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Research Article

A SURVEY TO ASSESS THE KNOWLEDGE OF DENTAL HYGIENE AND CARE OF PROSTHESIS IN A COMPLETELY EDENTULOUS PATIENTS

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ABSTRACT

This increase in life expectancy can be attributed to improved medical facilities and the dental needs of geriatric population requiring special attention. The quality of the prosthesis needs to be regularly monitored as it functions within a changing oral environment comprising the saliva, the oral musculature and the supporting tissues. The lack of motivation and knowledge among the geriatric patients regarding the use of denture and cleaning of the complete denture prosthesis may lead to plaque accumulation provoking hazards. Thus this survey was conducted with questionnaire to assess the knowledge of denture hygiene and care of prosthesis in completely edentulous patients.

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INTRODUCTION

The proportion of older people in the population is increasing faster than is any other age group. India will soon become home to the second largest number of older people in the world. The number of people above 60 year age group in India is expected to increase to 100 million in 2013 and to 198 million by 2030.¹

This increase in life expectancy can be attributed to improved medical facilities and the dental needs of this section of the population require special attention.

The quality of the prosthesis needs to be regularly monitored as it functions within a changing oral environment comprising the saliva, the oral musculature and the supporting tissues. Microbial plaque on dentures has the potential to be harmful to both the oral mucosa and to general health.^{2,3}

The microporous surface of an acrylic resin denture base provides an environment that harbours opportunistic microorganisms. Denture cleaning is necessary to remove such invaders, as well as extrinsic stains and soft and hard deposits. The role of dentists does not end with the insertion of the prosthesis.

A neglected dental prosthesis not only represents a lack of patient knowledge but also highlights a potential lack of

motivation on the part of the dentist.^{2, 2} However, many complete denture patients tend to think that being in the state of edentulism does not require any specific oral hygiene measures. Therefore to assess the extent of this problem, the present study is carried out to assess the knowledge and attitude of denture-wearing patients as well as practices related to the care of dental prostheses.

MATERIALS AND METHODOLOGY

Participants were selected from amongst the completely edentulous patients attending the Department of Prosthodontics, AB Shetty Memorial Institute of Dental Sciences, Mangalore, Karnataka, India.

Ethical clearance was obtained from the Institute before starting the study. The patients who fulfilled the following

Inclusion Criteria

- Edentulous patients with at least two months of denture wearing.
- All the patients were independent, hence no other person was involved in the maintenance of denture hygiene.

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Exclusion Criteria

- Limited mental or physical abilities.
- Patients wearing a single completedenture.

A questionnaire, was designed to assess the denture use, denture cleaning and denture home care knowledge of the patient.

The following data were collected: the age of the patient, the number of previous sets of dentures, the frequency of replacing dentures, nocturnal denture wear, denture removal during day, how the dentures were stored, denture-related ulceration, use of adhesives, presence of other denture wearers in the family and the history of any denture repairs.

With regard to denture cleaning the following data were recorded: the schedule of cleaning the dental prostheses, if it was performed within or outside the mouth, the use of tooth/denture brush or other cleaning aids, perception after wearing the cleaned denture and whether denture polishing was ever carried out.

RESULTS

A total of 60 patients participated in the study and included 66.7% males and 33.3% females. The age range was 38-95 years (mean age 64.55). 48.4% patients had been using dentures for more than one year but less than 5 years and 33.9% for more than 5 years.69.8% patients reported using only one set of complete dentures and 1.6% had a history of having five sets of complete dentures.

77.1% removed their dentures at night, and of these 37 patients, 89.9% kept their prostheses in water, 4.1% in an empty box, and 6.1% either tied the dentures in a cloth, or placed them in a pocket or on a table. Of the surveyed population, 25.5% removed their prostheses during the day while 74.5% did not. Most of the patients (94.3%) did not use denture adhesive. The dentures of 18 (30.2%) patients had been repaired and of these, 41.4% reported fracture of the mandibular denture. All 60 patients reported cleaning their prostheses daily, and 86.5% of the subjects cleaned the prostheses outside the mouth. 53.6% cleaned the prostheses twice a day.

