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AWARENESS AND ASSSESSMENT OF ORAL HYGEINE AND PERIODONTAL STATUS AMONG THE CONSTRUCTION WORKERS IN A J HOSPITAL CAMPUS, MANGALORE

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ABSTRACT

Background: The health of construction workers goes ignored because of their stressful working conditions, busy schedules and poor economic conditions. The need for dental care should be emphasized among these workers. Limited literature on their attitude towards oral health, their awareness, habits and behavior among these construction workers incited us to assess the preventive oral health care awareness and oral hygiene practices among the construction workers in A.J hospital, campus, Mangalore.

Materials and methods: Total of 136 systemically healthy construction workers were selected for the study. A questionnaire was administered by examiner. The study proforma consisted of demographic data and data related to oral hygiene habits and practices. Oral Hygiene Index-Simplified and Community Periodontal Index and Treatment Needs indices were used to record oral hygiene status and periodontal status respectively. Chi-square test was used to determine the association between the variables. P value < 0.05 were selected to denote statistical significance.

Results: Majority of the workers brushed once daily and had adverse habits, poor oral hygiene status and periodontitis associated with bleeding gums and halitosis. Most of the workers had a dental visit only in problem.

Conclusion: The community should be provided with dental health education by giving more importance in oral hygiene maintenance, habit counseling and regular dental visits.

Key Words: Dental awareness, Oral hygiene status, Periodontal status, Construction workers

INTRODUCTION

It is a truism to say that what man is and to what disease he may fall victim depends on a combination of two sets of factors-his genetic factors and the environmental factors to which he is exposed.[1] Oral health is an integral part of general health and plays an important role in improving the quality of life. The oral cavity is the port of entry for many diseases and presents several unique features that make it especially prone to occupational diseases. Ramazzini, "the father of industrial hygiene", was the first to advocate the inclusion of the patient's occupation in medical history and to point out a number of oral symptoms.[2]Industrial workers constitute well-defined population groups, although building and construction industry is recognized as the unorganized sector with vast labor intensity and economic activity after agriculture in India. In some surveys, it was observed that some risk factors for oral diseases in workers are age, educational level, smoking habits and general health status.[3]

According to World Health report 2003, the prevalence of periodontitis is 86% in India. Periodontal diseases are the major dental problems which affect people worldwide as well as the Indians.[4]Periodontium is widely affected by dental plaque; a diverse microbial community which is found on the tooth surface, which is embedded in a matrix of polymers of bacterial and salivary origin.[5] If not removed by mechanical methods, the plaque gets mineralized to form calculus, which in turn, initiates the inflammatory process of the periodontium. This results in tooth loss and mobility. The role of the personal risk factors such as a poor life style and negative psychosocial conditions, have been said to play an important role

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in the etiology of adult periodontitis.[6] It is also generally considered to result from an imbalance between the potentially pathogenic microbes and the nature and the efficacy of the local and systemic host responses.[7] The extent and the severity of periodontal disease was shown to be different in different age groups.[8] The workers are also involved in smoking, chewing tobacco and drinking habits, which predispose to oral diseases, particularly those which are related to the gums.[9]

Oral health behavior and seeking oral health care depends upon a number of factors. Patients comply better with oral health care regimens when informed and positively reinforced. The motives prompting workers to seek preventive dental care include the beliefs that one is susceptible to dental disease that dental problems are serious, and that dental treatment is beneficial.[10]Owing to the paucity of literature among this vulnerable populationthe propositions of this study were to assess the dental awareness, oral hygiene and periodontal status among the construction workers in A.J Hospital Campus.

MATERIALS AND METHODS

A cross sectional study was conducted among 136 construction workers, working at A.J Hospital Campus to evaluate the awareness of oral hygiene and to assess their oral hygiene status and periodontal status.Concerned approval was obtained from Institution Ethical Committee. Subjects who gave informed consent were included for study.Mouth mirror, WHO probe and illuminated light source were used for examination. Clinical Examination was conducted by a calibrated examiner.

