

A Questionnaire-Based Survey to Assess the Knowledge and Awareness of Denture Staining in Denture Wearers visiting Sri Venkateswaraa Dental College, Ariyur, Puducherry.

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Abstract:

The denture hygiene maintenance is of importance for the edentulous patients to maintain a long run of the prosthesis. But most of the patients were unaware of the denture staining and cleaning methods. This survey aims at evaluating the level of awareness among the complete edentulous patients. A total of 73 sample were selected for the study. The complete edentulous patients reporting to the Department of Prosthodontics in Sri Venkateswaraa Dental College, Ariyur, Puducherry were the respondents of the study. The data was collected manually and analysis done using pie-chart. The majority of the patients lacked proper education, awareness and motivation on denture hygiene maintenance. This resulted in the ill effects of denture staining, infections & discomforts of the complete denture wearers.

Keywords: denture staining, awareness and motivation on denture hygiene maintenance.

Introduction

Maintaining optimal periodontal health requires daily, persistent practice of dental hygiene. Failure to do so will eventually lead to the accumulation of plaque. In the mouth, dental plaque accumulates on both the soft and hard tissues. Maintaining proper oral hygiene is a crucial habit to be followed on a daily basis. Maintaining dental prostheses, such as removable dentures, is a lifelong endeavour because they are not protected from the dangers of plaque build-up. One of the most significant treatment choices in prosthodontics are complete dentures. Patients may be disappointed with newly made dentures if they are not effective in keeping them clean. Complete dentures improve phonetics, help with mastication, and also make an edentulous person's smile look better. In addition to these benefits, maintaining denture care will extend its lifespan and preserve its cosmetic appeal. It's crucial to maintain dentures in the same manner that we do our natural teeth, though occasionally extra caution may be required to prevent stains on dentures. Awareness is said to be the first step toward any change. A complete denture wearer's awareness of oral hygiene and denture hygiene maintenance is directly related to their lack of knowledge of the same or their ignorance. The purpose of this survey was to assess complete denture wearers' knowledge on denture hygiene maintenance and staining, and their awareness for the same ¹⁻².

Materials &Methodology:

The study sample consisted of 73 completely edentulous patients that reported to the Department of Prosthodontics of Sri Venkateswara dental college, Ariyur. Patients already wearing complete dentures and who were physically and intellectually capable of maintaining denture cleanliness and hygiene were selected for the study. The exploratory questionnaire technique was validated by subject experts (prosthodontist) before its application and then it was given in English and native language (tamil) to the patients to collect the data which included questions related to denture hygiene awareness and maintenance. Prior to data collection informed consent was taken from all the subjects. Data was collected manually and compiled into excel sheet. The results were analyzed by using a pie-chart based on the collective response of each question among the 73 patients.

The following questionnaire was distributed to the patients:

1. Time duration of wearing denture?
 1. < 6 months
 2. 6 months to 1 year
 3. 1 to 5 years
 4. > 5 years
2. Are you consuming coffee or tea regularly?
 1. Yes
 2. No
3. If yes, how many times a day you drink?
 1. 2 times
 2. 3 to 5 times
 3. > 5 times
4. Are you consuming aerated drinks?
 1. Yes
 2. No
5. If yes, how many times do you consume aerated drinks?
 1. Daily
 2. Frequently (more than once a week)
 3. Occasionally
6. Are you having any of the following habits?
 1. Alcohol consumption
 2. Cigarette smoking
 3. Tobacco chewing
 4. None of the above
7. If yes, what is the frequency of consumption of those habits?
 1. Daily
 2. Frequently (more than once a week)
 3. Occasionally
8. Do you remove your denture before going to bed for sleeping?
 1. yes
 2. no
9. If yes, do you soak your denture inside water ?
 1. yes
 2. no

10. Are you cleaning your dentures?

1. Yes
2. No

11.If yes, at what intervals are you cleaning your dentures?

