Oral Hygiene Practices among Patients from Different Socioeconomic Status: An Observational Study

Dr. Shruti Tyagi[1*], Dr. Niranjana Prasad Indra B[2], Dr. S. Gokkulakrishnan[3], Dr. Bhart Vashishth[4]

[1]Junior Resident, Department of Oral and Maxillofacial Surgery IDS Bareilly, Uttar-Pradesh, India.
[2]Professor, Department of Oral and Maxillofacial Surgery IDS Bareilly, Uttar-Pradesh, India.
[3]Professor and Head of Department, Oral and Maxillofacial Surgery IDS Bareilly, Uttar-Pradesh, India.
[4]Senior Resident, Department of Oral and Maxillofacial Surgery IDS Bareilly, Uttar-Pradesh, India.

ABSTRACT

Aim: To assess the differences in oral hygiene practices among patients from different socioeconomic status visiting the outpatient department of the Institute Of Dental Sciences, Bareilly.

Material and Method: An observational study was conducted in the month of May 2024 to assess the effect of SES on oral hygiene habits. The questionnaire included questions related to the demographic profile and assessment of the oral hygiene habits of the study population. The SES of the population was assessed using modifyied kuppuswamy scale which is based on per capita income per month, educational status, and occupational status of the study population.

Result: A total of 128 individuals were included out of which the mean age of the study population was 41-50 years with an average percentage of about 28.9%.Out of all 60.2% of male and 39.8% of female population were included. The study population comprised 14.8% of patients belonging to the lower class, 66.4% belonging to the upper lower class, 16.4% belonging to a lower middle class, and 2.3% patients belonging to the upper middle class.

Conclusion: The oral hygiene practices among the patients belonging to the upper-lower class were found to be satisfactory when compared to the lower and middle-class populations. The percentage of people using oral hygiene aids other than toothbrush and toothpaste was very less. Therefore, education and motivation among the people about the oral hygiene maintenance along with proper selection and use of the various oral hygiene aids is necessary in order to maintain aqeduate oral health.

Keywords: Oral Hygiene, Oral Habits, Oral Health, Toothpaste.

Address of Corresponding Author
Shruti Tyagi; Department of Oral and Maxillofacial Surgery IDS Bareilly, Uttar-Pradesh, India.
E-mail: tyagishruti965@gmail.com
Crossref Doi: https://doi.org/10.36437/irmhs.2025.8.1.E

Introduction

Health is multifactorial, mainly influenced by factors such as genetics, lifestyle, environment, socioeconomic status (SES), diet, chronic stress, systemic illness, and many others. Health cannot be isolated from its social context. The socio-economic status (SES) is an important determinant of the health, nutritional status, mortality, and morbidity of an individual. SES also influences the accessibility, affordability, acceptability, and actual utilization of available health facilities.[1]

Oral health is always an inseparable part of general health and several studies in the past have revealed an association between socioeconomic factors and oral health. The need and demand for clear scientific evidence to inform and support the oral health policy-making process is greater than ever. Over the last decade, there are differences in the oral health status between the individuals with a high SES and those with a low SES had markedly increased.[2]

There are many different scales to measure socioeconomic status. B G Prasad classification is

a scale based on per capita monthly income and has been used extensively in India. In rural areas Pareek classification based on nine characteristics which are caste, occupation, education, level of social participation of the head of the family, landholding, housing, farm power, material possession, and total members in the family is widely used. Modified Kuppuswamy scale 2 is commonly used to measure the SES in urban communities. The scale includes the education, occupation of the head of the family, and income per month from all sources.[1,2]

The main causes of inequalities (in oral health) are differences in patterns of consumption of non milk extrinsic sugars and fluoridated toothpaste. Improvements in oral health that have occurred over the last 30 years have been largely a result of fluoride toothpaste and social, economic and environmental factors. Oral health inequalities will only be reduced through the implementation of effective and appropriate oral health promotion policy. Treatment services will never successfully tackle the underlying cause of oral disease.[3]

A growing amount of evidence indicates that general and oral health are influenced by socioeconomic status. It seems that socioeconomic factors have an indirect influence through environmental factors and impact disease processes through psychosocial stress and health-related habits. Educational background, socioeconomic status, gender, level of education, employment status, household income, smoking habits, and dental service usage have already been identified as factors influencing oral health. Also, a clear socioeconomic gradient in health behaviour has been established, indicating that individuals with lower educational levels report a higher frequency of health-compromising behaviours.[4]

In this background, the present study will be conducted with the aim to compare oral hygiene among different groups of socioeconomic status of the population.

