

Evaluation of Patients Tongue Cleaning Practices Among Aged 18 Years to 60 Years Visiting Dental College in Bhilai Chhattisgarh.

Abstract:

The aim of this study was to assess the tongue cleaning habit among the people to maintain and improve the quality of oral hygiene. This cross-sectional study was conducted in outpatient department of Rungta College of Dental Sciences and Research, Department of Community Dentistry among 334 patients 197 female and 137 male between 18-60 years. The self-administered questionnaire consisted of two parts. The first part consisted of socio-demographic details of participants (age, sex, education and occupation). The second part consisted of 14 questions related to tongue cleanliness behavior. Self-constructed questionnaire was adopted from previous study. Data analysis was done by using SPSS 20 version and descriptive statistics were calculated. Out of total 334 participants, 62.5% had a tongue cleaning habits. Around seventy one percent participants cleaned the tongue every day. About two-thirds 60.7% used toothbrush. Nearly 76.1% of the participants took 15-30sec for tongue cleaning. Fifty percent cleaned the entire tongue. Seventy percent started the tongue cleaning about a year ago. Nearly 62.6% respondent cleaned tongue on their own without any suggestion from other persons. Nearly more than half 78.4 % had gagging reflex by using the tongue cleaner. About 50.6% drinking tea / coffee had tongue-cleaning habits.

Key words: Oral Hygiene, Tooth brush, Tongue cleaning Habits

Introduction:

Oral hygiene Plays an important role for maintaining the supporting structures of the oral cavity.[1] Maintaining good oral hygiene is considered to improve the quality of oral tissues and prevent from the diseases in the early stage of life.[2] Good oral hygiene maintain healthy mouth and prevents 80% problem of the oral cavity.[3] Healthy oral cavity is of great significance for an individual's overall health and well-being. Further, it enables an individual to masticate, speak and socialize without any active discomfort or embarrassment.[4] Dental problems identified but still at present the prevention and treatment of oral diseases is virtually unavailable to the rural and underprivileged population due to various educational, cultural and socioeconomic burdens.[5] Tongue play a important role and it has been used in decades.[6] A very few research done on tongue cleanliness have been published, may be because of the need to concentrate on the protection and treatment of the hard

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dental tissues and their supporting structures. Since few years scientific knowledge of tongue biofilm, tongue hygiene and its relationship with halitosis, including therapeutic implications increased.[7] The tongue occupies about a third of the surface area of the oral cavity. Papillary structure of its dorsum makes it the largest oral surface and favors the accumulation of small particles. Consequently, the tongue dorsum harvests mostly oral microbes that aggregate with detached epithelial cells, food, and saliva and serum components, forming a layer of so-called tongue coating.[8,9] Tongue cleaning should be done in the morning every day.[10] For instance, the microbial composition of saliva stimulated by chewing is very similar like the tongue dorsum, and the pH of the oral cavity has been associated with the appearance of the tongue.[11,12] Furthermore, tongue coating is increased in periodontal disease.[10,13] Associated bacteria present in tongue coating have been closely associated with those in dental plaque.[14,15] Therefore, it is likely that the bacteria in the coating of the tongue act as a reservoir via the saliva for those in the plaque biofilm on the teeth.[16] Hence, the purpose of this study was to assess the tongue cleaning habit among the Residents of Bhilai city.

Materials and Methods:

An Observational Study was carried out over a period of six months (June to November 2024) in outpatient department of Department of Community Dentistry. Institutional Research Committee (IRC) approval was taken (IRC Ref No. RCDSR/IEC/MDS/2024/S-05) before carrying out the study and written consent were obtained. A total number of 334 patients belonging to age group 18-60 years and who were willing to participate in the study were included in the study. Convenience sampling technique was used. Data was collected by interview method by using questionnaire. The questionnaires were adopted from previous studies and modified after consultation with the experts related to the filed.¹⁷ The self-administered questionnaire consisted of two parts and translate from English to Hindi language. The first part consisted of socio-demographic details of participants (age, sex, education and occupation). The second part consisted of 14 questions related to tongue cleanliness behavior. Exclusion criteria included disabled people with limited manual dexterity and illiterate people. Data analysis was done by using SPSS 20 version and descriptive statistics were calculated.

Results:

Socio-demographic characteristics of the respondents: This research revealed out of total 334 participants around more than half were female 197 (58.9%) and the remaining were

male 137(41.1%). According to education status out of 334 majority of them had attained a to primary school level of education 144(43.1%), 20 (5.9%) post-graduate, high school 100 (29.9 %) and graduate 70 (20.9%). As to the occupational status out of 334, just under half of the subjects were doing private jobs 156(46.7%), 143(42.8%) unemployed and, 35(10.4%) had a government job.

A total of 334 participants, 209 (62.5%) reported a tongue cleaning habits. Among 150 (71.7%) participants cleaned the tongue everyday. Among 209 participants, about two-thirds 127 (60.7%) used a toothbrush, 45 (21.5%) tongue scraper, 37 (17.7%) tongue brush. Around 159(76.1%) participants spent 15-30 seconds on tongue cleaning where few spent minutes 50 (23.9%) for tongue cleaning. Out of 209 participants half 104 cleaned the entire tongue, 105 (50%) cleaned the center of the tongue alone. Out of 209 participants, started 147 (70.3%) cleaning the tongue about a year ago, 32 (15.3%) started a month ago and 30 (4.3%) within last month. About three-fourths 131(62.6%) of the participants started the tongue cleaning due to personal information, others 50 (24%) were recommended by a dental professional followed by public information 28 (13.4%).

