

Dental Caries Status and Oral Hygiene Practices of Lock Factory Workers in Aligarh City

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Abstract:

Background: The aim was to evaluate the oral hygiene practices and dental caries status of lock factory workers in Aligarh city.

Materials and Methods: WHO Oral Health Assessment form (2013) was used to collect data from each subject. A total of 850 subjects constituted the final sample size. Information was obtained regarding the oral hygiene practices and clinical examinations were conducted. Descriptive analysis was done and the data were analyzed using Chi-square test.

Results: The prevalence of dental caries was 46.5%. Almost half of the workers i.e., 456 (53.6%) used brush to clean their teeth. Majority of the subjects i.e., 784 (92.2%) cleaned their teeth once a day. It was found that 466 (54.8%) used toothpaste for maintaining oral hygiene. Almost half of the subjects consumed tobacco in form of gutkha, cigarette, and in multiple forms.

Conclusion: The results of the study showed that dental caries and poor oral hygiene are major public health problems among the factory workers. Primary oral health-care programs like dental screening and oral health education at regular intervals should be made mandatory, which will help to prevent accumulation of health-care demands of the factory employees.

Key Words: Dental caries, oral hygiene practices, tobacco consumption

Introduction

Oral health is a vital part of general health and is a valuable asset of every individual. Oral diseases are one of the most common of non-communicable diseases affecting varied population. It is an important public health problem owing to the prevalence,

socio-economical aspect, expensive treatment, and lack of awareness.¹

Oral diseases and dysfunctional oral conditions have a profound impact on the quality-of-life throughout an individual's life cycle. Lifestyle is composed of cultural and behavioral patterns and lifelong personal habits. In developing countries such as India, where traditional lifestyles still persist, risks of disease and death are connected with poor nutrition, personal hygiene, customs, and cultural patterns. These personal risk factors play an important role in etiology of adult periodontal disease.²

The oral cavity acts as a passage for numerous diseases of varied origin and along with discrete unique features present in it predisposes, particularly, to occupational diseases. Industrial revolution has made rapid strides in expanding industrial activity worldwide providing scope in employment for many and thus improving the standard of living of people. In the light of rapid economic growth and industrial progress in such countries, it becomes imperative that safety and health at workplace be given its due importance.

Majority of people employed in various industries are exposed to hazardous environment. This exposure deteriorates the general and oral health of people working in industries for long hours.³

The medical care is a priority for the factory workers to maintain high number of work hours and production leaving little room for absence from work whereas oral health is neglected due to overwork, minimal priority multiple visits, limited availability of dental services, and financial constraints in developing countries. Oral health maintenance is not considered mandatory although dental or oral problems also lead to loss of man hours.⁴

In addition, the health of industrial workers often goes uncared due to their stressful working conditions, busy schedules, and poor economic conditions.³

Until now, there are no reports regarding the oral hygiene practices and dental caries status of lock factory workers in Aligarh, Uttar Pradesh. Therefore, this study was conducted.

Materials and Methods

A cross-sectional study was carried out to gather information on the oral hygiene practices and dental caries status of lock factory workers in Aligarh city. There are 32 lock factories in

Aligarh city and the total strength of lock factory workers was found to be 1600 as per the record in the District Industrial Department situated in exhibition road, Aligarh. A pilot study was carried out in order to test the feasibility and the sample size was estimated to be 804. A slightly higher sample size of 850 was selected to compensate for any kind of permissible error and to increase the accuracy of the study. A close ended questionnaire was used to collect general information in which three questions to assess the oral hygiene practices and five questions to assess habits related to tobacco were included.

Each oral hygiene practice question had multiple choices for scoring purpose. The required ethical clearance was obtained from Institutional Ethical Clearance Committee.

Statistical analysis

The collected data were entered in the Microsoft Excel Sheet and analyzed using the SPSS, Version 16 statistical package. Descriptive analysis was done and the data were analyzed using Chi-square test. $P \leq 0.05$ was considered to be statistically significant.