1. Daily Once
2. Daily Twice
3. Every alternate day

12.Which method are you using for cleaning your dentures?

1. Denture cleaning solutions
2. Rinsing with water
3. Using toothpaste
4. Using detergents

13.Are you aware of any denture cleaning techniques?

1. Yes
2. No

14.If yes, what techniques have you been advised?

1. Soaking in salt water overnight
2. Using denture cleaning solutions
3. Professional cleaning by a dental technician

15. Are you suffering from any of the following?

1. Oral infections
2. Oral ulcers
3. Halitosis (bad breath)

16. Did you know that stained dentures could be a cause for the above discomforts?

1. Yes
2. No

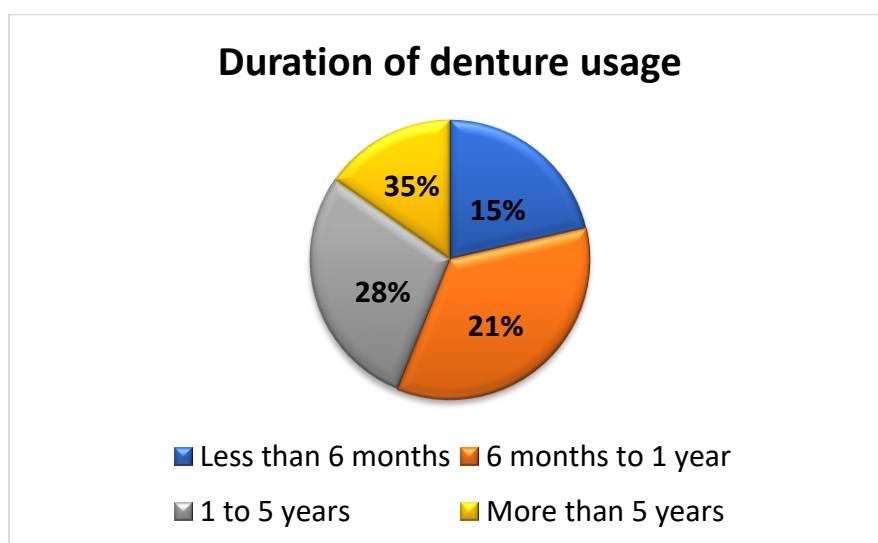
17.Are you satisfied with your denture maintenance?

1. Yes
2. No

RESULTS:

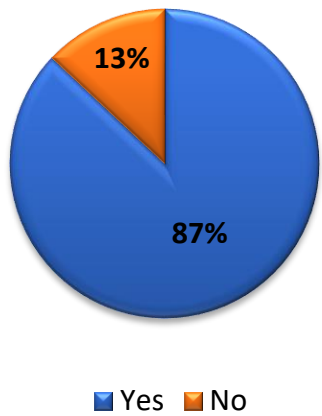
Majority 35% of the patients were complete denture wearers for more than 5 years, 28% of the patients have been wearing dentures for 1 to 5 years, 21% of the patients were denture wearers for 6 months to 1 year and approximately 15% of the patients used dentures for less than 6 months (**Fig 1**). More than 87% of patients consume coffee or tea regularly& 13% were reported non consumption of coffee or tea (**Fig 2**). Of the patients