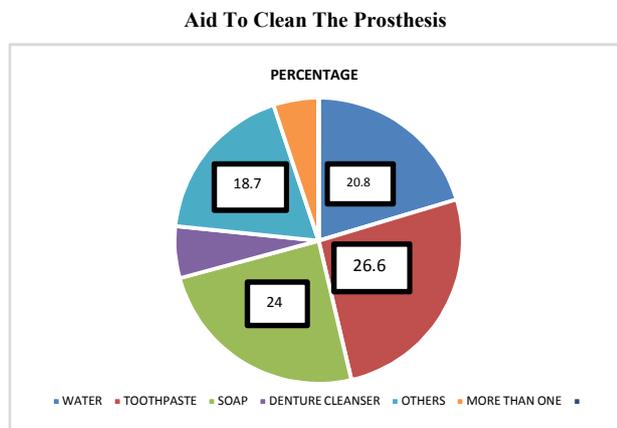
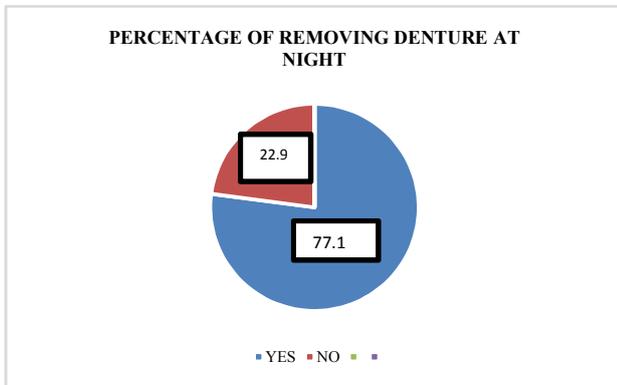
Table 1 Questionnaire for denture use

Questions	Responses	Frequency	Percentages
1. How long have you been using this set of prostheses? (number of denture-wearing years)	a) 1 year or less	11	17.7
	b) 1-5 years	29	48.4
	c) more than 5 years	20	33.9
2. How many sets have you used till now?	a) One	41	a)69.8
	b) Two	12	b) 20.8
	c) Three	3	c) 5.7
	d) Four	3	d) 2.1
	e) Five	1	e)1.6
3. If more than one – how often have you changed your dentures?	a) Not applicable	41	
	b) Does not remember	4	3.4
	c) 0-5 years	9	60.3
	d) 5-10 years	2	25.9
	e) 10-15 years	1	3.4
	f) 15-20 years	1	1.7
	g) 20-25 years	1	3.4
	h) more than 25 years	1	1.7
4. Do you remove your prostheses at night?	a) Yes	46	77.1
	b) No	14	22.9
5. IF YES where do you keep them at night?	a) Not applicable	14	
	b) Water	37	89.9
	c) Empty box	4	4.1
	d) Others	5	6.1
6. Do you remove your prostheses at some point during the day?	a) Yes	15	25.5
	b) No	45	74.5
7. Where are your prostheses placed when out of your mouth?	a) Not applicable	45	
	b) Water	10	71.4
	c) Empty box	4	8.2
	d) Pocket	1	14.3
	e) Others	1	6.1
8. Do you feel your prostheses regularly cause ulceration?	a) Yes	3	6.8
	b) No	45	76.6
	c) Sometimes	12	16.7
9. Do you use adhesive with prostheses?	a) Yes	2	4.7
	b) No	57	94.3
	c) Sometimes	1	2.1
10. Is any other person in your family a denture wearer?	a) Yes	9	16.7
	b) No	51	83.3
11. Have the dentures been repaired at any time?	a) Yes	18	30.2
	b) No	42	69.8
12. IF YES, what was the reason for the repair?	a) Not Applicable	42	29.3
	b) Fracture of maxillary denture	5	41.4
	c) Fracture of mandibular denture	7	20.7
	d) Teeth dislodged	3	8.6
	e) More than one	3	