Inclusion criteria

Systemically healthy individuals

Presence of more than 15 teeth.

Exclusion criteria

Patients with a history of systemic diseases.

Pregnancy and lactation

Undergone oral prophylaxis in last 6 months.

A questionnaire was administered by the examiner. The study proforma consisted of demographic data and data related to oral hygiene habits and practices. Oral Hygiene Index-Simplified and Community Periodontal Index and Treatment Needs indices was used to record oral hygiene status and periodontal status respectively.

The data was compiled, tabulated and subjected to statistical analysis using the SPSS package (version 17). Chi-square test was used to determine the association between the variables. P value < 0.05 were selected to denote statistical significance.

RESULTS

Out of 136 subjects (91 males and 45 females) with mean age 34.28 all the subjects cleaned their teeth using tooth brush and paste. The sociodemographic characteristics are shown in table 1. 47.07% workers used smokeless form of tobacco.

On evaluating the dental awareness it was revealed that 72.05% people brushed once daily and their oral hygiene status was found to be poor. This was found to be statistically significant (Graph 1, Graph 2). 38.23% people were using medium bristle brush and 43.38% workers used tooth brush more than 6 months period. Frequency of changing brush and oral hygiene status and periodontal status was statistically significant (Graph 3, Graph 4). None of the workers used any other interdental oral hygiene aids. 61% workers cleaned there tongue and this relation was found to be statistically significant (Graph 5, 6). 72% workers noticed bleeding from gums and 80.8% were aware that that have halitosis, this was found to be statistically significant when compared to oral hygiene and periodontal status (Graph 7,8 and 9).55.8% workers visited dentist only in problem. Assessment of periodontal status revealed 70.58% workers had periodontitis. Comparison of different parameters with Oral Hygiene Index-Simplified and Community Periodontal Index and Treatment Needsis given in table 2 and 3 respectively.

DISCUSSION

Periodontaldiseases are triggered by a disruption of a balance between the host resistance and the factors which provoke the disease.In the study it was found than males workers constituted more than females and majority of workers were between the age group of 30- 35years. Smokeless tobacco (47.07%) constituted the highest among the habits observed among construction workers. The tobacco consumption in the study was lesser than those which were reported by Knutsson[11] and Nilsson[12] and Ansari[13] et al. but it was greater than that which was reported by Mou et al. The present study demonstrated that the prevalence of tobacco usage increased subsequently in the old age group as compared to that in younger age group.64.7% of the workers with adverse habits showed periodontitis. Cross-sectional studies have consistently shown the higher prevalence, extent, and severity of various periodontal disease outcomes in smokers than in non-smokers[14,15]. It has been further noted that the prevention of smoking should thus be a very important goal in any health education program, if one desires to maintain optimum oral health.

A lack of knowledge on good oral hygiene practices, lack of motivation and lack of regular health checkup, poor lifestyle may be the reasons for poor oral hygiene status. In this study 79.41% workers had poor oral hygiene. It was found that people who brushed once daily had poor oral hygieneand had periodontitis. Similar results were observed in other studies by Skaleric, Kovac –KavicMand-Gulie EE, Albander JM. The role of the dental plaque, as the principal etiological factor in the development of periodontal diseases, has been shown by Loe and co-workers [16,17] in the 1960s and as the level of the oral hygiene is directly related to the amount of plaque build-up on the teeth, it is reasonable to predict that the level of oral hygiene in a population is positively correlated with the prevalence and severity of the periodontal disease.

42% of the study subjects required periodontal therapy which included scaling root planning and surgical procedures. Periodontal treatment needs increased with age in the study which is as similar to that reported by study in Finland. 64.7% of the workers with adverse habits showed periodontitis. Dental visit is still not considered a positive dental behavior at present, it depends only on treatment needs. So these group people fail to make prophylactic visits to dentist thus giving them poor dental health behavior

CONCLUSION

The findings of this study provide an insight of oral health and periodontal status of construction workers. A comprehensive understanding of the extent of the public health problem would enable an effective planning of intervention measures. A health promotion program is highly desirable in this study population which addresses the need of importance of maintaining oral hygiene, habit counselingand regular visits to a dentist.

