and their mouths after every meal whenever viable. With the help of soft brush, the mucosal covering the residual alveolar ridges and the dorsal surface of tongue must also be cleaned on daily basis.[3] But, several researchers have shown that the majority of complete denture wearers are not very much concerned and attentive about the complete denture cleanliness.[4] Literature has well evidenced that optimal maintenance of complete denture hygiene ultimately leads to improved oral health status.[5] Several methods have been employed for these purposes including mechanical, chemical and chemico-mechanical methods. However, the most frequently and widely used denture care method id is using a brush in the presence of hot or cold water. They are commercially available specialized brushes exclusively designed for the purpose of denture cleaning. Some of the researchers had shown the effective usage of mouthwashes for chemical cleaning of complete dentures.[6] Keeping the denture overnight in some antifungal antibacterial solutions has also been shown to disinfect denture surfaces effectively. They are mostly advised in the patients those are susceptible to develop oral thrush and of denture stomatitis. Therefore, this questionnaire based study aimed to assess the complete denture hygiene and maintenance habits among elderly institutionalized patients. Here authors have authentically attempted to investigate the existing outcomes by processing their responses generated through pre-formed questionnaire.

MATERIALS & METHODS

The present study was conducted in the department of Prosthodontics of the dental institution. It included 100 patients who received complete dentures. Complete dentures were fabricated in the institute by the students and faculty members in the year 2018. 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 10 questions regarding complete denture hygiene, knowledge and other related parameters. We have decided to conduct this study on questionnaire model since they are exceptionally useful to obtain detailed information about personal and group perceptions and opinions. They are also competent of saving time and money while analyzing the subjects at individual levels. In addition, they also give a broader range of data with better clarification and understanding. The worthiness of this study was revealed to all patients. The privacy of the respondents and their freedom of expression were completely ensured. All patients were given a set of 10 questions and asked to respond truthfully. The questionnaire exercises were completed in patient's routine recall visits. 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 studied parameters and records were assembled and sent for statistical analysis using statistical software Statistical Package for the Social Sciences version 21 (IBM Inc., Armonk, New York, USA). The resultant 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 30 patients were belonging to age group >70 years. Only 8 patients were falling in the age range of 40-50 years thus we can assume that most of the denture wearers were belonging to older age groups. P values was significant for first age group. 24 patients were cleaning their denture using brush with tooth paste. 11 patients were not using any means of denture cleansing (Table 2). 13 patients reported that they soak complete dentures in cleansing tablet solution. 6 patients reported that they brushing and soak complete dentures in hypo solution. P value was reported to be significant (0.010**).** Other observational findings are also outlined in table 2. Roughly one fourth of the studied patients were haphazardly cleaning their complete denture (Table 3 and Graph 2). Total 16 participants reported that they are cleaning their completed dentures very rarely. P value was reported to be significant (0.030**).** Other frequency related variables have been mentioned in table 3.

Table 1: Age & gender wise distribution of patients.

Age Group (Yrs)	Male	Female	Total	P value
40-50	4	4	8 [8 %]	0.01*
51-60	10	5	15 [15 %]	1.00
61-65	18	6	24 [24 %]	0.70
66-70	15	8	23 [23 %]	0.30
>70	18	12	30 [30 %]	0.70
Total	65	35	100	*Significant

***p<0.05 significant**

Table 2: Questionnaire responses evaluation with related statistical inferences.

Questionnaire	Variables	No. of Respondents	p Value
1	No cleanliness practice	11	0.010*
2	Brushing with water	13	
3	Brushing with soap	12	
4	Brushing with tooth paste	24	
5	Soaking in cleansing tablet solution	13	
6	Soaking in mouthwashes	9	
7	Brushing and Soaking in mouthwash	7	
8	Brushing and Soaking in hypo	6	
9	Brushing and Soaking in cleansing tablets	3	
10	Any other combination	2	