Out of 209 participants 88 (42.1%) believed that tongue cleaning prevented tongue coating whereas 64 (30.6%) believed that it prevented malodor, and 57 (27.2%) thought it prevented tongue stains. Tongue coating reduction using tongue cleaner was experienced by 195 (93.3%). Out of 209 participants reduction of tongue stains while using the tongue cleaner was 192 (91.8%). A total of 175 (82.3%) experienced reduction in the level of bad breathe. Majority of the participants experienced 164 (78.4%) gagging reflex using the tongue cleaner. Out of 334 majority of the participants were non-smokers 225 (67.3%) whereas among 334 drinking tea/coffee 285 (85.3%) (Table 1).

Out of 70 current smokers, 30 (42.8%) had tongue cleaning habits whereas among 264 non-smokers, 145 (54.9%) had tongue cleaning habit (Table 2).

Out of 277 people who were drinking tea / coffee, 140 (50.6%) had tongue cleaning habits which was similar among non-smokers, 32 (56.1%) (Table 3).

Discussion:

This study assessed the tongue cleaning habit among the patients visiting a dental hospital in Bhilai. Our study showed that over half were having tongue cleaning habit which is

similar to study conducted in public health center in adult population in Japan.[17] Present study findings supports that most of the participants had a habit of tongue cleaning everyday which correspond with the study conducted in Italy and Brazil in 18 to 50 years adults.[18,19] Pedrazzi *et al*[20] and Buunk *et al*[21] conducted a study in adults population in Netherland with a habit of tongue cleaning with toothbrush which was similar to our findings. Van der sleen *et al*[22] conducted a study in Amsterdam population who clean their tongue within 15-30 sec similar to our presents study.

Regarding the duration of tongue cleaning majority of the participants started cleaning cleans about an year ago as well as the reason to clean their tongue was similar to the previous study.¹⁷ There is lack of available evidence with regards to the effects of tongue cleaning; reasons could be poor contribution of dental health professional regarding information about tongue cleaning.[23-25]

Yaegaki and Sanada, Quirynen *et al* and Bosy *et al*, in adult population in Toronto for the removal of the tongue coating markedly reduces both volatile sulphur compounds production and H₂S/methyl mercaptan ratio, not only in orally healthy subjects but also in patients with periodontal disease is similar to our study. Some studies show that tongue brushing and tongue cleaning diminishes the percentage of volatile sulphur compounds in patients suffering from malodor suggesting the participants had a knowledge of tongue cleaning since Prevention of oral malodor is widely accepted similar to our findings.[28,29]

Study conducted by Christensen, regarding the tongue cleaning is placed on posterior site force is applied on the scrapper to flatten the tongue so the person feel gag, therefore practice is required to find the right positioning and to minimize gag response which is similar to our study.[6]

Looking the overall hygiene of the patients because of lack of knowledge, awareness leads to poor oral hygiene is more common, although the people were aware but still were not interested to maintain oral hygiene.³⁰ The results of the present study is similar to other study regarding the tongue –cleaning habits in tea/coffee drinkers.[31]

Conclusion:

Tongue cleaning using a toothbrush was performed in several different ways for different purposes. There are many new technologies available in market, still awareness should be raised regarding the habits of cleaning the tongue and maintaining the proper oral hygiene.

Table 1 Shows Tongue Cleaning Practices among the participants

Tongue Cleaning Habits		N (334)	%
Yes		209	62.5%
No		125	37.5%
Frequency of cleaning tongue		150	71.7%
Every day		59	28.3%
Sometimes			
Material used for cleaning tongue		127	60.7%
Tooth brush		37	17.3%
Tongue brush		45	22%
Tongue scrapper			
Time spent on tongue cleaning session		159	76.1%
Second		50	23.9%
Minutes			
Portion of tongue do you clean		104	49.7%
Center of the dorsum of the tongue		105	50.3%
Entire tongue(anterior, posterior,lateral,ventral and dorsal)			
Duration of starting tongue cleaning		147	70.4%
About a year ago		32	15.3%
About a month ago		30	4.3%
Within last month			
Reasons for starting tongue cleaning		50	24%
Recommended by dental professionals'		28	13.4%
Public information (eg TV/radio/magazine)		131	62.6%
Personal information (eg recommended by friends)			
Outcome expected from tongue cleaning		57	27.2%
Prevention of tongue stain		88	42.1%
Prevention of tongue coating		64	30.6%
Prevention of Malodor			
Experience of any reduction of tongue coatings while using the tongue cleaner		195	93.3%
Yes		14	7.7%
No			
Experience of any reduction of tongue stains while using the tongue cleaner		192	91.8%
Yes		17	8.2%
No			
Experience of any reduction in the level of bad breath after using the tongue cleaner		175	82.3%
Yes		37	17.7%
No			
Experience of any gagging reflex while using the tongue cleaner		164	78.4%
Yes		45	21.6%
No			
Current smoker		109	32.7%
Yes		225	67.3%
No			
Drink tea coffee		285	85.3%
Yes		49	14.7%
No			

Table 2 Shows Tongue Cleaning Habits Among the Smokers

Current Smokers Yes (%)	No (%)	Total
Yes 30(42.8)	40(57.2)	70
No 145(54.9)	119(45.1)	264

Table 3 Shows Tongue Cleaning Habits among the tea drinking/ Coffee

Drink Tea/Coffee Yes (%)	No (%)	Total
Yes 140(50.6)	137(49.4)	277
No 32(56.1)	25(43.9)	57

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