consuming tea or coffee, 76% of patients consumed tea or coffee twice a day, about 17% of patients consumed tea or coffee 3 to 5 times a day & approximately 7% of the patients consumed tea or coffee more than 5 times a day (**Fig 3**). About 55% of the patients consumed aerated beverages & remaining 45% reported non – consumption of aerated beverages (**Fig 4**). Of the patients consuming aerated beverages, around 76% of the patients consumed aerated beverages occasionally, 20% of the patients consumed aerated beverages more than once a week & approximately 4% of patients consumed aerated beverages daily (**Fig 5**). 48% of the patients reported alcohol consumption habits, Thirty-two percent of the patients reported non consumption of alcohol or tobacco, 12% of the patients reported cigarette smoking habit & Tobacco chewing habit was reported by 8% of the patients (**Fig 6**). Of the patients reporting alcohol and tobacco consumption, 54.3% of the patients reported to be consuming them occasionally whereas 36.7% of the patients reported consuming them frequently and 9% of the patients reported consuming them daily (**Fig 7**). More than 63% of the subjects removed their dentures during night time & 37% of the subjects were not removed their dentures during night time (**Fig 8**). About 69% of the patients were soaking their denture in water and 31% of the patients not soaked the denture in water (**Fig 9**). Majority 94.5% of the patients cleaned their dentures using some or the other method & 5.5% reported non cleaning of the denture (**Fig 10**). Almost 56% of the patients claimed to be cleaning their dentures once daily, approximately 32.5% of the patients reported to be cleaning their dentures two times a day and around 11.5% of the patients cleaned their dentures only every alternate day (**Fig 11**). Almost 38.9% of the patients used only water to rinse and clean their dentures, 24.3% of the patients used appropriate denture cleaning solutions to clean their dentures, approximately 20% of the patients used toothpaste to clean their dentures and about 16.8% of the patients used detergents with water to clean their dentures (**Fig 12**). 59% of the patients claimed to be aware of some or the other denture cleaning techniques, whereas 41% were not aware of any denture cleaning techniques (**Fig 13**). About 52.5% of the patients used appropriate denture cleaning solutions, 40.5% of the patients who cleaned their dentures soaked them overnight in salt water, whereas only approximately 7% of the patients sought professional denture cleaning by a dental technician or a dentist (**Fig 14**). About 75% of the patients complained of halitosis (bad breath), 16% of the patients complained of oral ulcers, and approximately 9% of the patients suffered from oral infections (**Fig 15**). 72.6% of the participants reported discomfort associated with stained dentures & 27.3% not reported the discomfort with stained dentures (**Fig 16**). More than 63% of the patients were satisfied with their quality of denture maintenance, whereas 37% of the patients were unsatisfied with their denture maintenance (**Fig 17**).



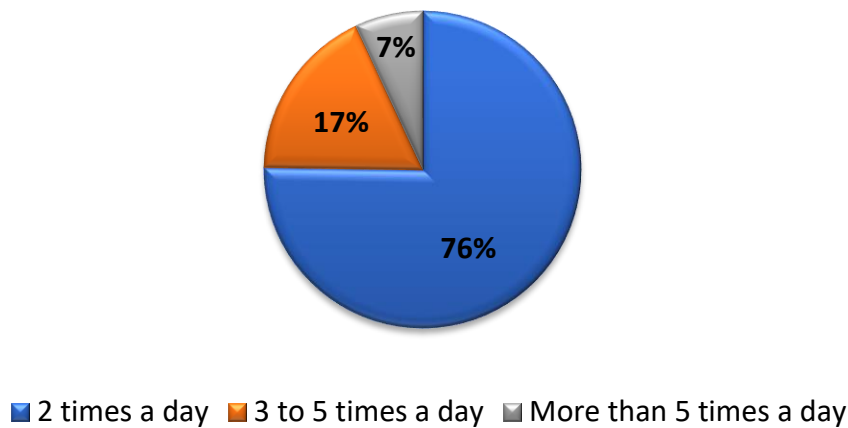
(► **Fig. 1**). Duration of denture usage

Consumption of tea or coffee



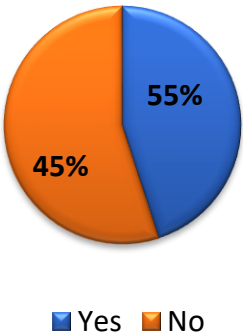
(► Fig. 2). Consumption of tea or coffee

