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A clinical survey of 250 cases on denture hygiene habits and oral tissue conditions of complete denture wearers

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Abstract
Aim: The aim was to assess the denture hygiene knowledge and attitudes among the denture patients.
Material and Methods: A total of 250 denture patients completed a comprehensive questionnaire. All participants signed an informed consent before answering the questionnaire.
Statistical Analysis: Chi-square test for non-parametric study was employed to determine the statistical difference between the two groups. A *P*-value of 0.05 was considered to be statistically significant.
Results: The total sample was 250 which was assorted according to gender, age, and smoking habits to know denture hygiene habits and oral tissue conditions. Most of the patients (98%) clean their dentures everyday. Nearly 73.8% of our subjects remembered instruction given by their dentist. this study reveals that the most of the subject use to remove their dentures during nights. Around 67.9% said that they use tooth brush & paste to clean the denture everyday. In our study we found that the 47.23% of patients have experienced the whitish or reddish patches on the mucous membrane.
Conclusion: Concluding within the limitations of this study, the majority of the denture wearers have limited knowledge of denture cleansing and oral hygiene practices and due to this many patient experience burning sensation sand stomatitis.

Keywords: Oral hygiene, denture, edentulous, oral stomatitis, tooth brush, paste

Introduction
Improvements in medical technology have greatly increased average human life expectancy, shown that patients now have higher chances of becoming totally edentulous and that is one of the reason that the number of fully edentulous patients is still large in present days. Replacement of lost teeth with the complete dentures and returning the functional and esthetic conditions to the patients are the treatment of choice since years. oral hygiene maintenance is a life-long exercise. Newly made dentures could be a disappointment to a patient if he is deficient in maintaining proper denture hygiene [1, 2]. If oral health is to be maintained, daily effective oral hygiene measures should be pursued, failing to do so will result in the inevitable consequences of plaque [3]. There are numerous reports on oral bacteria being the cause of bacterial endocarditis, pneumonia, gastric infections, chronic obstructive pneumonia, and other diseases. The risk of contracting the above-mentioned diseases increases with age. Moreover, the amount of patients who use dentures, which are yet another place of accumulation of microorganisms associated with these infections, rises with age as well [4].
Regardless of the type of prosthesis chosen, the success of treatment outcome depends on the maintenance of proper denture and oral hygiene [5].
The intramucosal surface of the denture base can be the favorable place for the formation of new reservoirs of microorganisms by creating favourable conditions for the buildup of bacteria and fungi in the form of denture plaque. It is a place characterized by high humidity, elevated temperature, reduced oxygen supply, and impaired conditions for salivary self-cleaning.and this leads to initiation of many oral health problems in denture wearer patients such as smomatitis [6-8].
Hence, the purpose of this study was to assess the denture hygiene knowledge and attitudes towards dentures care among denture patients visited in private clinic and some associated hospitals in Jammu. J & K.

Material ant methods

A descriptive, cross‐ sectional survey was conducted from 2015 Nov. to 2017 June, using a self‐ administered questionnaire involving private clinic and some district hospitals in J&K. A total of 250 denture patients participated in the study. These patients were personally approached by very clearly.

The willing was requested to complete a comprehensive closed-ended, self‐ administered questionnaire. The response rate for the study was 98%. The common reason to refuse participation was time constraint.

This questionnaire was designed to gather assess the denture hygiene knowledge, attitudes, and practice advice. This 12 item questionnaire, each of these questions had two options to choose from: Yes and No. The questionnaire took about 15 min to complete.

Data analysis

Data was analyzed using SPSS version 15.0 (SPSS, Chicago, IL, USA). Descriptive statistics were obtained and frequency distribution, means, standard deviation were calculated. Positive mean scores of all the questions were calculated using student's *t* and One-way ANOVA test at p value < 0.05.

Table 1: Questions on denture hygiene habits and oral tissue conditions of complete denture wearers.

Serial number	Questions	Yes (%)	No (%)
1	Do you clean denture every day	98%	2%
2	Do you remember the denture cleaning instructions given by your dentist	73.8%	26.2%
3	Do you rinse every after meal	45.9%	54.1%
4	Do you remove denture at night	83.5%	16.5
5	Do you use brush and paste for cleaning your denture	67.9%	32.1%
6	Do you experience bad smell/halitosis with your denture	44.67%	55.33%
7	Are unhygienic denture a source of infection	34.44%	65.56%
8	Do you feel burning sensation while wearing denture	22.34%	77.66%
9	Do you use oral rinses	48%	52%
10	Do you visit your dentist after regular intervals	79%	21%
11	Have you experienced any white or reddish lesion after denture insertion	47.23%	52.77%
12	Do you smoke	24.7%	75.3%

Table 2: Gender Distribution

Gender	Number	%
Male	136	54.4
female	114	45.6%

Table 3: Shows Percentage (%) Regarding Smoker &Non-Smokers.

