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Original Research Article

A study of tobacco use in Class IV employees of tertiary care teaching hospital in Pune city, India and Development of Workplace based Tobacco Cessation Model

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Abstract: Tobacco use is highly prevalent and culturally accepted in India. Oral cavity carcinoma is leading cause of cancer related deaths in India due tobacco addiction. The objectives is to study the knowledge, attitude, and practices regarding tobacco consumption, to identify reasons for initiation and continuation of tobacco use, to determine prevalence of different precancerous lesions, and to develop workplace based tobacco cessation model. An interventional study was conducted amongst the Class IV employees of teaching hospital of Pune city. Pre-tested proforma was used for data collection. Active intervention in the form of awareness lectures, one-to-one counseling was offered to the tobacco users. All the tobacco users went through a medical and oral screening check up and their oral screening results were confirmed. The management of oral lesions was done and simultaneously they were counseled frequently for tobacco cessation at workplace by regular personal visits by the investigators. Total number of 243 employees actively participated in the program. 157 were males and 86 were females. 82 (33.74%) of the employees were tobacco users, among which the smokeless forms were predominant. 63 males and 19 females were using tobacco. Peer pressure and pleasure were the main reasons for initiation of tobacco consumption, and avoiding physical discomfort on quitting and relieving stress were important factors for continuation. Employees had poor knowledge regarding the ill-effects of tobacco. 41 (50%) of tobacco users had oral lesions. Most common oral lesions was oral sub mucous fibrosis (75.61%). The pre lukoplakial (tobacco pouch keratosis) lesion was found to be resolved after 1 month complete tobacco cessation. Peer pressure and relieving stress are main factors for tobacco use. Poor knowledge about ill effects of tobacco was observed. Systematic workplace based tobacco cessation model was found to be effective.
Keywords: Tobacco cessation, workplace, oral screening, health awareness, cessation

INTRODUCTION:

Tobacco is one of the leading causes of disease and death in the world. Tobacco usage is a major preventable cause of death and disease worldwide, irrespective of whatever form it is being used. Consumption of tobacco is a major risk factor for mortality. After China, India is the second largest nation in the world, with respect to tobacco production and also consumption [1]. It is responsible for a range of respiratory, cardiovascular, and reproductive tract disorders in addition to cancer of different sites in the body. In India, tobacco consumption is widely prevalent and culturally accepted.

The Global Adult Tobacco Survey India (GATS India) is the global standard for systematically monitoring adult tobacco use (smoking and smokeless) and tracking key tobacco control indicators. GATS India was conducted in 2009–2010 as a household survey of persons age 15 and above. GATS India revealed that more than one-third (35%) of adults in India use tobacco in some form or the other. Among them 21 percent adults use only smokeless tobacco, 9 percent only smoke and 5 percent smoke as well as use smokeless tobacco. Based on these, the estimated number of tobacco users in India is 274.9 million, with 163.7 million users of only smokeless tobacco, 68.9 million only smokers, and 42.3 million users of both smoking and smokeless tobacco [2].

Several studies have revealed that most adult and adolescent tobacco users in the Region want to quit tobacco. Hence, it is essential to provide tobacco cessation support to them [3]. Hence, cessation should be a priority area for research in India. It has been estimated that US $1 investment on anti-tobacco activities would save US $13. Research suggests that though 70% of tobacco users want to quit, only 3% are successful with will power alone. Tobacco users are in dire need of support while quitting tobacco due to the addictive nature of tobacco products. Therefore, there is need of community based tobacco cessation facilities, which are less stigmatized like workplace and so more easily accessible [4].