Material and Method

This observational study was done to assess the effect of SES and oral hygiene habits. The study was conducted in the Department of oral and Maxillofacial Surgery, Institute of Dental Sciences Bareilly, for duration of one month (May 2024).

The questionnaire included information related to the patient's age, gender, occupation, and residential area. The oral hygiene habits of the study population were assessed including the use of oral hygiene aid, frequency of cleaning teeth, duration of cleaning teeth, frequency of changing toothbrush, rinsing of mouth with water, use of mouthwash, and tongue cleaning aid used.

The SES of the population was assessed using a modifyied kuppuswamy scale which is based on per capita income per month, educational status, and occupational status of the study population.

A total of 128 patients visiting the Department of Oral and maxillofacial surgery were included in the study. The study included all the systemically healthy individuals aged above 18 years and the patients willing to give informed consent. Patients with a history of systemic disease (debilitating disease or any condition having a substantial effect on oral health), Pregnancy and lactation or the patients Undergone oral prophylaxis during the past 6 months were excluded from the study.

Ethical clearance

The ethical clearance was obtained from the institutional ethical committee of the Institute of Dental Sciences, Bareilly. Participation information sheet and informed consent were taken for the respective participants.

Statistical Analysis

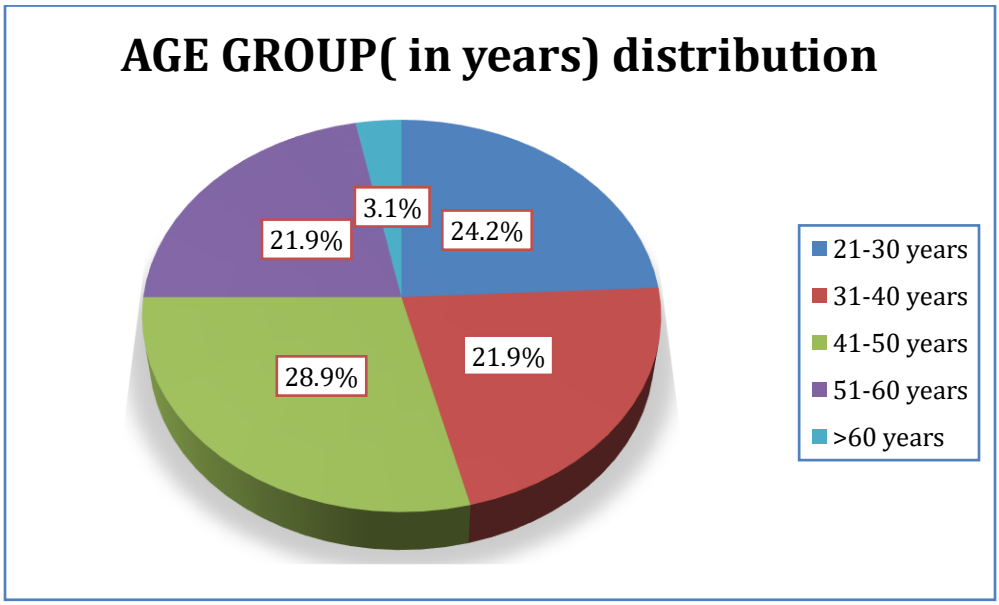
Data was entered in the Excel spreadsheet. Descriptive statistics like mean, standard deviation, and percentage were calculated. Inferential statistics like t-tests - Means: Wilcoxon signed-rank test (matched pairs) was used to find out the statistical difference among the two groups using SPSS (statistical package for social sciences) version 24. (IBM SPASS statistics [IBM

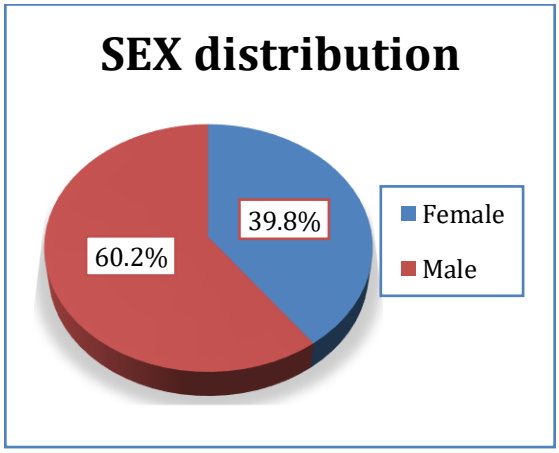
Corp. Released 2011] any other necessary tests were dealt at the time of analysis based on data distribution using normalcy tests.