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QUESTIONNAIRE

Name Age / Sex :

Habits

1. Do you clean your teeth ?

   a) Yes b) No

2. If yes, how do you clean your teeth?

   a) Tooth brush and paste b) Tooth brush and powder C) if others, specify (salt, charcoal powder)

3. What is the aid used for brushing ?

   a) Tooth brush b) Finger c) Twigs

4. How often do you brush your teeth?

   a) Once daily b) Twice daily c) more than twice

5. What is the duration of brushing ?

   a) 1-3min b) 4-6min c) 7-10min

6. What is the technique used for brushing ?

   a) Vertical b) Horizontal c) circular

7. What is the type of brush used ?

   a) Soft b) Medium c) Hard d) Never noticed

8. What is the frequency of changing tooth brush ?

   a) Once in 3 months b) 3-6 months c) more than 6 months

9. Do you clean your tongue?

   a) yes b) no

10. Do you rinse your mouth after eating ?

    a) yes b) no

11. Do you use a mouth wash?

    a) Yes b) No c) if yes, how often

12. Do you use any other inter dental aids ?

    a) Dental floss b) interdental brushes c) tooth picks

13. Have you ever noticed bleeding in your gums

    a) Yes b) no

14. Have you ever noticed smell from your mouth ?

    a) Yes b) no

15. Do you visit a dentist, how often ?

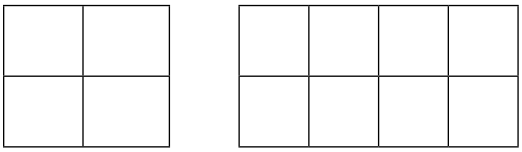
    a) never b) only in problem c) once in 6 months d) any other

1. ORAL HYGIENE STATUS

ORAL HYGIENE INDEX (SIMPLIFIED)

DEBRIS INDEX CALCULUS INDEX

16 11 26 16 11 26



46 31 36 46 31 36

TOTAL DI-S SCORE = TOTAL CI-S SCORE =

TOTAL OHI – S SCORE (DI-S +CI-S) =

Oral Hygiene Status :

2. PERIODONTAL STATUS

COMMUNITY PERIODONTAL INDEX OF TREATMENT NEEDS (CPITN)

16/17 11 26/27

46/47 31 36/37

TREATMENT NEEDS

Table 1: Sociodemographic characterisitics of the study subjects

Number of study subjects	Frequency	Percentage
male	91	66.9
Female	45	33.1
Total	136	100
STUDY SUBJECTS MEAN AGE - 34.28		
HABITS OF STUDY SUBJECTS		
No habit	15	11.03
Smokeless form	64	47.07
Smoking form	29	21.32
Smokeless & smoking form	28	20.58
Total	136	100

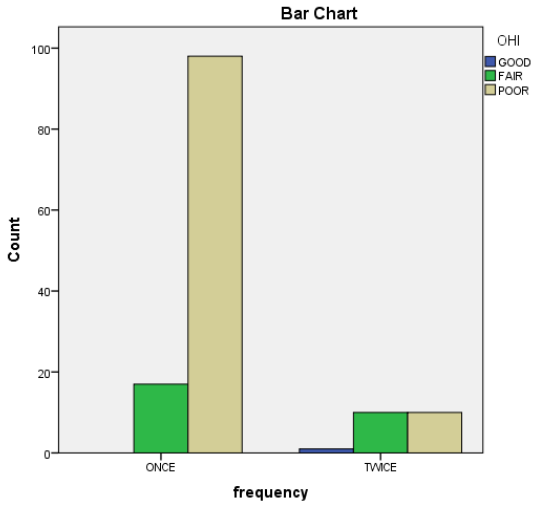
Table 2 : Assessment of oral hygeine practices using oral hygiene index-simplified