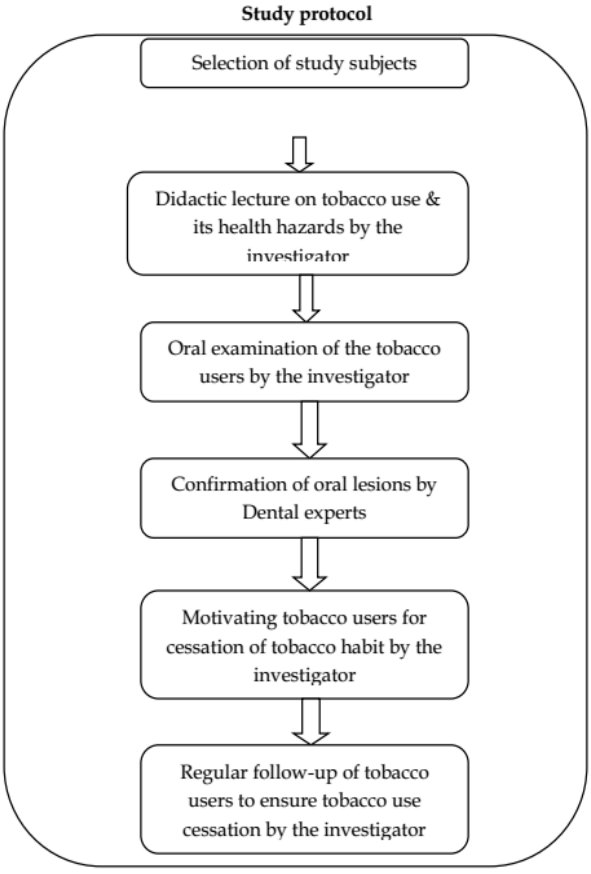
A tobacco-free policy at work protects nonsmokers from the harmful effects of tobacco smoke. The tobacco user receives positive peer influence from colleagues. As a large part of the day is spent at work, such a policy would help in reducing the frequency of tobacco use. This, however, may not lead to tobacco cessation among tobacco users in the absence of any support for quitting, as tobacco is highly addictive. The department of Preventive Oncology at the Tata Memorial Hospital (TMH) initiated a workplace tobacco cessation program, considering the several advantages it has over a clinic-based setup. The workplace gives an opportunity to interact with a large number of people simultaneously, study tobacco-related work culture, and provides a stable population for follow-up [5]. This study was planned to determine the extent of tobacco use amongst the class IV employees of one of the tertiary care teaching hospital in Pune city and also development of workplace based tobacco cessation programme based on Tata Memorial Hospital (TMH) workplace tobacco cessation program. The objectives of the study were as follows, 1. To study the knowledge, attitude, and practices (KAP) regarding tobacco consumption, 2. To identify reasons for initiation and continuation of tobacco use, 3. To identify prevalence of different precancerous lesions and 4. To develop workplace based tobacco cessation model

MATERIAL & METHODS:

An interventional study was conducted at one the tertiary care teaching hospital in Pune city of Maharashtra state of India. All Class IV employees who had given written informed consent were included in the study. Formulation of methodology was largely based on Mishra GA et al study which was conducted amongst workers of chemical industrial unit in Ratnagiri, Maharashtra [5]. The pre-intervention information on the socio-demographic characteristics, knowledge, attitude and practices regarding tobacco use were collected on the pre-tested proforma. This was followed by Didactic lecture on tobacco use and its health hazards by the investigator and naked eyed oral examination of the employees to detect the oral lesions. This was followed by confirmation of oral lesions by dental experts

Thereafter, the tobacco users were followed up at an interval of six to eight weeks. The follow-up sessions comprised of sessions along with tobacco users on various issues like motivation, changing attitude, coping with withdrawals, relapse prevention, sharing of experiences etc. During follow-up the employees were assisted with different types of relaxation and coping techniques, assertiveness skills and relapse prevention techniques. They were sensitized to the hazards of tobacco consumption, monitored for tobacco usage. Follow-up oral examination was conducted for those diagnosed with lesions and confirmation of any regression of the lesion on cessation of the tobacco use by dental experts.The detail study protocol is given in following flow chart.

Study protocol



RESULTS:

Total 243 study subject were participated in the study. The demographic characteristics are summarized in table-1.

Total 82 (33.74%) employees were using tobacco. The most common reason for initiation of tobacco use was peer pressure (63.41%) followed by mental stress (54.88%), curiosity (28.05%) and easy availability of tobacco (21.95%). Majority of the study subjects were using tobacco in the form of gutkha or mava (50%) followed by dried tobacco with lime (41.46%) and masheri (28.05%). All female used tobacco in masheri form. One study subject was smoking cigarette. About half of the study subjects were using tobacco for more than five years and mean monthly expenditure on tobacco use was Rs. 90.20.

The tobacco use was found to high in the age above 21 years especially in 41-50 years followed by 31-40 years. Tobacco use was in males was statistically higher compare to females. Illiterate study subjects were using tobacco more than literate study subjects. Shift duty was associated with higher tobacco use. The association of various demographic characteristics with tobacco use is summarized in the table 2.

Table 1: Demographic characteristics of study subjects (n= 243)

1.	**Age-wise distribution**	**Frequency (%)**
	Below 20	28 (11.52)
	21-30	79 (32.51)
	31-40	73 (30.04)
	41-50	38 (15.64)
	Above 50	25 (10.29)
2.	**Gender-wise distribution**	
	Male	157 (64.61)
	Female	86 (35.39)
3.	**Literacy**	
	Literate	184 (75.72)
	Illiterate	59 (24.28)
4.	**Socio-economic class**	
	III	20 (8.23)
	IV	171 (70.37)
	V	52 (21.40)