Results

The minimum subject age was 19 years while the maximum was 64 years. Majority of the study population i.e., 264 (31.1%) belonged to 25-34 years age group and 186 (21.9%) belonged to 35-44 years age group, with the remaining of 180 (21.1%), 117 (13.8%), and 103 (12.1%) belonging to the 19-24, 55-64, 45-54 years of age groups, respectively.

Among 850, 399 (46.5%) subjects had dental caries, 182 (21.8%) had filled teeth with secondary caries, 158 (18.6%) workers had filled teeth with no caries, 22 (2.6%) workers had missing teeth due to caries, and 12 (1.4%) had missing teeth for another reason (Table 1).

The mean dentition status of factory workers was found to be 5.16 ± 5.15 (Table 2).

Majority of the study population i.e., 456 (53.6%) used brush to clean their teeth and 394 (46.4%) subjects used their finger to clean their teeth (Table 3).

Majority of the subjects i.e., 784 (92.2%) cleaned their teeth once daily and 66 (7.8%) subjects cleaned their teeth twice daily (Table 4).

Most of the subjects i.e., 466 (54.8%) used toothpaste for maintaining oral hygiene, 320 (37.7%) using toothpowder, and 64 (7.5%) using charcoal to clean their teeth (Table 5).

Among total 850 study subjects, it was found that 442 (52%) subjects consumed tobacco while 408 (48%) subjects did not consume tobacco.

Table 1: Distribution of study population based on dental caries status.

Dental caries status	Number of factory workers	Percentage
Healthy	77	9.1
Caries	399	46.5
Filled with caries	182	21.8
Filled with no caries	158	18.6
Missing due to caries	22	2.6
Missing for another reason	12	1.4

Table 2: Distribution of study population based on mean dentition status.

Dentition status (mean±SD)

5.16±5.15

SD: Standard deviation

Table 3: Distribution of study population based on oral hygiene aids used.

Oral hygiene AIDS	Number of factory workers	Percentage
Toothbrush	456	53.6
Finger	394	46.4
Stick	00	0
Any other	00	0
Total	850	100

Table 4: Distribution of study population based on the frequency of cleaning teeth.

Frequency of cleaning teeth	Number of factory workers	Percentage
Once	784	92.2
Twice	66	7.8
Thrice	00	0
Total	850	100

Table 5: Distribution of study population based on the type of material used for cleaning teeth.

Material used	Number of factory workers	Percentage
Toothpaste	466	54.8
Toothpowder	320	37.7
Charcoal	64	7.5
Sand/brick	00	0
Total	850	100

Most of the subjects i.e., 251 (29.5%) consumed tobacco in the form of bidi, whereas 140 (16.5%), 21 (2.5%), and 30 (3.5%) consumed tobacco in the form of gutkha, cigarette, and in multiple forms, respectively.

Majority of the subjects i.e., 248 (29.2%) smoked bidi/cigarette 1-5 times/day, whereas, 50 (5.9%) subjects smoked 5-10 times/day.

Most of the subjects consumed smokeless tobacco greater than ten times per day, while 60 (7.1%) and 48 (5.6%) consumed 1-5 times/day and 5-10 times/day, respectively.

When the subjects were asked the reason for tobacco consumption, 335 (39.4%) subjects said as a habit, 80 (9.4%)

said because of the friends company, and 27 (3.2%) consumed tobacco due to workload.

Discussion

In India, there is no national oral health service as there are in other developed countries.⁵ Health promotion among the industrial workers requires coordinated action by all concerned including the dental profession, local factory authorities, social and economic sectors, and voluntary organizations. Factory authorities should establish regular oral health care services to provide necessary health education, preventive, and curative dental care services.⁶

In this study, majority of the study population i.e., 264 (31.1%) belonged to 25-34 years, which is in accordance to the study conducted by Bansal and Veerasha,¹ and Khatun *et al.*⁷ in which majority of the workers i.e., 592 (42.8%) belonged to 25-34 years of age group.

In this study, around 399 (46.9%) workers had dental caries which is in contrast to a study done by Grover and Grover,⁸ in which 261 (60.0%) subjects had decayed teeth.

