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Prevalence of Various forms of Tobacco Use and Factors Related with it in Diamond Cutting and Polishing Workers of Surat City, India

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Abstract

Over 8 lakh deaths occur every year due to diseases associated with tobacco use in India. The cancer registry data reveals that 48% of cancers in males and 20% in females are tobacco related and are totally avoidable. The present study evaluated socio demographic profile of diamond cutting and polishing workers of Surat city. Additively, the prevalence of various forms of tobacco use and factors related with it in diamond cutting and polishing workers was also studied. The present study was a cross sectional study of 295 diamond cutting and polishing workers selected randomly from different diamond units and interviewed with pre designed and pre tested semi structured questionnaire. Data on socio demographic characteristics, various forms of tobacco use and its related factors was collected and analysed with MS Excel and Epi info7. It was seen that the mean age of diamond workers was 29.51±9.02. About 71.2 % workers had history of tobacco use in different forms, from them, 68.1 % were currently consuming tobacco and 3.1 % had already quit their habit. Mean age of starting tobacco was 21.44±6.35 among current users. Mawa-masala (79.6%), khainee (22.39%) and Gutkha (4.48%) were preferred forms of smokeless tobacco among current-users. Smoking form of tobacco was used by 11.4 % of current user, out of which 9.4 % were bidi smokers and 2 % were cigarette smokers. Most common reason for tobacco initiation was peer pressure (74.13%), followed by psychological stress (47.76%). It was concluded that the prevalence of tobacco use among diamond workers is very high compared to that in general population. Preventive strategies are warranted to reduce the future burden of tobacco-related morbidity among these workers.

Key Words: Prevalence, tobacco use, diamond cutting and polishing workers

Introduction

Tobacco use continues to be the leading global cause of preventable death. It kills nearly 6 million people and causes hundreds of billions of dollars of economic damage worldwide each year. If current trends continue, by 2030 Tobacco will kill more than 8 million people worldwide each year, with 80% of these deaths among people living in low- and middle-income countries.[1] One third (34.6%) of adults(15 years and above)[2] and 14.6 % children(13-15 years)[3] in India used Tobacco in any form. Tobacco is used in smoking forms through bidis, cigarettes, hukka, and chilam (ganja). Smokeless tobacco products are used in pan, gutkha, zarda and khaini.

Tobacco use is harmful to health. All forms of tobacco cause fatal and disabling health problems throughout life. Scientific evidence has linked tobacco use with the development of more than 25 diseases. Smoking tobacco is the major cause of lung cancer, chronic obstructive pulmonary disease (COPD), peripheral vascular disease, and various throat and mouth cancers. Tobacco smoking is a known cause of stroke, coronary heart disease, bladder cancer, aortic aneurysm, perinatal mortality, cervical cancer, and leukaemia. Oral smokeless tobacco is associated with precancerous lesions and cancers of the oral cavity. In addition to the increased risk for developing these specific diseases, tobacco users have a significantly higher risk for general health problems than non-users.[4] According to Unani experts, tobacco use adversely affects the heart and brain; especially affect people having excitable temperaments, causing diseases such as headache, vertigo, loss of memory, insomnia, cough, pulmonary tuberculosis, palpitation, impotence, constipation, etc.[5-9] In India, Over 8 lakh deaths occur every year due to diseases associated with Tobacco use. The cancer registry data reveals that 48% of cancers in males and 20% in females are Tobacco related and are totally avoidable.[10]

Tobacco use is influenced by a variety of factors, like individual attitudes and beliefs, social norms, availability and acceptability and advertising campaigns.[4] There are many misperceptions related to tobacco use like it aids concentration, relieve anxiety and tension, induces feelings of pleasure, suppresses appetite and causes skeletal muscle relaxation. As a result of these perceived benefits tobacco consumption is highest in the labour classes and those from a low socioeconomic class. Several studies have illustrated that tobacco use is higher among the less educated or illiterate, poor and marginalized groups.[4, 11-12] So the present study was done to study socio demographic profile, prevalence of tobacco use and factors related with it in a susceptible population, i.e., diamond cutting and polishing workers.

Material and Methods

This cross sectional study was conducted over the period from Oct 2012 to Jan 2013. The sample size was calculated keeping in mind, 60% prevalence of Tobacco use among men in Gujarat as per NFHS-3[13] and 10% allowable error. As per calculation ($4PQ/L^2$) the sample size required was 267 workers. Assuming a non- response rate of 10%, we randomly selected 295 Diamond cutting and polishing workers for interview via the pretested semi structured questionnaire. Informed consent was obtained from the owners of the industries and from individual workers. Tobacco users were classified as current users if they were taking it daily for more than one year and quitter if they had left the tobacco since last six months. Data were analyzed using MS Excel 2007, Open epi and Epi Info 7 software. Appropriate statistical tests were applied to interpret the data.