Frequency of tea or coffee consumption



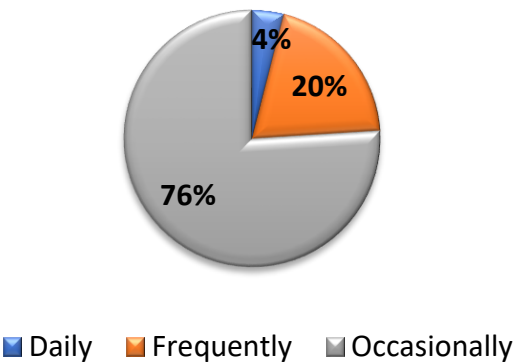
(► Fig. 3). Frequency of Tea or Coffee Consumption

Consumption of aerated beverages



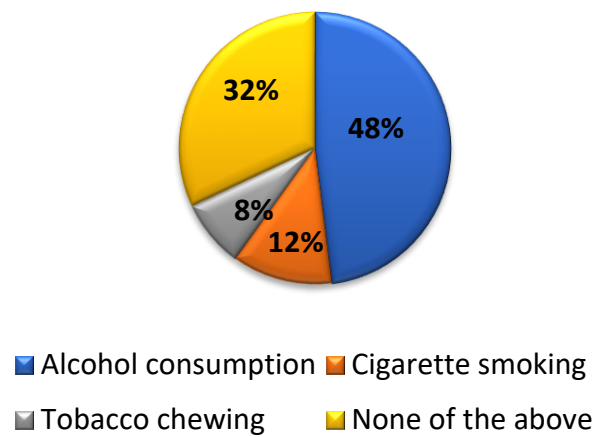
(► Fig. 4). Consumption of aerated beverages.

Frequency of aerated beverages



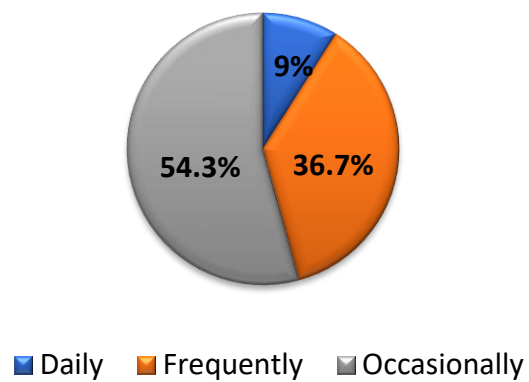
(► Fig. 5). Frequency of aerated beverages

Alcohol and Tobacco consumption



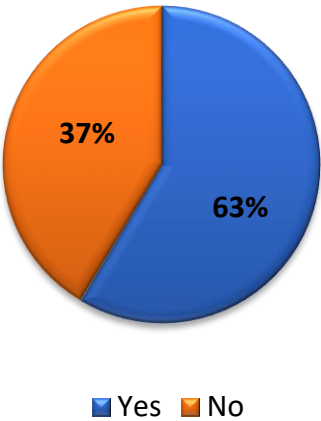
(► Fig. 6) Alcohol and Tobacco consumption

Frequency of alcohol and tobacco consumption



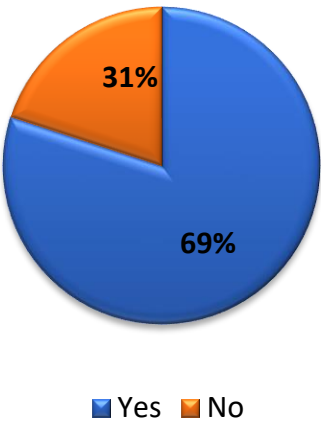
(► Fig. 7) Frequency of alcohol and tobacco consumption