Table 2: Association between tobacco use & demographic characteristics

Demographic character	**Tobacco use**		**X^2** Value with d.f.	**p Value**
	Yes	**No**		
Age				
Below 20 years	8 (28.57%)	20 (71.43%)	1.031 with 4 d.f.	0.905, not significant
21-30 years	25 (31.65%)	54 (68.35%)		
31-40 years	27 (36.99%)	46 (63.01%)		
41-50 years	14 (38.84%)	24 (63.16%)		
Above 50 years	8 (32.00%)	17 (68.00%)		
Gender				
Male	63 (40.13%)	94 (59.87%)	7.296 with 1 d.f.	0.007, significant
Female	19 (22.09%)	67 (77.91%)		
Literacy				
Literate	42 (22.83%)	142 (77.17%)	38.424 with 1 d.f.	0.0001, highly significant
Illiterate	40 (67.80%)	19 (32.30%)		
Shift duty				
Yes	60 (40.54%)	88 (59.46%)	7.061 with 1 d.f.	0.008, highly significant
No	22 (23.16%)	73 (32.30%)		

Knowledge regarding health hazards due to tobacco use was also determined; it is summarized in the table 3

Table 3: Knowledge regarding health hazards due to tobacco use

Knowledge	Freq. (%)
Employees who identified tobacco as injurious to health	243 (100)
Employees who identified tobacco as a risk factor for cancer	183 (75.31)
Employees who identified tobacco as risk factor for respiratory diseases	204 (83.96)
Employees who identified tobacco as risk factor for heart diseases/stroke	115 (47.33)
Employees who identified tobacco as risk factor for adverse outcome of pregnancy	92 (37.86)
Employees who identified passive smoking is also injurious to health	144 (59.26)
Employees who knew that tobacco contains addictive substances like Nicotine	83 (34.16)
Employees who knew that professional help is available for quitting tobacco addiction	54 (22.23%)
Employees who knew that undergoing regular oral examination is important if tobacco addiction is present	173 (71.19%)

*Frequencies are not mutually exclusive

All the tobacco users were underwent oral examination. Of the total 82 tobacco users, 46 (56.10%) had oral lesions. These oral lesions were confirmed by the investigators at teaching dental hospital in Pune city.

Table 4: Oral lesion confirmed by dental expert

Oral lesion confirmed by dental expert	Frequency (%)
Tobacco pouch keratosis	19 (41.30)
Leukoplakia	10 (21.74)
Oral submucous fibrosis	6 (13.04)
Others (Erythroplakia, Lichenoid reaction, Hyperkeratosis)	4 (8.67)

7 were normal on oral examination by dental experts. On subsequent follow-up of employees after tobacco cessation it was found that the lesions were regressed in majority of the employees 18 (39.13%).

DISCUSSION:

In the present study total 82 (33.74%) employees were using tobacco. Total 40% of the male and 22% of the females were using tobacco. As per GATS India, the prevalence of overall tobacco use among males is 48 percent and that among females is 20 percent [1]. The observations in the present study were comparable with GATS India.

According to GATS India, khaini or tobacco-lime mixture (12%) is the most commonly used smokeless tobacco product, followed by gutkha, a mixture of tobacco, lime and areca nut mixture (8%), betel quid with tobacco (6%) and applying tobacco as dentifrice (5%). The prevalence of each of the smokeless tobacco products, except dentifrice, is higher among males than females. Among smoking tobacco products, bidi (9%) is used most commonly followed by the cigarette (6%) and the hookah (1%) [1]. In the present study majority of the study subjects were using tobacco in the form of gutkha or mava (50%) followed by dried tobacco with lime (41.46%) and 28.05% applying tobacco as dentifrice which is known as masheri in the local language. All female used tobacco in masheri form. As per GATS India, half (49%) of adults in India are aware that smoking causes stroke and less than two-thirds (64%) believe that smoking causes heart attack whereas, a large proportion (85%) believes that smoking causes lung cancer [1]. Similar findings were observed in the present study.

As per Mishra GA *et al.;* study, identifying reasons for initiation and continuation of tobacco consumption along with baseline assessment of knowledge, attitudes, and practices regarding tobacco use, are important in formulating strategies for a comprehensive workplace tobacco cessation program. The long-term objective of this study was to formulate a Model Workplace Tobacco Cessation Program which could be replicated in other workplaces to promote tobacco control activities [5]. The present study was also based on similar objectives as well as methodology. In the present study of the total 39 employees had oral lesions confirmed by dental experts. On subsequent follow-up of these 39 employees after tobacco cessation it was found that the lesions were regressed in 18 employees. This finding was most encouraging and it was supportive of the fact that workplace based tobacco cessation model could be beneficial.

CONCLUSION:

As per the present study tobacco use is prevalent in the study subjects. Use of structured tobacco cessation programme is found to be effective in the study subjects. It is recommended that similar type of tobacco cessation programme should be suggested at different work-places.

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