

Assessment of Periodontal Status in Different Socioeconomic Groups Using Community Periodontal Index Of Treatment Needs

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Abstract

Purpose: To determine the association between the socio-economic status and the periodontal health of the people visiting Mahatma Gandhi Dental College & Hospital, Jaipur.

Materials and methods: A cross-sectional study that evaluates the oral hygiene habits and the periodontal health of the people of different socio-economic groups visiting Mahatma Gandhi Dental College & Hospital, Jaipur. Modified Kuppuswami's Socio-economic Status Scale [2014] is used to evaluate the socio-economic status of the person. The oral hygiene habits are assessed with the help of a questionnaire. Mouth mirror & CPITN probe are used to determine the periodontal health of an individual through Community Periodontal Index of Treatment Needs. The data so obtained will be analysed through appropriate statistical analysis required.

Statistical analysis: Chi-square test. **Results:** Periodontal diseases were more prevalent among the lower socioeconomic groups and also they were less conscious towards their oral health and care as compared to upper class showing statistically significant difference [$p < 0.001$].

Conclusion: The study revealed a strong association between socioeconomic groups and the periodontal conditions. CPITN and Treatment Need scores varied significantly according to different socioeconomic groups [$p < 0.001$].

Key Words: Socioeconomic status, Periodontal health, Community Periodontal Index Of Treatment Needs.

Introduction

India is a vast country having various diversities, not only in colour, caste, religion, but also in socioeconomic status. Socioeconomic status defines many factors about an individual like his education, occupation, income, and also to an extent his personal hygiene and oral care. The socioeconomic inequality leads to many diseases which may be because of lack of hygiene or money to get treated. Periodontal diseases are one of them. Gingival and periodontal conditions have been considered responsible for various systemic disorders and hence proper oral hygiene maintenance becomes an integral part of the personal hygiene routine to stay healthy.^[1] Many indices have been formulated over the years for quantification of the prevalence and severity of the periodontal diseases.^[2,3] World Health Organisation [WHO] and Federation Dentaire Internationale [FDI] in the year 1982 jointly developed Community Periodontal Index of Treatment Needs [CPITN] for classifying periodontal conditions with respect to the complexity of care and oral health personnel required to restore periodontal tissues to a healthy condition. It has been frequently used since then in many epidemiological studies.^[4]

Materials & Methods

This is a short cross-sectional study which is conducted in the department of Periodontology, Mahatma Gandhi Dental College & Hospital, Jaipur during the month

of February and March 2015. The sample size for the study was 167 [107 males; 60 females] patients within the age group of 20-60 years visiting the hospital. Patients who had undergone oral prophylaxis within last 3-6 months and those who refused to share their personal details were excluded from the study. Informed consent was obtained from each participant. Personal details including their oral hygiene measures, dental awareness, habits, education, occupation, monthly family income etc., were recorded using a questionnaire. Oral examination is conducted using mouth mirror, CPITN-C probe and illuminated light source to record the CPITN scores. Only sterilised instruments were used for the examination. Modified Kuppuswami's socioeconomic scale [2014] and the details provided by the subjects themselves are used for their categorisation. All the subjects are categorised in to five categories namely: upper, upper-middle, lower-middle, upper lower, and lower.

Results

Among the total sample size of 167 [107 males; 60 females] only two were falling under the category of lower class; so for the sake of statistical analysis those two were included into the just previous class that is the upper lower. The age and gender wise distribution of the various classes is shown in graph 1 & 2. People among the upper class [76.9%] believed that the dental treatment is very important as compared to lower and upper lower class [27.8%]. Also the upper

class [84.6%] said that they think that there is a relationship between periodontal disease and the systemic health whereas very few among the lower classes [13.9%] believed so. There was a significant difference [$p < 0.001$] between CPITN scores and the Treatment Needs of different socioeconomic groups as well as their oral hygiene practices. [Tables I- v]