Removing denture before bed

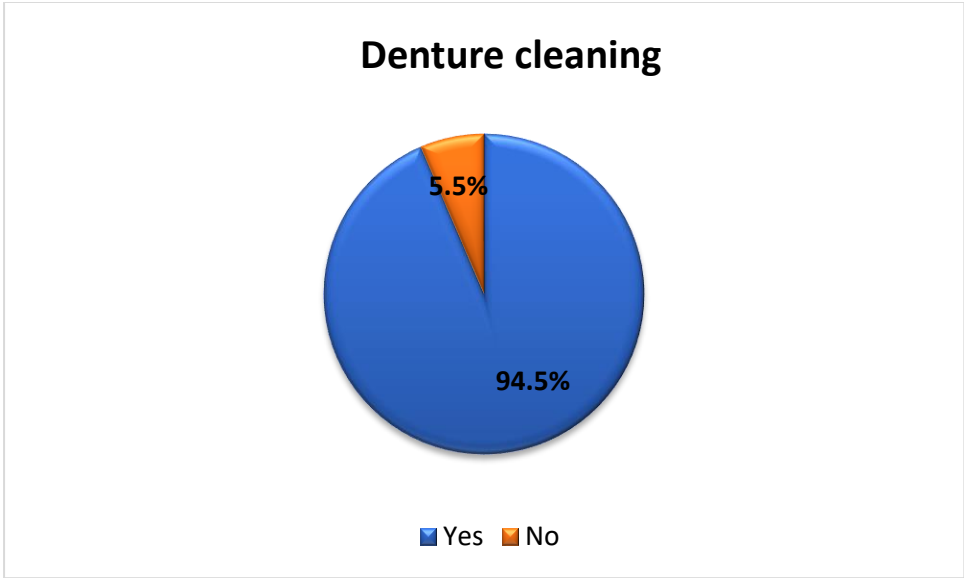


(► Fig. 8) Removing denture before bed.