	Number	%
smokers	74	29%
Non-smokers	176	70.4%

Results

The total sample was 250 which was assorted according to gender, age, and smoking habits to know denture hygiene habits and oral tissue conditions. Table one shows that the most of the patients (98%) clean their dentures everyday. Nearly 73.8% of our subjects remembered instruction given by their dentist. this study reveals that the most of the subject use to remove their dentures during nights. Around 67.9% said that they use tooth brush & paste to clean the denture everyday. In our study we found that the 47.23% of patients have experienced the whitish or reddish patches on the mucous membrane and the study also reveals that most of patients were smokers those experienced the reddish patch, (table 3) Study also reveals that the female where vary particular regarding the cleanliness of their dentures. About 22.34% subjects experienced the burning sensations in relation to denture. Table 2 reveals that the out of total participant, male were more in numbers then the females.

Discussion

Dentures affect the nature of the oral cavity microenvironment. Alterations to the oral mucosa can result from denture-mediated mechanical irritation, or infl amatory responses induced by denture-related materials [9, 10].

Poor denture hygiene is a seemingly common problem encountered by prosthetic dentists' with their numerous complete denture patients [11]. Therefore, it is very important for dentists' to educate their patients regarding daily denture cleansing regimen to prevent undesirable circumstances. This is where the knowledge and awareness of patients themselves plays an imperative role.

In the present study 100%denture patients use to clean their denture every day and they use the tooth brush and tooth paste (mechanical method) for the cleaning of their denture. Similar results were obtained in previous studies that found that 97% [12] of patients brushed their dentures as the cleaning method of choice. The reason behind the common use of mechanical method with tooth brush and paste could be attributed to the fact that many people use the toothbrush and paste for dental hygiene and could easily adopt this mode of care of their dentures as they transit from dentate to edentulous state [15]. Although combination of both the mechanical and chemical cleaning methods has been reported as the best method to achieve denture cleanliness but mechanical method was found to be more effective than chemical method [16, 17].

On frequency of cleaning denture, 100% of the respondents clean their dentureevery day. These finding were in accordance with the results of Kular-Ozkan *et al*, who reported that 45.7% of denture wearers clean their denture more than once daily. In present study we also found that the female patients are more concern about the cleanliness of their dentures this may also be attributed that the females are more concerned about their looks [18]. On asking about the experience of bad smell or halitosis with the dentures, about 44.67% people mark their answer in yes, this may be due to lack of efficiency in denture cleaning habbits.

In present study we observed that about 83.5% patients use to remove their dentures in night, The results of present study were in disagreement with the results obtained in previous studies in which 41.5% [19] and 64% [20]. Of patients, respectively, did not remove their dentures at bedtime. Baran and Nalçaci [21]. Also showed that 55.2% of patients slept with their dentures. Marcus *et al*. [22] found that nearly one third of

the participants of their study slept with both dentures, and 12% slept with the lower denture only.

Data analysis in this study showed that 22.34% of patients had experience the burning sensations and erathematous patches with their dentures and the results are in accordance with the results found by Jeganathan *et al*. who found that denture-induced stomatitis was more common in patients with continued use of the dentures (61%) when compared to controls with healthy mucosa (18%) [12]. Dentures affect the nature of the oral cavity microenvironment [1]. Alterations to the oral mucosa can result from denture-mediated mechanical irritation, or infl amatory responses induced by denture-related materials.

In addition, biofi lm formation on denture surfaces, accom panied by subsequent allergic reactions resulting from microbial colonization and/or their secreted metabolites, further affects the nature of the oral microenvironment [9, 10, 23].

Conclusion

Concluding within the limitations of this study, the majority of the denture wearers have limited knowledge of denture cleansing and oral hygiene practices and due to this many patient experience burning sensation sand stomatitis. Patients should be motivated and instructed by the dentists about denture cleansing methods, materials, and the harmful effects of overnight wearing and accumulation of microbial plaque and debris on the denture and mucosal surfaces. Periodic recall for evaluation of denture and mucosal surfaces along with reinforcement of denture hygiene instructions will help the patients for longer period of time.

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