Results

A total of 295 workers were interviewed in the study for analysis. The mean age of the workers was 29.51±9.02 (SD) years. All the workers were male. Half (50.17%) of the workers studied up to primary level and 43.05% studied up to secondary level, while 5% were illiterate. Around two third (65.08%) of workers were married; the rest were unmarried. One third (32.21%) workers were single male migrant and around 49% had nuclear family. Around 44% workers were in socio economic class II and 41% in class III. Around 9% were in class I, while no worker was in class V. Mean age of starting Diamond cutting work was 17.19±3.62 years. Mean duration of Diamond cutting work was 12.32±7.71 years and mean monthly income of workers was 10033.90±2413.23 Rs. (Table 1) The mean daily expenditure on tobacco was Rs. 17.17 ± 10.88 (SD), which is around 5% of their daily income.

Table 1. Socio-Demographic Characteristics of Diamond cutting and polishing workers:

Characteristics	Data value(n=295)
Mean Age :	29.51±9.02 years
Sex : Male Female	 295 (100%) 0
Education : Illiterate Primary Secondary Graduate	 15 (5.08%) 148 (50.17%) 127 (43.05%) 5 (1.69%)
Marital Status : Married Unmarried	 192 (65.08%) 103 (34.92%)

Type of Family : Single male migrant Nuclear Joint Three Generation	 95 (32.21%) 144 (48.81%) 25 (8.46%) 31 (10.52%)
Socio Economic Class* : I II III IV V	 27 (9.15%) 129 (43.73%) 120 (40.68%) 19 (6.44%) 0
Mean Age of Starting Diamond cutting work :	17.19±3.62 years
Mean Duration of Diamond cutting work :	12.32±7.71 years
Mean monthly Income of worker :	10033.90±2413.23 Rs.

*****(Modified Prasad classification-AICPI of August 2013=1097)

About 71.19% (210/295) of study population was found to be exposed to Tobacco in any form, either in past or present; 68.14% (201/295) of them were current-users and 3.05% (9/295) had quit their habit. Among tobacco quitters, 4 had quit due to health problems, 3 had quit due to advice by doctor and 2 had quit by self-choice. Among the current users mean age of starting tobacco was 21.44±6.35 years and mean age of starting diamond work is 17.63±3.86 years. So current users started tobacco within 4 years of starting diamond cutting work. Out of the total current users 10% (20/201) started tobacco before entering in Diamond cutting work, while 90% (181/201) started tobacco after entering in Diamond cutting work. The majority 156(77.61%) of the current users knew that tobacco consumption was injurious to health; however, only 67 (33%) said that they wished to quit Tobacco use.

Around 80% of the current users were taking mava-masala, 22% khaini and 4% gutkha. Around 10% were smoking Bidi and 1.49% was smoking cigarette. (Table 2).

Table 2. Forms of Tobacco consumed by Current Tobacco users* (n=201):

Form of Tobacco	Frequency	Percentage
Mava Masala	160	79.6
Khaini	45	22.39
Bidi	20	9.95
Gutkha	9	4.48
Cigarette	3	1.49

*Responses are not mutually exclusive

Around 67% of the current users had started their tobacco use between 16-25 years of age, while 13% had started before 16 years of age. (Figure 1)

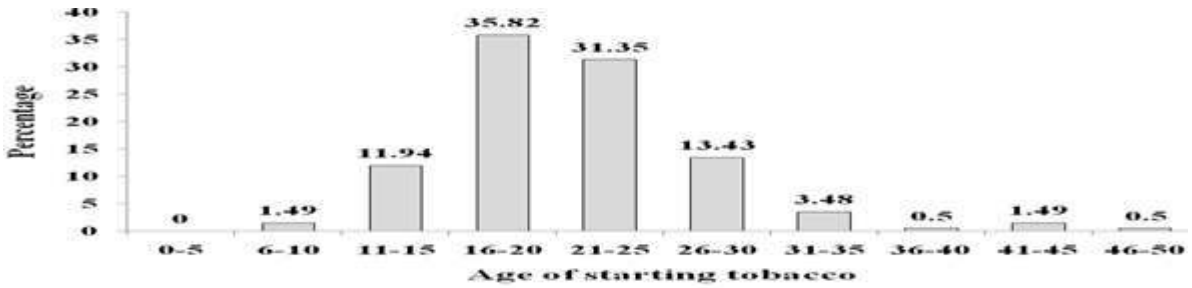

Figure 1. Age of starting Tobacco use in Current Tobacco users (n=201):

Out of the total current tobacco users 87.56% (176/201) were only tobacco chewers, 6.47% (13/201) were only Smokers and 5.97%(12/201) were combined users. Among current tobacco users, median daily frequency of mava-masala; gutkha and cigarette was three, that of khaini was four and that of Bidi was five. (Figure 2)