Table 2 Questionnaire for denture cleansing prosthesis care

Questions	Responses	Frequency	Percentages
1. Do you clean your prostheses daily?	a) Yes b) No	60 0	100 0.0
2. IF YES, do you clean them.....	a) Outside the mouth b) Within the mouth c) Both	52 1 7	86.5 1.6 12
3. How many times a day do you clean them?	a) Once a day b) Twice a day c) Three times a day d) Over three times a day	24 36 0 0	40 60 0 0
4. Do you use denture brush/tooth brush to clean your dentures?	a) No b) Yes i) Denture brush ii) Tooth brush	12 48 2 46	 5.3 94.7
5. Use of other aids to clean the prostheses?	a) Water b) Toothpaste c) Soap d) Denture cleansers e) Others f) More than one	12 16 15 2 11 4	20.8 26.6 25 6 18.7 5.2
6. How long do you put the dentures inside the denture cleanser:	a) Not applicable b) Overnight c) 1a half hour- 1 hour	57 2 1	 85.7 14.3
7. How often do you use the denture cleanser:	a) Daily b) Alternate days c) Once in a week	1 0 2	42.9 14.3 42.9
8. Do you feel any difference after wearing the cleaned dentures?	a) Yes b) No	34 26	58.3 41.7
9. IF YES – what difference was perceived?	a) Feels clean or light b) No odour c) Sticks properly to palate d) More than one	30 2 1 1	89.3 2.7 1.8 6.3
10. Have you had your dentures polished by dentist?	a) Yes b) No	0 60	0 100

The most popular cleaning aids were toothpaste 26.6%, soap 25% and denture cleanser 3.6%.



DISCUSSION

Complete denture wearers should be educated regarding prostheses care and maintenance to ensure health and function of the supporting structures. This study assessed edentulous patients' knowledge, attitude and practice regarding care of their complete denture prostheses.

The present study showed that 33.9% patients had been using the same complete dentures for more than 5 years in comparison with the results of Chowdhary *et al.*⁷ and Barbosa *et al.*⁶ who have, respectively, reported 8% and 78% usage of the same complete dentures for more than 5 years. 69.8% patients reported using only one set of complete dentures during their life. The remaining patients used more than one set, 60.3% reported changing their dentures within five years and 1.7% reported changing dentures after using them for more than 25 years. This is in stark contrast to a study by Nevalainen *et al.*⁸ which found 64% subjects had a denture –wearing history of over 30 years. The disparity may be related to the age of the patients as the latter study was conducted on the elderly, over 75 years.

The patients participated in the present study were being educated regarding the effects of wearing single set for longer period of time which includes alveolar ridge resorption with loss of bone height and width.

Of the surveyed population 22.9% patients did not remove their dentures at night which is a finding close to the report of a previous study by Chowdhary *et al.*⁷, where 36% slept with their prostheses in place. There is agreement of the important need to leave dentures out of the mouth for a minimum of six

of every 24 hours to ensure regenerative blood supply, a relief of pressure and a break in parafunctional habits to allow the tissues to recover.

All patients reported cleaning their dentures daily. The results are similar to those reported in the literature (more than 70% cleaned their dentures daily).⁴⁻⁶ The majority of the patients did not know how long a complete denture should be used. Complete dentures should be reviewed annually, with consideration for replacement after five years. The majority of the patients attributed the knowledge of denture maintenance to themselves. Whilst the patient may have forgotten instructions imparted orally, or not followed them, the dentist may have been negligent in not ensuring compliance. Printed information for reference and frequent reinforcement is desirable.

CONCLUSION

Dentists need to be more cognizant of the need to offer denture patients greater support. Instruction on how to care for complete dentures should be given special attention by the dentists during insertion. Follow up and reinforcement of denture home care should be done periodically to ensure durable performance of dentures as well as maintenance of good oral health. More attention must be given to training dental students in the education and motivation of patients regarding denture care and maintenance.

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