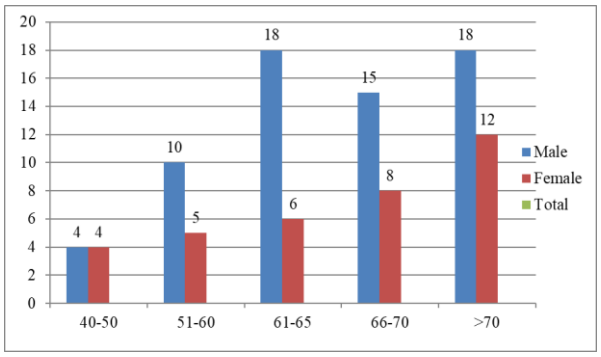
***p<0.05 significant**

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

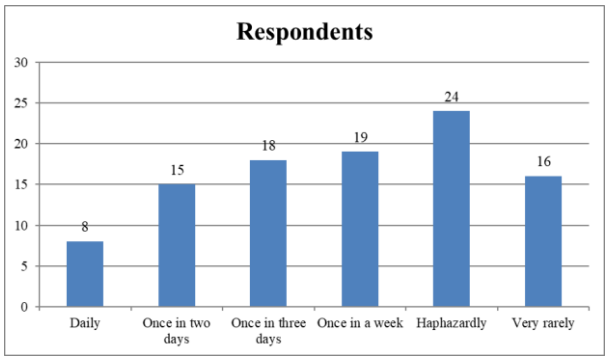
S. No	Frequency	Cleaning frequency (No. of respondents)	p value
1	Daily	8	0.030*
2	Once in two days	15	
3	Once in three days	18	
4	Once in a week	19	
5	Haphazardly	24	
6	Very rarely	16	

***p<0.05 significant**

Graph 1: Age & gender wise distribution of patients.



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



DISCUSSION

As we all know that Denture hygiene is necessary to check prosthesis's bad odor, bad aesthetics and the deposition of plaque and calculus. These activities are also negatively affecting the health of the surrounding vital structures.[7-8] Also, micro-porosities those are present on the roughened denture surface can act as a favorable region of bacterial growth and development. These dilemmas can be managed by maintaining regular hygiene of the complete denture with suitable means. There are numerous tablets, solutions, pastes and powders available commercially to cleanout completed dentures.[9-10] All have different indications and efficacies. In Indian scenario, most of the patients are using denture cleansing tablets or they brush their dentures with pasts. Literature have also evidenced (Goffin et al) that brushing with past is the commonest and popular way of denture cleansing. Our study results were also in accordance with these findings.[11] We have also noticed that 24 patients were cleaning their denture using brush with tooth paste. 11 patients were not using any means of denture cleansing. Our study results were

similar to the finding of Feltone and co workers.[12] Furthermore we also find that 13 patients soak their complete dentures in cleansing tablet solution while 6 patients reported that they brushing and soak complete dentures in hypo solution. These findings were quite comparable with the results of Khasawneh et al and Sadig et al.[13-14] As a proven fact, all denture health care manufactured goods must be user friendly, easy to apply, efficient in anti microbial actions and economical. Saha et all estimated the denture hygiene habits in complete denture wearers in 2014. Similar to our study, they also used self-made structured questionnaire to distinguish the outlook of the patients from the regarding denture hygiene. Their study sample consisted of totally 500 subjects, which included 284 males and 216 females. Their results were quite similar to our findings as they also found bad hygiene of complete dentures in studied population. They further stated that it was mainly due to irregular cleansing habits and less usage of cleansing solutions.[15] Some of the pioneer workers (Dikbas et al) have also quoted that aged patients, predominantly those who are in a compromised health state, are not able to maintain good denture hygiene due to some physical or other issues. Therefore, it is very essential for clinicians to educate their patients about every day denture cleansing procedure.[16]

CONCLUSION

Our study results clearly showed the present scenario of complete denture cleansing habits in studied patients. The overall status of complete denture hygiene and maintenance was below moderate level. Most of the patients were cleaning their denture using brush with tooth paste. Few patients reported that they are not using any cleansing habit. In the older age group, most of the complete dentures were not hygienically maintained exclusively due to lack of knowledge and motivation. Thus Dentists must be properly counseling the patients regarding the importance of denture hygiene. Our study results could be treated as suggestive for predicting clinical outcomes for such critical situations. Nevertheless, we expect some other large scale studies to be conducted that could further set certain standard norms.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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