Param-eters	OHIS						
		Good		Fair		Poor	
		Count	%	Count	%	Count	%
Frequency of brushing	Once	0	0	17	12.5	98	72.05
	Twice	1	0.7	10	7.35	10	7.35
	More than twice	0	0	0	0	0	0
Duration	1-3 min	1	0.7	6	4.41	47	34.55
	4-6 min	0	0	15	11.02	46	33.82
	7-10 min	0	0	6	4.41	15	11.02
Technique	Vertical	1	0.7	6	4.41	17	12.5
	Horizontal	0	0	17	12.5	71	52.02
	Circular	0	0	4	2.94	20	14.70
Type of brush	Soft	1	0.7	3	2.21	8	5.88
	Medium	0	0	10	7.35	42	30.88
	Hard	0	0	7	5.14	29	21.32
	Never noticed	0	0	7	5.14	29	21.32
Frequency of changing brush	Once in 3 months	1	0.7	11	8.08	15	11.02
	3-6 months	0	0	8	5.88	42	30.88
	> 6 months	0	0	8	5.88	51	37.5
Tongue cleaning	Yes	1	0.7	23	16.91	59	43.38
	No	0	0	4	2.94	49	36.02
Interdental aids	Dental floss	0	0	0	0	0	0
	Inter-dental brushes	0	0	0	0	0	0
	Tooth picks	0	0	10	7.35	46	33.82
	No	1	0.7	17	12.5	62	45.58
Bleeding gums	Yes	0	0	16	11.76	82	60.29
	No	1	0.7	11	8.08	26	19.11
Halitosis	Yes	0	0	19	13.97	91	66.91
	No	1	0.7	8	5.88	17	12.5
Dental visit	Never	0	0	12	8.82	38	27.94
	Only in problem	0	0	13	9.55	63	46.32
	Once in 6 months	1	0.7	2	1.47	3	2.20
	Any other	0	0	0	0	4	2.94

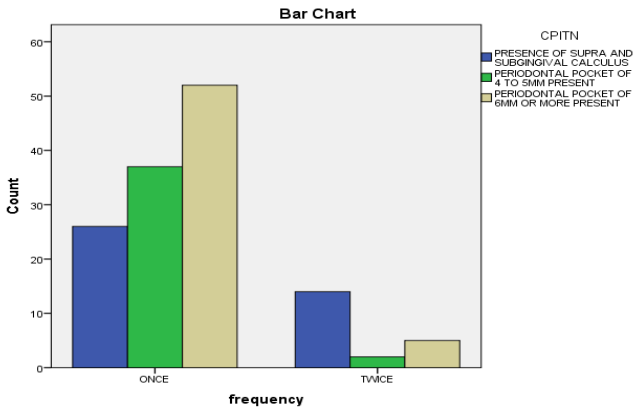
Table 3 : Periodontal assessment using community periodontal index and treatment needs

Parameters	COMMUNITY PERIODONTAL INDEX AND TREATMENT NEEDS						
		Presence of supra and subgingi-val calculus		Periodontal pocket of 4 to 5 mm present		Periodontal pocket 6mm or more present	
		Count	%	Count	%	Count	%
Frequency of brushing	Once	26	19.11	37	27.2	52	38.23
	Twice	14	10.29	2	1.47	5	3.67
	More than twice	0	0	0	0	0	0
Duration	1-3 min	16	11.76	18	13.23	20	14.70
	4-6 min	16	11.76	17	12.5	28	20.58
	7-10 min	8	5.88	4	2.94	9	6.61
Technique	Vertical	9	6.61	7	5.14	8	5.88

