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Research Article

EVALUATION OF THE BEHAVIOURS AND HYGIENE HABITS OF COMPLETE DENTURE WEARERS IN THE EASTERN NEPAL

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ABSTRACT

This study aims to evaluate the hygiene methods and habits concerning the use of complete dentures, the age of dentures and whether the patient has been instructed properly by the operating dentist on how to clean their dentures by using a specific questionnaire as a research tool. A total of 200 patients were randomly selected from the patients who visited the department of Prosthodontics, BPKIHS and were asked to complete a questionnaire which was the Nepalese translation of that used by Peracini et al. The results indicated that out of total two hundred patients, ninety six (48 %) were females of age range 32 to 86 years and one hundred and four (52%) were male patients of age range 35 to 89 years. The mean duration of edentulism of upper arch was 6.39 years (SD- 6.079) for male patients whereas for female patients it was 4.65 years (SD- 4.978). Similarly the mean duration of edentulism in lower arch for male patients was 6.12 years (SD- 6.004) and for female patients 4.35 years (SD- 4.942). Majority of the patients (34.5%) cleaned their dentures with water alone and 30% of the patients used combination of toothbrush, toothpaste and water. 47 patients (23.5%) used soap and water only without the use of toothbrush. 153 patients out of total 200 (76.5%) received the instructions about cleaning the denture from their dentist and 47 patients (23.5%) said they did not receive such instructions. The hygiene practise needs improvement through patient education and awareness and instructions in this regard by the treating dentist can be useful.

Keywords: Behaviour, Dentures, Edentulous, Hygiene, Eastern Nepal

INTRODUCTION

For most of these geriatric people, the loss of all natural teeth leads to impairment (tooth loss, loss of alveolar bone), disability (chewing and speaking problems) and handicap (broader social effects such as minimizing the contacts with other people)^{1,2}. For most of them rehabilitation with conventional complete dentures is the realistic treatment rather than alternative treatments such as overdentures or implant retained dentures³. The reasons for not proceeding with the implant therapy include satisfaction with complete dentures, patients' reluctance to undergo the surgical procedures, medically or psychiatrically unfit and most importantly the higher⁴. Main objective of the rehabilitative treatment of these patients is to improve their health by establishing functionality which can be achieved with complete dentures. Hence, correct use and care of the prosthesis are of great importance to the

patients not only for aesthetics and functions but also for the health of supporting tissue and appropriate conservation of the prosthesis itself⁵.

Elderly people are having many systemic diseases too and Diabetes Mellitus being one of such diseases quite prevalent among elderly and have shown more manifestations of candidiasis including the Denture Induced Stomatitis (DIS)⁶. Therefore, it is imperative to follow up these patients regularly for their oral tissue health and hygiene maintenance of the dentures⁷. Studies have shown that the patients who are not instructed properly for hygiene and maintenance of their dentures show poorly maintained denture and DIS^{8,9}. In other instances, patients do not follow up regularly to the dentists for control and maintenance of their dentures at the appropriate intervals¹⁰. Thus it's the responsibility of the treating dentist to guide their patients properly about denture cleaning and appropriate cleansers to be used.

Due to the paucity of such study regarding the patients' behaviours and hygiene habits of complete dentures in Nepal, this study aims to evaluate the hygiene methods and habits concerning the use of complete dentures, the age of dentures and whether the patient has been instructed properly by the operating dentist on how to clean their dentures by using a specific questionnaire¹¹ as a research tool.

MATERIALS AND METHODS

The study was carried out after obtaining the ethical clearance from Institutional Ethical Review Board, BPKIHS. A total of 200 patients were randomly selected from the patients who visited the department of Prosthodontics, BPKIHS as well as different peripheral towns of Eastern Nepal who were willing to participate in this study and fill out a questionnaire addressing denture wearing and cleansing habits. The questionnaire was the Nepalese translation of that used by Peracini et al¹¹ in their study and was understandable to the lay persons. A written informed consent was obtained from the participant before filling out the questionnaire. The data obtained from this study was analyzed by using SPSS software and descriptive statistics were calculated.

RESULTS

Out of total two hundred patients, ninety six (48 %) were females of age range 32 to 86 years and one hundred and four (52%) were male patients of age range 35 to 89 years. 127 subjects (63.5%) were from the Prosthodontics OPD of BPKIHS and remaining were from various peripheral centres centre. The data regarding the patient distribution according to the duration of edentulism, period of denture use, frequency of cleaning dentures etc are presented in tables 1 to 8.

DISCUSSION

The gender wise distribution of duration of edentulism of upper arch showed 88 female patients (91.7%) to be edentulous for past 11 years, 6 females (6.2%) were edentulous for past 23 years and 2 were edentulous for as long as 35 years. Among the males, 82 (78.8%) were edentulous for past 11 years 20 (19.2%) were edentulous for past 23 years and 2 male patients were edentulous for past 35 years (table 1). Similar results were seen for the gender wise distribution of duration of edentulism of lower arch (table 2). The mean duration of edentulism of upper arch was 6.39 years (SD- 6.079) for male patients whereas for female patients it was 4.65 years (SD- 4.978). Similarly the mean duration of edentulism in lower arch for male patients was 6.12 years (SD- 6.004) and for female patients 4.35 years (SD- 4.942) (table 3). These findings are in contrast to the results of the studies conducted by De Castellucci Barbosa L et al⁵, Peracini A et al¹¹ and Coelho CM¹² et al where majority of the patients were edentulous for more than 10 years to 20 years. The difference can be attributed to the fact that dental treatment and awareness in this region has started recently and the older population who are edentulous for more than 15 years are not much keen in having denture prostheses.