Result

A total of 128 individuals were included out of which the mean age of the study population was 41-50 years with an average percentage of about 28.9%. Out of all 60.2% of male and 39.8% of female population were included. The study population comprised 14.8% of patients belonging to the lower class, 66.4% belonging to the upper lower class, 16.4% belonging to the lower middle class, and 2.3% of patients belonging to the upper middle class. (Table-1)

There was a significant association between the Kuppuswamy SES scale and maintaining oral hygiene. The cleaning of teeth being performed significantly (P -0.000) more by the upper lower class (85.0%) and lower middle class (21.0%) in comparison to the lower class and upper middle class. [Table 2]

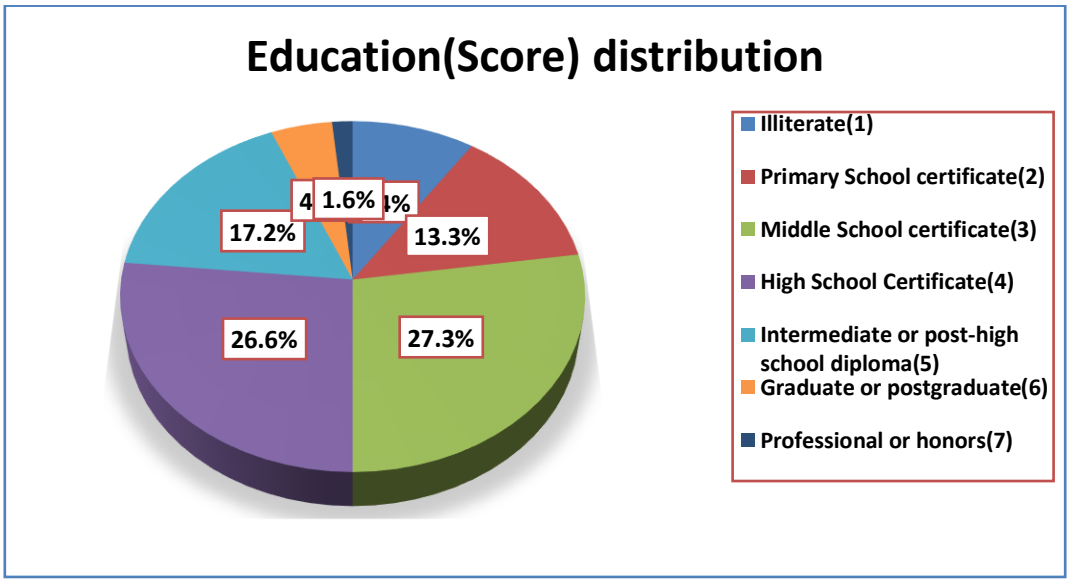


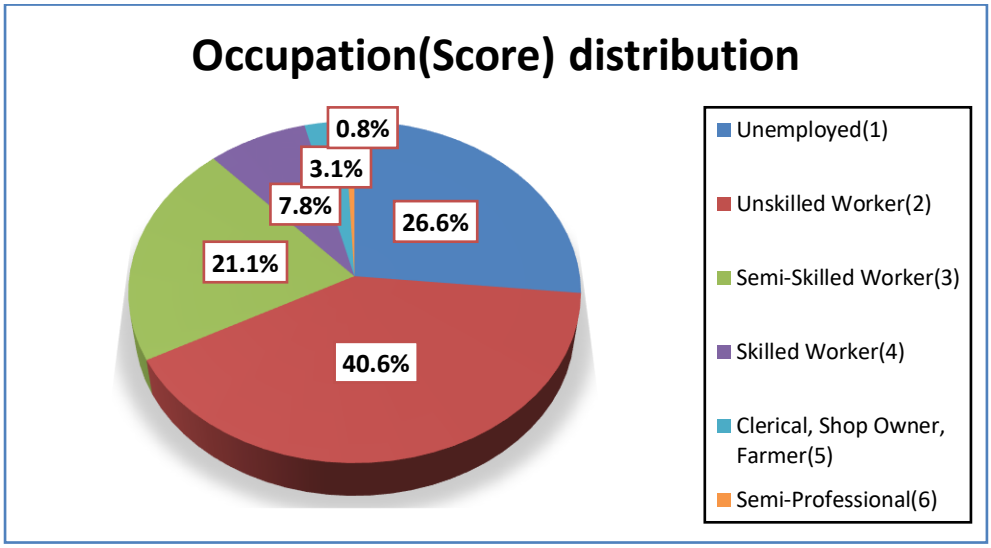


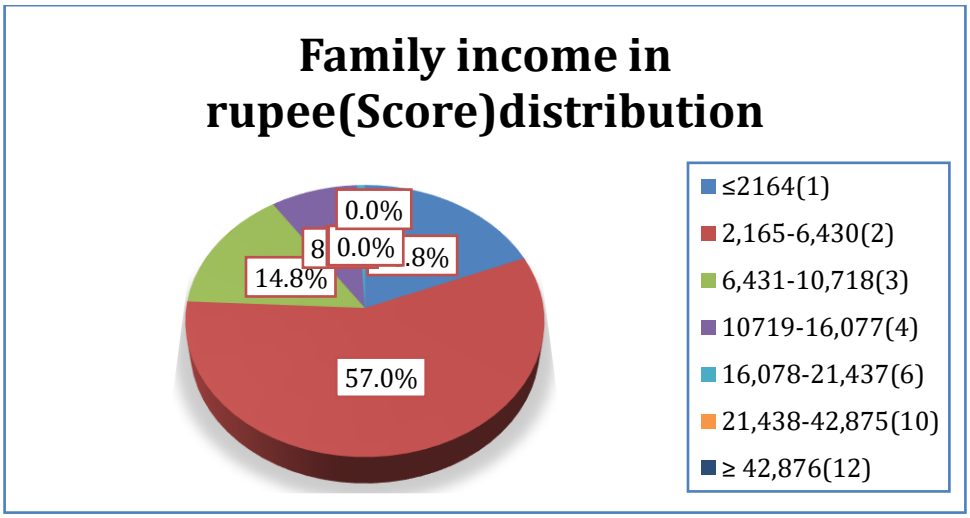