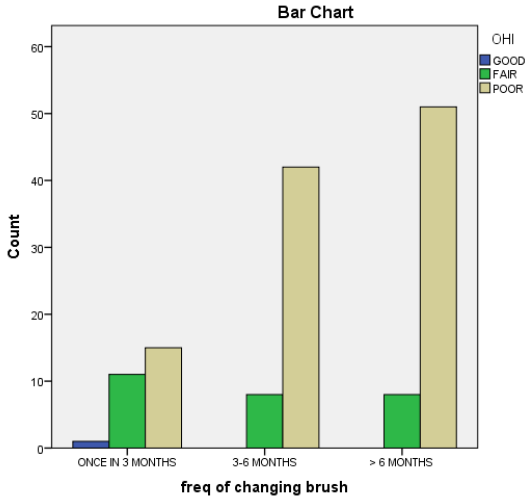
	Horizontal	24	17.64	26	19.11	38	27.94
	Circular	7	5.14	6	4.41	11	8.08
Type of brush	Soft	7	5.14	4	2.94	1	0.7
	Medium	15	11.02	12	8.82	25	18.38
	Hard	10	7.35	9	6.61	17	12.5
	Never noticed	8	5.88	14	10.29	14	10.29
Frequency of changing Brush	Once in 3 months	16	11.76	6	4.41	5	3.67
	3-6 months	14	10.29	12	8.82	24	17.64
	> 6 months	10	7.35	21	15.44	28	20.58
Tongue cleaning	Yes	31	22.79	20	14.7	32	23.52
	No	9	6.61	19	13.97	25	18.38
Interdental aids	Dental floss	0	0	0	0	0	0
	Interdental brushes	0	0	0	0	0	0
	Tooth picks	16	11.76	18	13.23	22	16.17
	No	24	17.64	21	15.44	35	25.73
Bleeding gums	Yes	25	18.38	27	19.85	46	33.82
	No	15	11.02	12	8.82	11	8.08
Halitosis	Yes	25	18.38	33	24.26	52	38.23
	No	15	11.02	6	4.41	5	3.67
Dental visit	Never	14	10.29	14	10.29	22	16.17
	Only in problem	24	17.64	18	13.23	34	25
	Once in 6 months	2	1.47	3	2.2	1	0.7
	Any other	0	0	4	2.94	0	0



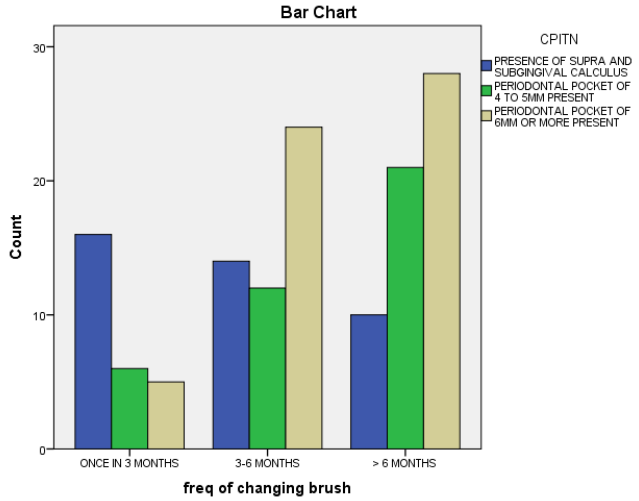
Graph 1: Frequency of brushing and oral hygiene index-simplified



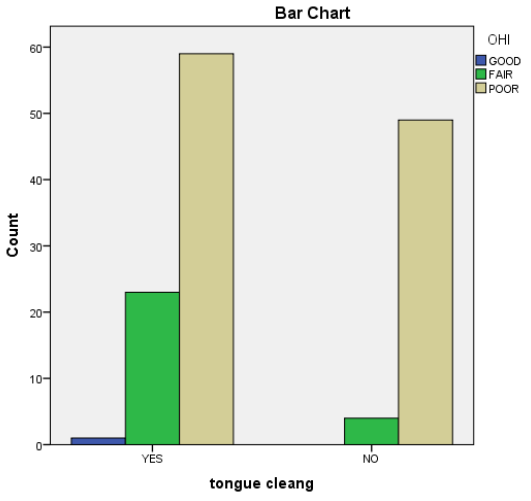
Graph 2: Frequency of brushing and community periodontal index and treatment needs