Discussion

The present study has emphasised on the periodontal status among different socioeconomic groups as the socioeconomic status has been considered an important risk indicator for periodontal diseases. Various oral health inequalities are associated with the socioeconomic status.^[6] 47 studies in MEDLINE search indicated that 29 studies out of 36 favoured the association between socioeconomic factors and periodontal diseases.^[7] Periodontal diseases are responsible for almost the loss of 79.2% of all teeth in all patients over 30 years of age.^[8] Periodontal disease is one of the most concerned diseases throughout the world. It has now been also considered as the sixth complication of diabetes mellitus.^[9] The difference between periodontal status and dental awareness of upper and lower classes and the variation in the oral care measures may be due to lack of proper education to the lower class. As suggested by Loe, the successful management of the periodontal disease depends largely on the patient's personal oral care and maintenance

along with the professional care delivered.^[10]

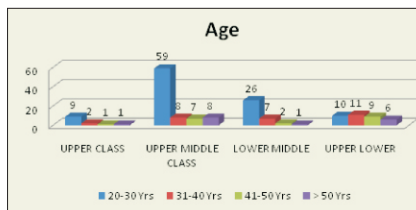
This study revealed that the prevalence of periodontal diseases is more among lower socioeconomic groups; this is in accordance with the study of Gautam et al.^[11] The study also revealed that the regular oral hygiene practices are more common among upper and upper middle class as compared to lower class. Almost 100% of the upper class and 95.1% of the upper middle class people brushes twice daily using toothbrush and toothpaste. The upper class groups may be due to their higher education level are more aware towards the use of different oral hygiene aids. The use of dental floss, interdental brush and mouthwash was seen to be prevalent in upper and upper middle class and none among the lower classes used them. Prevalence of habits like gutka, cigarette, pan, supari is more among the lower and upper lower class and 0% in upper class. In lower class also the habit of gutka/zard was more common as to smoking bidi/cigarette. The habit of chewing supari was seen in upper middle and lower middle class and was more common among the women. 76.9% of the upper class had a CPITN code of 1 and were falling under the treatment need category I as compared to lower class who had 0% under this category. In contrast to this 47.2% were under the treatment need III in lower class as compared to 0% under upper class. This again strengthens the fact that there is a strong association between better periodontal health and higher socioeconomic groups and this is in accordance with Neuman et al who showed a lower occupational status gets limited dental services.^[12] Visiting a dentist is not a cheap affair, and it costs fairly well. This might be also a reason for poor oral health among the people of lower socioeconomic groups.^[13]

References

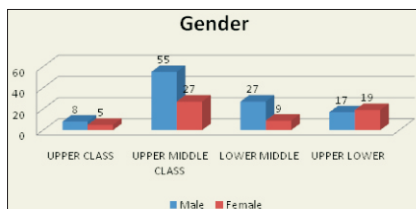
References are Available on request at editor@healtalkht.com

Illustrations

Graph 1



Graph 2



Tables

Table 1: CPITN CODES & CRITERIA

CODE X	When only one tooth or no tooth is present in the sextant
CODE 4	Pathological pocket 6 mm or more in depth. Black band of the probe not visible
CODE 3	Pathological pocket 4-5 mm in depth. Gingival margin situated on black band of the probe.
CODE 2	Calculus or other plaque-retentive factors either seen or felt during probing.
CODE 1	Bleeding observed during or after probing
CODE 0	No periodontal disease (healthy periodontium)

Table 2: TREATMENT NEEDS

TN 0	A recording of code 0 (healthy) – no treatment
TN I	A code of 1 indicates a need for improvement of the personal oral hygiene of that individual- I
TN II	A code of 2 & 3 indicates need for professional cleaning & removal of plaque retentive factors. In addition patient obviously requires oral hygiene instructions – II+I
TN III	Code of 4 requires complex treatment which involves deep scaling, root planning, and more complex surgical procedures – III+II+I.