DEMOGRAPHIC CHARACTERSTIC	FREQUENCY %
Age group (years)	

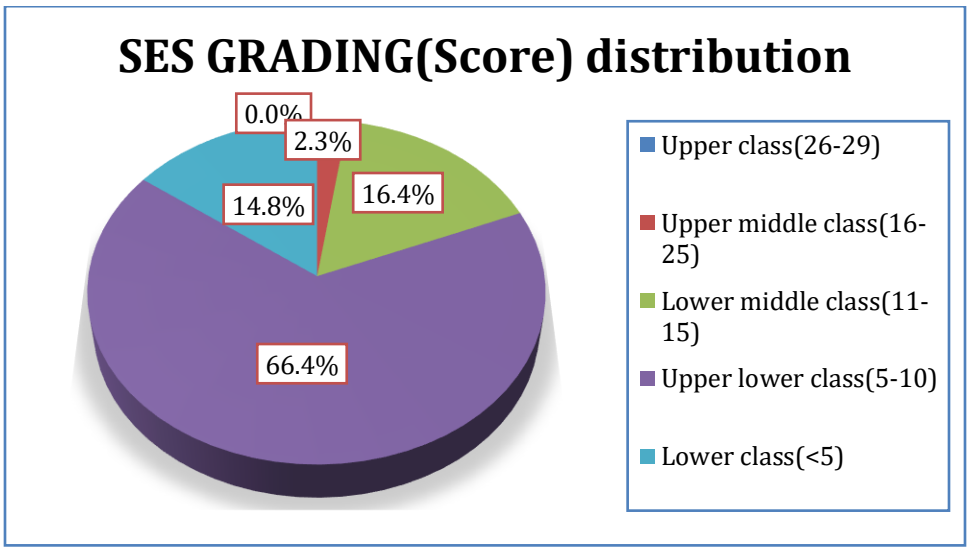
21-30 years	**24.2%**
31-40 years	**21.9%**
41-50 years	**28.9%**
51-60 years	**21.9%**
>60 years	**3.1%**
Total	**100%**
Gender	**60.2%**
MALE	
FEMALE	**39.8%**
Total	**100%**
Education	**9.4%**
Illiterate	
Primary school certificate	**13.3%**
Middle school certificate	**27.3%**
High school certificate	**26.6%**
Intermediate or post- high school diploma	**17.2%**
Graduate or postgraduate	**4.7%**
Professional or honors	**1.6%**
Total	**100%**
Occupation	**26.6%**
Unemployed	
Unskilled worker	**40.6%**
Semiskilled worker	**21.1%**
Skilled worker	**7.8%**
Clerical, shop owner, farmer	**3.1%**
Semi- professional	**0.8%**
Total	**100%**
Family income in rupee	
<2164	**18.8%**
2,165-6,430	**57.0%**
6,431-10,718	**14.8%**
10,719-16,077	**8.6%**
16,078-21,437	**0.8%**
21,438-42,875	**0.0%**