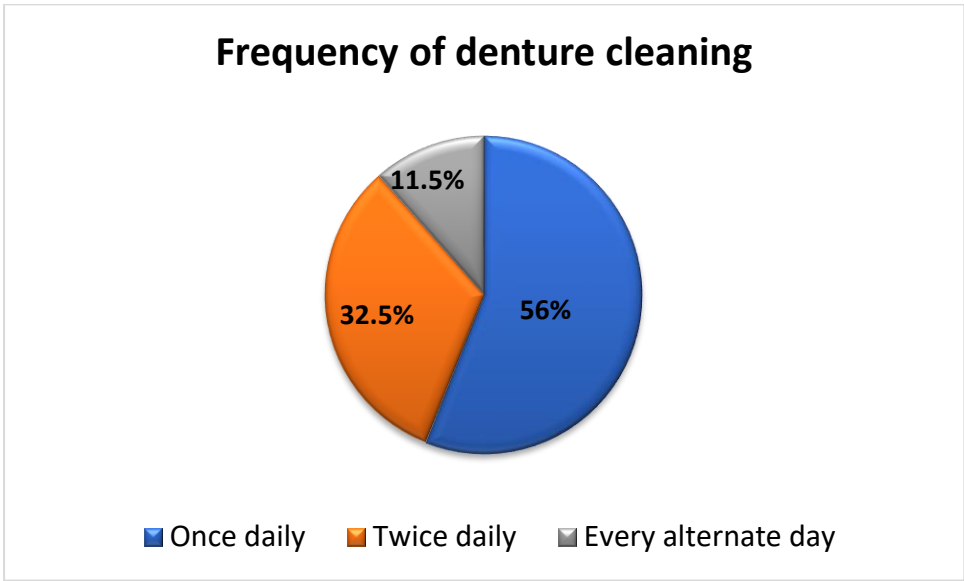
Soaking denture in water



(► Fig. 9) Soaking Denture in water

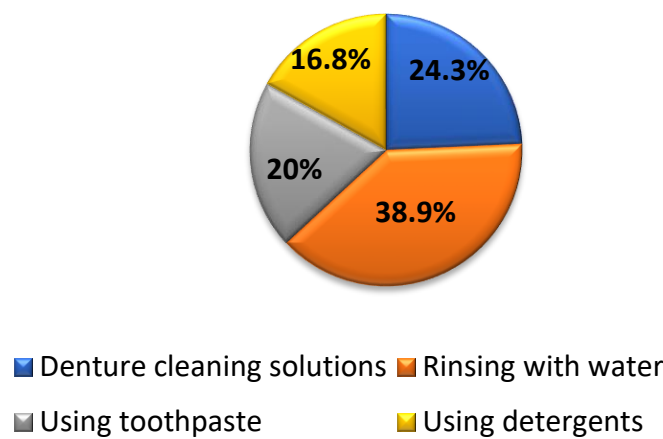


(► Fig. 10) Denture Cleaning



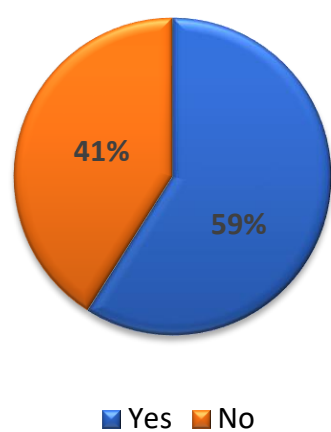
(► Fig. 11) Frequency of Denture cleaning

Denture cleaning methods used



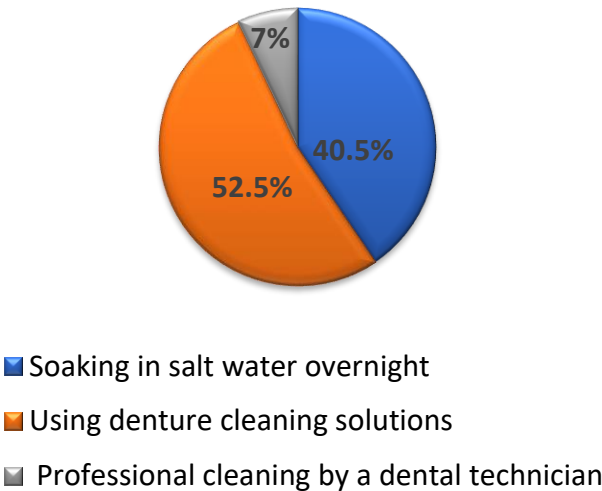
(► Fig. 12) Denture cleaning Methods used

Awareness of denture cleaning techniques



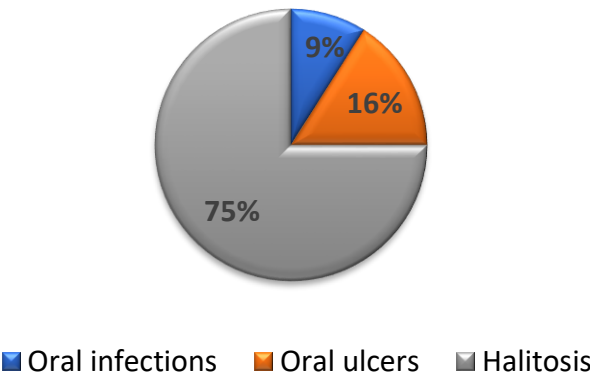
(► Fig. 13) Awareness of denture cleaning techniques

Knowledge of specific denture cleaning techniques



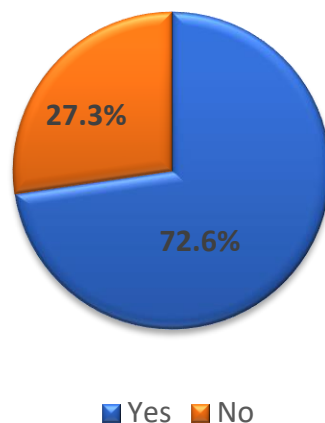
(► Fig. 14) Knowledge of specific denture cleaning techniques.