In present study, the mean dentition status of factory workers was 5.16 ± 5.15 which is in accordance to a study done by Vanishree *et al.*² in which the mean dentition status was 5.97 ± 5.78 .

Majority of the study population used brush to clean their teeth i.e., 456 (53.6%), and 394 (46.4%) subjects used their finger to clean their teeth which is in contrast to studies by Bansal and Veerasha,¹ Gambhir *et al.*⁵ where 1245 (90.8%) and only 28 (2.8%) subjects respectively used brush to clean their teeth.

Totally, 784 (92.2%) subjects brushed their teeth once in a day and 66 (7.8%) subjects brushed their teeth twice a day in this study. Results are similar to a study conducted by Patil *et al.*⁶ in which 500 (82%) subjects cleaned their teeth once a day and 114 (18%) brushed twice a day. In contrast, a study conducted by Dagli *et al.*⁹ concluded that 405 (78.9%) study subjects clean their teeth twice a day, while 108 (35.1%) never cleaned their teeth. Other studies conducted by Hayashi *et al.*,¹⁰ and Rizvi *et al.*¹¹ reported that 104 (41.2%), and 412 (47.2%) subjects, respectively, cleaned their teeth once a day.

In present study, 466 (54.8%) workers were using toothpaste for maintaining oral hygiene, 320 (37.7%) using toothpowder, and 64 (7.5%) using charcoal to clean their teeth which is in contrast to the study conducted by Patil *et al.*,³ Nagarajappa *et al.*¹² in which 462 (75%), 36 (8.6%) workers used toothpaste, respectively.

Almost half of the workers that is 442 (52%) subjects consumed tobacco which is in accordance to the studies conducted by Sood *et al.*¹³ and Pucal *et al.*,¹⁴ in which 345 (51.5%), and 219

(46%) workers consumed tobacco, respectively. However, in contrast, Khurana *et al.*¹⁵ reported that 46 (67%) subjects consumed tobacco.

In present study, most of the subjects consumed tobacco in the form of bidi i.e., 251 (29.5%), whereas 140 (16.5%), and 21 (2.5%) in the form of gutkha and cigarette, respectively. However, Grover and Grover.⁸ reported that 168 (32.4%) workers were chewing gutkha, 56 (10.8%) workers consumed tobacco, 34 (6.6%) workers consumed pan, 5 (1%) workers consumed betel nut, and 61 (11.8%) workers had the habits of smoking.

Majority of the subjects i.e., 248 (29.2%) smoked bidi/cigarette 1-5 times/day, whereas 50 (5.9%) subjects smoked 5-10 times/day in this study, whereas in a study done by Ahmad *et al.*,¹⁶ 10 (8.6%) workers smoked bidi 1-5 times a day, whereas 17 (14.5%) subjects smoked 5-10 times a day.

In present study, smokeless tobacco consumption was 1-5 times/day and 5-10 times/day, respectively, in 60 (7.1%) and 48 (5.6%) subjects, respectively whereas, on contrary in a study done by Ahmad *et al.*,¹⁶ 20 (16.2%) consumed smokeless tobacco 1-5 times a day, whereas 23 (19.7%) subjects consumed 5-10 times a day.

Subjects that consumed tobacco because of the habit were 335 (39.4%) in number, 80 (9.4%) workers consumed because of the friends company and 27 (3.2%) consumed tobacco due to workload.

Conclusion

Lack of knowledge about the importance of oral health and negligence in its maintenance is one of the contributing factors for the poor oral health status found among the factory workers. People of low socio-economic statuses realize their lack of expertise in the technical and scientific aspects of health care, but they want a real control in matters of priority, delivery care, and perhaps, even personnel selection. Hence, continuous professional research and development is essential to improve overall health and development of such population, so as to have a healthy productive labor population for development of any nation. Primary oral health-care programs like dental screening and oral health education at regular intervals should be made mandatory, which will help to prevent accumulation of health-care demands of the factory employees.

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