>42,876	**0.0%**
Total	**100%**
SES grading distribution	
Upper class (26-29)	**0.0%**
Upper middle class (16-25)	**2.3%**
Lower middle class (11-15)	**16.4%**
Upper lower class (5-10)	**66.4%**
Lower class (<5)	**14.8%**
Total	**100%**









Toothbrush and toothpaste were being used significantly (P =0.031) more by the upper lower class (46%) and lower middle class (17.0%) in comparison to the lower class and upper middle class. The use of neem stick/datoon was reported by the patients belonging to the upper lower class (11%) and lower class only (1%). The use of no cleaning aids for personal oral hygiene was reported to be significantly more among the patients belonging to the lower class (7%) and upper lower class (16%) [Table 2]. A significant association was reported between the Kuppuswamy SES scale and the frequency of cleaning the teeth. A significantly higher frequency of cleaning teeth (once a day) was reported among the upper lower class (62%) and lower middle class (13%) in comparison to the lower class (6%) and upper middle class (2%). [Table 2]

There was a significant (P =0.065) relationship between the Kuppuswamy scale and the duration of cleaning the teeth. The performing of oral hygiene for<1min was noted more among the upper lower class (51%) and lower middle class (14%) and 1-3min was reported to be significantly more among the patients belonging to the upper lower class and lower middle class (14% and 5%, respectively). [Table 2]

There was a significant relationship between the Kuppuswamy scale and the frequency of changing the toothbrush. The majority of the study population changed their toothbrush once a month (45%), followed by every 3 months and once a year respectively (27% and 27%). More number of patients from the lower middle class (45.8% and 36.5%, respectively) and upper middle class (20.3% and 54.4%, respectively) changed their toothbrushes once every 3 months and once a month whereas significantly ($P < 0.05$) more number of patients from the lower class (42.2%) and upper lower class (21.6%) changed their toothbrush once every 6 months. [Table 2]

The use of mouthwash was reported by patients belonging to the upper lower class (50.0%), lower middle class (14%), and upper middle class (3%). There was a statistically significant difference among the patients from different SES.[Table 2]

The majority (88%) of the study population rinsed their mouth with plain water after meals. The rinsing of the mouth with water after meal was found to be significantly more among upper-lower class patients (60%) in comparison to the patients from other socioeconomic classes.[Table 2]

Result

	Kuppuswami SES scale (%)						
	Upper middle class	Lower middle class	Upper lower class	Lower class	Total	Chi-Square Value	P-Value
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)		
Q.1) Do you clean your teeth?							
Yes	3(100)	20(95)	68(80)	8(42)	99(77)	18.522	0.000*
No	0(0)	1(5)	17(20)	11(58)	29(23)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.2) How do you clean your teeth/ cleaning aid used?							
Toothbrush and toothpaste	3(100)	17(81)	46(54)	6(32)	72(56)	26.788	0.031*
Neemstick/ datoon	0(0)	0(0)	11(13)	1(5)	12(9)		
Toothbrush and toothpowder	0(0)	1(5)	6(7)	1(5)	8(6)		
Toothpaste and finger	0(0)	1(5)	4(5)	0(0)	5(4)		
Any other aid used	0(0)	1(5)	2(2)	4(21)	7(5)		
No aid used	0(0)	1(5)	16(19)	7(37)	24(19)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.3) what is the frequency of cleaning your teeth?							
Once a day	2(67)	13(62)	62(73)	6(32)	83(65)	37.395	0.000*
Twice a day	1(33)	7(33)	6(7)	1(5)	15(12)		