Ailments related to oral hygiene maintenance



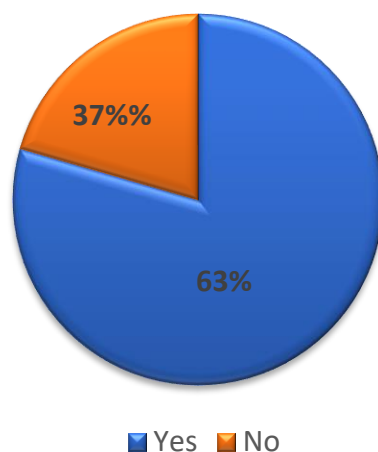
(► Fig. 15) Ailments related to oral hygiene maintenance

Discomfort on Stained dentures



(► Fig. 16) Discomfort on Stained denture.

Denture maintenance satisfaction



(► Fig. 17) Denture maintenance satisfaction

DISCUSSION:

The present study throws light on the fact that poor denture hygiene maintenance leads to denture staining & oral infections. The proper education & motivation during the delivery of the denture will improve the aesthetic, functional & longevity of the patient prosthesis. 87% of the respondents consumed tea or coffee beverages & few participants consumed for more than 5 times a day which is similar to the study conducted by Rathi et al ^[3] About 48% of the patients consumed alcohol, 12% were cigarette smoking, 8% were tobacco chewers & 36.7% of the study respondents were frequently consumed tobacco & alcohol. Majority of the study subjects cleaned their dentures regularly, while most of the subjects used water & small number of participants used commercially available denture cleaning solutions. In our study majority 56% of the population cleaned their dentures once daily which is similar to the result obtained by Pervez Cooper et al ^[4] where 32.5% cleaned their denture twice a day & 11.5% even cleaned on every alternative day. This highlights the lack of awareness associated with poor oral hygiene maintenance and prosthetic and shows that many of them were prone to denture staining and a few were

also wearing stained dentures probably due to lack of awareness⁵⁻¹⁰ The patients needed to be focused on the motivation and education of the patients to assure the long run of the prosthetic.

In our study 20% used toothpaste for denture cleaning which in dispute to study conducted by Peracini A et al^[11] showed that 84.91% of the study subjects used dentifrice. There are many methods of Mechanical and chemical modes to clean the dentures. Toothpaste, Tooth powders, soaps, tablets & sonic cleaners with or without dental brush are the mechanical modes of intervention. Alkaline peroxide, alkaline hypochlorites, disinfecting agents are the chemical modes of intervention. Hypochlorite can be used by immersing overnight for denture cleaning, but due to its bleaching effects it should be used once a week to avoid its effects.^[12,13]

Denture tissue typically exhibits microporosities and micropits, which are home to bacteria that are challenging to eradicate using chemical or mechanical cleaning methods. Additionally, it has been demonstrated that polishing the tissue surface of the denture improves denture hygiene, heals denture stomatitis, and has no effect on denture retention. These findings suggest that polishing the denture's tissue surface should be regarded as a standard procedure in prosthodontic treatment. In the present study majority of the participants reported halitosis, 16% have oral ulcers & 9% have oral infections. 69% of the patients were totally unaware of the importance of Denture cleaning. 41% population were unaware of removing Denture during the night which is similar to the study conducted by Dikbas I et al^[14] The reasoning for night time denture wearers were mainly due to the misapprehension of initial instructions given by dentists to wear during the day & night time for the patients to be well adjusted with the denture & to overcome the discomfort associated with it.

Due to inappropriate awareness, 37% of the study participants were not satisfied with the Denture wear. The proper quality maintenance of the denture was associated with oral infections & denture staining. The Dentists should give an instruction regarding the denture cleaning methods during the delivery of the dentures & periodic review of the patient should be done.

CONCLUSION:

The denture wearers should be given appropriate knowledge and awareness about the maintenance of the denture to prevent the harmful effects and cost-effective denture cleaning methods available in the market. They should also be given proper instructions regarding the ill effects of alcohol, smoking, tobacco, tea, coffee and aerated beverages on denture staining & accumulation of plaque, leading to oral infections, halitosis. For the long lasting endurance of the dentures, the wearers should be given awareness program & instructions about the denture maintenance & professional cleaning services should be done periodically.

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