Table 3: Modified Kuppaswamy's socioeconomic scale [2014]^[5] Education

Sr.No.	Education of the Head	Score
1.	Professions or Honours	7
2.	Graduate or post graduate	6
3.	Intermediate or post high school dip	5
4.	High school certificate	4
5.	Middle school certificate	3
6.	Primary school certificate	2
7.	Illiterate	1

Occupation

Sr.No.	Occupation of the Head	Score
1.	Profession	10
2.	Semi - profession	6
3.	Clerical, Shop - owner	5
4.	Skilled worker	4
5.	Semi - skilled worker	3
6.	Unskilled worker	2
7.	Unemployed	1

Income

Sr.No.	Family Income Per Month in Rs. (1976)	Family Income Per Month in Rs. (1982)	Family Income Per Month in Rs. (2001)	Family Income Per Month in Rs. (2014)	Family Income Per Month Score
1.		3519	15197	36017	12
2.	1800-199	1659-3318	7595-15196	18093-36016	10
3.	750-999	1244-1658	5694-7594	13495-17999	6
4.	500-749	829-1243	3793-5693	8989-13494	4
5.	300-499	497-828	2273-3792	5387-8988	3
6.	101-299	167-496	761-2272	1803-5386	2
7.	100	166	760	1802	1

Total score

Sr.No.	Score	Socioeconomic Class
1.	26-29	Upper (I)
2.	16-25	Upper Middle (II)
3.	11-15	Lower Middle (III)
4.	5-10	Upper Lower (IV)
5.	<5	Lower (V)

Table 4

CPITN	Table i	Class				Total	Pearson Chi-Square	p-value
		UPPER	UPPER MIDDLE	LOWER MIDDLE	UPPER LOWER			
1	10	16	4	0	30	56.47	<0.001	
2	3	34	23	11	71			
3	0	15	2	8	25			
4	0	17	7	17	41			
Total	13	82	36	36	167			

Table 5

TREATMENT NEED (TN)	Table ii	Class				TOTAL	Pearson Chi-Square	p-value
		UPPER	UPPER MIDDLE	LOWER MIDDLE	UPPER LOWER			
I	10	15	9	0	30	47.07	<0.001	
II	3	50	24	19	96			
III	0	17	7	17	41			
Total	13	82	36	36	167			

Table 6

FREQUENCY OF TOOTHBRUSH CHANGE	Table iii	Class				TOTAL	Pearson Chi-Square	p-value
		UPPER	UPPER MIDDLE	LOWER MIDDLE	UPPER LOWER			
<3 Month	5	16	5	7	33	20.58	0.015	
3 Month	2	24	7	2	35			
5-6 Month	4	32	11	14	61			
>6 Month	2	10	13	13	38			
Total	13	82	36	36	167			

Table 7

TABLE iv	Mouthwash		Interdental Aid			Tongue Cleaner			
	Yes	No	Floss	Interdental brush	Toothpick	Note	Yes	No	
UPPER	8	5	1	1	0	11	7	6	
UPPER MIDDLE	11	71	1	0	3	78	26	56	
LOWER MIDDLE	0	36	0	0	4	32	11	25	
UPPER LOWER	1	35	0	0	9	27	7	29	
TOTAL	20	147	2	1	16	148	51	116	
Pearson Chi-Square	38.24		31.72			5.47			
p-value	<0.001		<0.001			0.14			

Table 8

HABITS	Table v	CLASS				TOTAL	Pearson Chi-Square	p-value
		UPPER	UPPER MIDDLE	LOWER MIDDLE	UPPER LOWER			
BIDI/CIGARETTE	0	9	5	5	19	11.87	0.221	
GUTKA / ZARDA	0	13	6	9	28			
PANSUPARI	0	6	3	0	9			
NONE	13	54	22	22	111			
Total	13	82	36	36	167			