Less than once a day	0(0)	0(0)	3(4)	5(26)	8(6)		
Never	0(0)	1(5)	14(16)	7(37)	22(17)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.4) Duration of cleaning teeth (in minutes)?							
<1	2(67)	14(67)	51(60)	7(37)	74(58)	16.081	0.065#
1-3	1(33)	5(24)	14(16)	2(11)	22(17)		
3-5	0(0)	1(5)	3(4)	0(0)	4(3)		
>5	0(0)	0(0)	0(0)	0(0)	0(0)		
Never	0(0)	1(5)	17(20)	10(53)	28(22)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.5) Frequency of changing of toothbrush?							
Once in a year	1(33)	10(48)	16(19)	0(0)	27(21)	29.720	0.000*
Every month	2(67)	7(33)	30(35)	6(32)	45(35)		
Every 3 month	0(0)	3(14)	22(26)	2(11)	27(21)		
Every 6 month N/A	0(0)	1(5)	17(20)	11(58)	29(23)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.6) Do you use mouthwash?							
YES	3(100)	14(67)	50(59)	6(32)	73(57)	8.190	0.042*
NO	0(0)	7(33)	35(41)	13(68)	55(43)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.7) Do you rinse your teeth with plain water?							
Yes	3(100)	20(95)	74(87)	15(79)	112(88)	2.864	0.413#
No	0(0)	1(5)	11(13)	4(21)	16(13)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.8) Time of rinsing?							
After every meal	3(100)	15(71)	60(71)	10(53)	88(69)	8.515	0.483#
Occasionally, if their is discomfort	0(0)	2(10)	12(14)	3(16)	17(13)		
Before going to bed	0(0)	3(14)	3(4)	2(11)	8(6)		
Do not rinse	0(0)	1(5)	10(12)	4(21)	15(12)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.9) Do you clean your tongue?							
Yes	3(100)	14(67)	51(60)	7(37)	75(59)	6.459	0.091#
No	0(0)	7(33)	34(40)	12(63)	53(41)		

Total	3(100)	21(100)	85(100)	19(100)	128(100)		
Q.10) What do you use as a tongue cleaner?							
Tongue cleaner	1(33)	6(29)	13(15)	3(16)	23(18)	11.776	0.226#
Toothbrush	2(67)	6(29)	24(28)	4(21)	36(28)		
Finger	0(0)	2(10)	14(16)	0(0)	16(13)		
None	0(0)	7(33)	34(40)	12(63)	53(41)		
Total	3(100)	21(100)	85(100)	19(100)	128(100)		

*statistically significant, # statistically not significant.

Discussion

The present study reinforces the association between socioeconomic status and oral hygiene practices among the population of Bareilly. The oral hygiene practice occurs heterogeneously in different social groups. The distribution of oral diseases in the population is unequal, and it is considered an inequality in health. A large proportion of the study population cleaned their teeth on a routine basis. Out of which high proportion is noted in the upper lower class. Toothbrush and toothpaste (54%) were the most commonly used aid in the present study followed by usage of neemstick/datoon (13%) and toothbrush and toothpowder (7%). The toothbrush and toothpaste use is the most effective way of cleaning the teeth and maintaining oral hygiene. To maximize oral health, the American Dental Association recommended that individuals should brush twice and floss at least once a day and must have a regular prophylactic dental visits.

In the present study, once-daily cleaning of teeth was performed by the majority of subjects however few subjects cleaned their teeth twice daily. The higher socioeconomic strata usually represent the people with better educational levels thus leading to a better comprehension and awareness level. This might be the reason for twice daily practice to be more common among higher socioeconomic strata. The best oral hygiene practices are brushing twice daily with fluoridated toothpaste. Out of all, a majority of the 60% population belonging to the upper lower class were cleaning teeth for about 1 minute and 24% of subjects were brushing teeth for duration of 1-3 minutes.