The distribution of patients according to the duration of wear of current upper complete denture showed that 192 patients

(96%) were wearing the same dentures for past 10 years (98 male patients and 94 female patients), 6 patients (3%) were wearing the same upper denture for last 21 years (4 males and 2 females) and 2 male patients were using the same upper denture for last 31 years (table 4) and similar results were observed for the current lower denture (table 5). This similarity might be due to the fact that almost all complete denture patients have been wearing the dentures in pair simultaneously. Coelho CM et al¹² also found the majority of their patients wearing their same dentures for more than 20 years.

153 patients out of total 200 (76.5%) received the instructions about cleaning the denture from their dentist and 47 patients (23.5%) said they did not receive such instructions (table 6). This was quite improved findings as compared to the previous studies by Hoad-Reddick et al⁸ Dikbas I et al¹³ and Marchini et al¹⁴ who found that 86.3%, 82.9% and 77.5% of the respondents respectively did not receive proper denture hygiene instructions from their dentists.

This study showed that 80 patients (40%) with the complete denture used to clean their prostheses once daily, 71 patients (35.5%) cleaned them twice daily, 45 patients (22.5%) cleaned thrice daily (table 7). These findings are similar to the results of the studies carried out by Dikbas I et al¹³, where 25% of the study population cleaned their dentures three times a day. However, according to the study by Pietrokovski et al¹⁶, 96% of the patients reported cleaning their dentures 2 or more times daily.

Majority of the patients (34.5%) cleaned their dentures with water alone and 30% of the patients used combination of toothbrush, toothpaste and water. 47 patients (23.5%) used soap and water only without the use of toothbrush (table 8). In the study by Baran and Nalcaci¹⁵, 42.9% of patients immersed their dentures in water only and 1.6% immersed them in hypochlorite solution. In the study of Hoad-Reddick et al⁸, a combination of brushing and soaking was found to be the method of cleaning dentures more frequently whereas Veres et al¹⁷ found that 59% of the patients brushed and immersed their dentures, 36% only brushed their dentures and only 5% used immersion as the only method of cleaning. In our study, none of the denture wearing patients were found using chemical denture cleansers which might be due to the lack of information received about chemical denture cleansers from the treating dentists as well as lack of availability of such cleansers in the local market.

Limitations of the study

Relatively small sample size limits to draw any definite conclusion of a quite big edentulous geriatric population who might be having denture prosthesis but do not report to the hospital until they feel their dentures really intolerable and painful. Furthermore more than sixty percent of the sample was taken from the dental college of BPKIHS which might have affected the result to some extent. Since the dentists practicing in these peripheral towns are also graduated from the same dental school, these dentists also instruct the patients almost in same manner as in BPKIHS. Hence a broader study needs to be conducted nationwide to draw the real picture regarding this issue.

CONCLUSION

Within the limitations of this study, the following conclusions could be made –

- i) Majority of both male and female edentulous were using their current complete dentures for last 10 years.
- ii) Rinsing by water alone was the preferred method of cleaning their dentures for both male and female edentulous patients followed by cleaning with toothbrush, toothpaste and water being second common method.
- iii) Majority of the treating dentists were the graduates from the BPKIHS and they were instructing the patients well about cleaning their dentures.
- iv) 88% of the males and 74% of the females removed their dentures during sleep which is the recommended practice removable prostheses for completely edentulous patients.

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Table 1: Distribution of patients according to the duration of edentulism in upper arch

Duration of edentulism (upper arch)		Gender		Total
		Female	Male	
	0-11 years	88	82	170
	12-23 years	6	20	26
	24-35 years	2	2	4
Total		96	104	200

Table 2: distribution of patients according to the duration of edentulism in lower arch

Duration of edentulism (lower arch)		Gender		Total
		Female	Male	
	0-11 years	88	82	170
	2	6	20	26
	3	2	2	4
Total		96	104	200

Table 3: gender wise distribution of duration of edentulism in both upper and lower arches

	Gender	N	Mean	Std. Deviation	Std. Error Mean
DOE_U	M	104	6.39	6.079	.596
	F	96	4.65	4.978	.508
DOE_L	M	104	6.12	6.004	.589
	F	96	4.35	4.942	.504

Table 4: Distribution of patients according to the age of current upper complete dentures, for each gender

Age of current dentures	Gender		Total
	Male	Female	
0-10 years	98	94	192
11-21 years	4	2	6
22-32 years	2	0	2
Total	104	96	200

Table 5: Distribution of patients according to the age of current lower complete dentures, for each gender

Age of current dentures	gender		total
	m	F	
0-10 years	99	94	193
11-21 years	3	2	5
22-32 years	2	0	2
Total	104	96	200

Table 6: Distribution of patients according to the instructions provided recieved on complete denture cleansing

Centers of patient collection	Received instructions	Did not receive instructions	Total
BPKIHS	110	17	127
Dhankuta	15	7	22
Ilam	6	13	19
Inaruwa	5	2	7
Biratnagar	17	8	25
Total	153	47	200

Table 7: Distribution of patients according to the frequency of cleaning of denture

Frequency of cleaning of denture	Frequency	Percentage
Once daily	80	40
Twice daily	71	35.5
Thrice daily	45	22.5
More than thrice daily	3	1.5
Irregular (less than once)	1	0.5
Total	200	100

Table 8: Distribution of patients according to the denture cleaning method used

Method of denture cleaning	Frequency	Percentage
Water alone	69	34.5
Soap and Water	47	23.5
Toothpaste and Water	22	11
Toothbrush, Toothpaste and Water	60	30
Others (ashes, mango leaves etc.)	2	1
Total	200	100

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