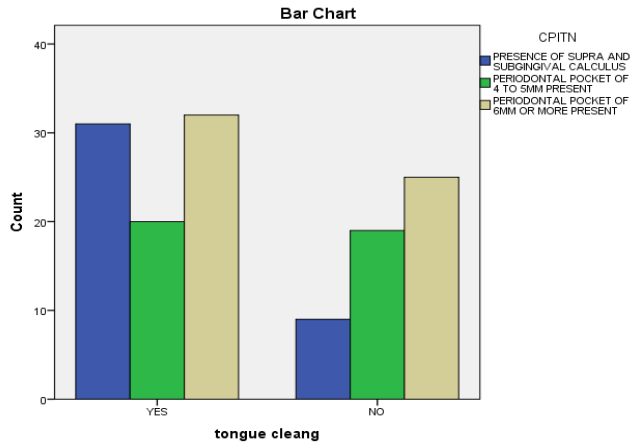
Graph 3: Frequency of changing brush and oral hygiene index-simplified



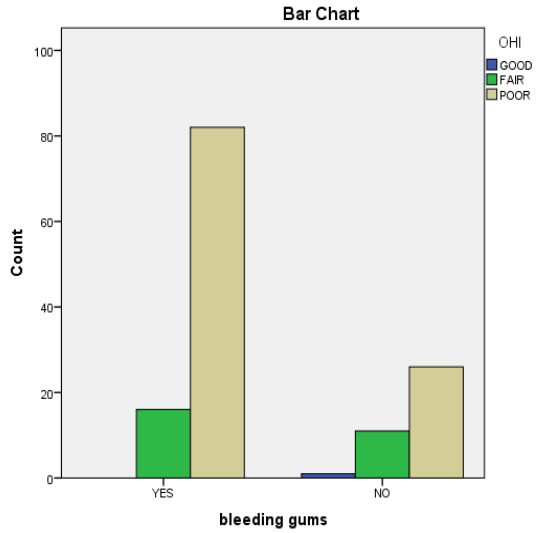
Graph 4: Frequency of changing brush and community periodontal index and treatment needs



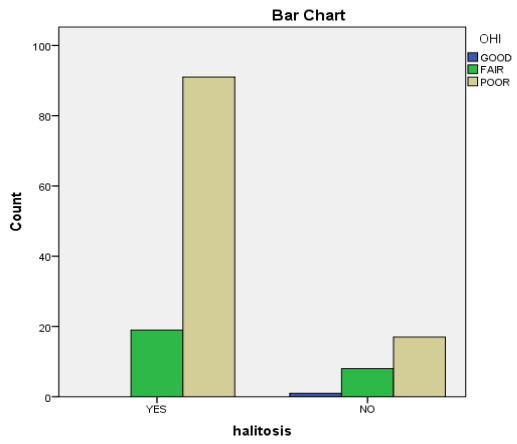
Graph 5: Tongue cleaning and oral hygiene index-simplified



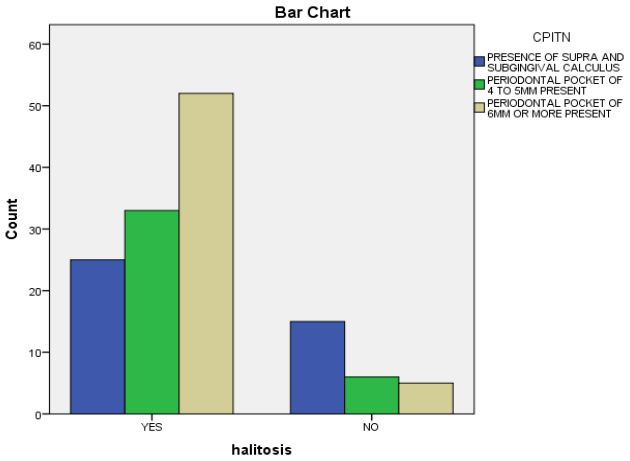
Graph 6: Tongue cleaning and community periodontal index and treatment needs



Graph 7: Bleeding gums and oral hygiene index-simplified



Graph 8: Halitosis and oral hygiene index-simplified



Graph 9: Halitosis and community periodontal index and treatment needs