The frequency of changing of toothbrush once in a year was noted to be more in upper lower class population contributing to about 16. Followed by lower middle class subject which constitutes a frequency of about 10. In the present study, The use of mouthwash was reported significantly more by patients belonging to the upper lower class (50) which is followed by the patients from the lower middle class (14) were using a mouthwash. Rinsing the mouth with plain water after every meal was found to be more in subjects (60) of the upper lower class followed by the lower middle class (15). This basic habit of oral hygiene was found to be quite among this study population.

The cleaning of the tongue was reported by patients belonging to the upper lower class (51), and lower middle class (14). This basic and simple method of maintaining oral hygiene is not very much popular among the study population which shows a lack of oral health awareness. The use of another tongue cleaning aid such as tongue cleaner, toothbrush, mouthwash, or floss is beneficial for maintaing good oral hygiene. Creating awareness, and providing education to the population is mandatory for maintaining good oral health.

Conclusion

In the present study, the oral hygiene practices among the patients belonging to the upper-lower class were found to be satisfactory when

compared to the lower and middle-class populations. The percentage of people using oral hygiene aids other than toothbrush and toothpaste was very less. Therefore, education and motivation among the people about the oral hygiene maintenance along with proper selection and use of the various oral hygiene aids is necessary in order to maintain aqeduate oral health. The Modifyied Kuppuswamy scale provides a detailed analysis of the evaluation of oral hygiene and comparing with SES of the population. The development and implementation of well-structured dental health education programs on a periodic basis are needed to improve and maintain suitable oral health standards among municipal employees with special emphasis on the lower SES strata.

References

1. Majumder S. Socioeconomic status scales: Revised Kuppuswamy, BG Prasad, and Udai Pareekh's scale updated for 2021. Journal of Family Medicine and Primary Care. 2021 Nov;10(11):394-8. doi: https://doi.org/10.4103/jfmpc.jfmpc_600_21
2. Shaikh Z, Pathak R. Revised Kuppuswamy and BG Prasad socio-economic scales for 2016. Int J Community Med Public Health. 2017 Apr;4(4):996-9. doi: https://doi.org/10.18203/2394-6040.ijcmph20171313
3. Oberoi SS, Sharma G, Oberoi A. A cross-sectional survey to assess the effect of socioeconomic status on the oral hygiene habits. Journal of Indian Society of Periodontology. 2016 Sep;20(5):531-35; doi: https://doi.org/10.4103/0972-124X.201629
4. Persic Bukmir R, Paljevic E, Pezelj-Ribaric S, BrekaloPrso I. Association of the self-reported socioeconomic and health status with untreated dental caries and the oral hygiene level in adult patients. Dental and Medical Problems. 2022 Dec;59(4):539-45. doi: https://doi.org/10.17219/dmp/138908
5. Masthi NR, Kulkarni P. An exploratory study on socioeconomic status scales in a rural and urban setting. Journal of family medicine and primary care. 2013 Jan;2(1):69-74; doi: https://doi.org/10.17219/dmp/138908
6. Sharma R, Saini NK. A critical appraisal of Kuppuswamy's socioeconomic status scale in the present scenario. Journal of family medicine and primary care. 2014 Jan;3(1):35-39; doi: https://doi.org/10.4103/2249-4863.130248
7. De Lucena EH, da Silva RO, Barbosa ML, de Araújo EC, Pereira AC, Cavalcanti YW. Influence of socioeconomic status on oral disease burden: a population-based study. BMC Oral Health. 2021 Dec;21:1-8.
8. Booth J, Erwin J, Burns L, Axford N, Horrell J, Wheat H, et al., A Scoping Review of the Oral Health Status, Oral Health Behaviours and Interventions to Improve the Oral Health of Children and Young People in Care and Care Leavers. Dentistry Journal. 2024 Feb 9;12(2):38-43. Doi: https://doi.org/10.3390/dj12020038

How to cite this Article: Shruti Tyagi, Niranjana Prasad Indra B, S. Gokkulakrishnan, Bhart Vashishtha; Oral Hygiene Practices among Patients from Different Socioeconomic Status; Int. Res. Med. Health Sci., 2025; (8-1): 36-45; doi: https://doi.org/10.36437/irmhs.2025.8.1.E
Source of Support: Nil, **Conflict of Interest:** None declared.
Received: 15-01-2025; **Revision:** 13-03-2025; **Accepted:** 16-03-2025