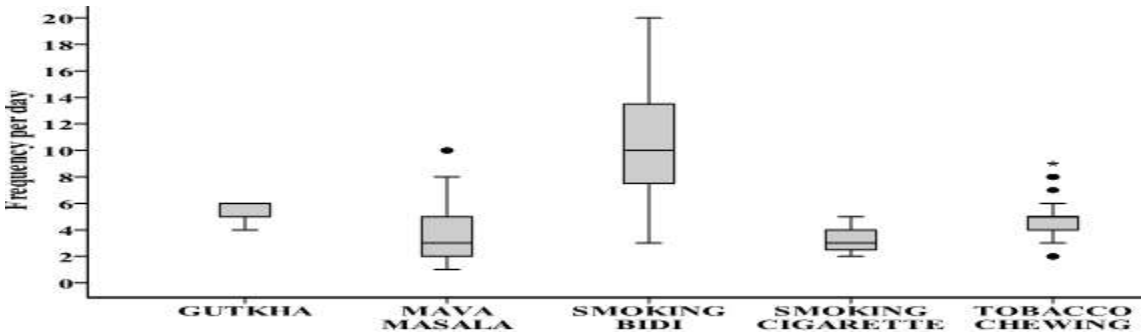

Figure 2. Frequency of Tobacco consumption among Current Tobacco users (n=201):

Median duration of mava-masala; bidi and gutkha was 8 years and that of khaini and cigarette was 5 years (Figure 3).

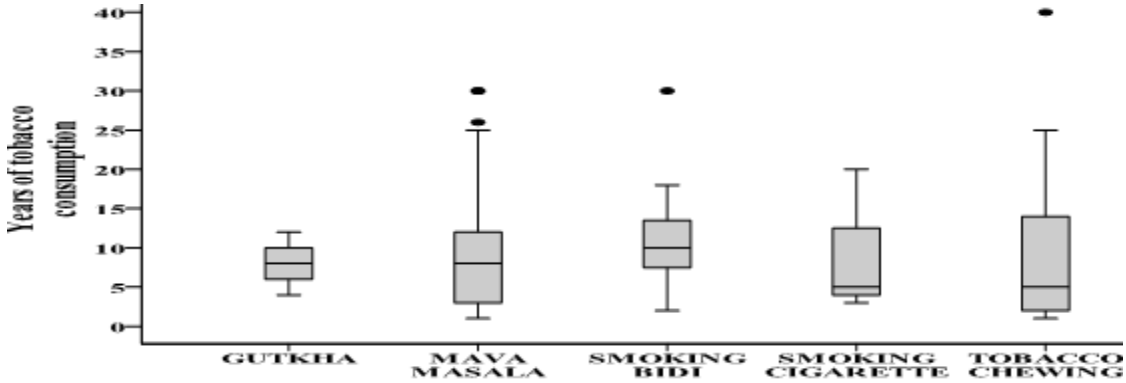

Figure 3. Duration of Tobacco Consumption among Current Tobacco users (n=201):

Most common reason of tobacco initiation was peer pressure (74.12%) and psychological stress (47.76%) (Table 3)

Table 3. Reason of Tobacco initiation among Current Tobacco users* (n=201):

Reason of Tobacco initiation	Frequency	Percentage
Peer Pressure	149	74.12
Psychological stress	96	47.76
Personal choice	13	6.47
Family culture	3	1.49

*Responses are not mutually exclusive

Around 54% of the current tobacco users studied up to primary level. Significant negative association was found between education level and tobacco consumption. (X^2= 10.49, p = 0.015) (Table 4) Nearly half (49.25%) of the current tobacco users belonged to nuclear family and one third (31.84%) were single male migrant. Around 85% of current tobacco users were of socio economic class II or III. No significant association was found between type of family and socio economic class with tobacco consumption. (Table 4).

Table 4. Relation of Education, Type of family and Socio Economic class with Current tobacco use:

	Current tobacco users		Total	
	Yes	No		
Education				
Illiterate	12(80%)	3(20%)	15	$X^2 = 10.49$* p = 0.015 df = 3
Primary	108(73%)	40(27%)	148	
Secondary	66(66.7%)	33(33.3%)	99	
Higher Secondary	13(46.4%)	15(53.6%)	28	
Graduate	2(40%)	3(60%)	5	
Type of family				
Three Generation	20(64.5%)	11(35.5%)	31	$X^2 = 0.41$ p = 0.94 df = 3
Joint	18(72%)	7(28%)	25	
Nuclear	99(68.8%)	45(31.2%)	144	
Single male migrant	64(67.4%)	31(32.6%)	95	
Socio Economic class				
I	20(74.1%)	7(25.9%)	27	$X^2 = 2.06$ p = 0.56 df = 3
II	85(65.9%)	44(34.1%)	129	
III	85(70.8%)	35(29.2%)	120	
IV	11(57.9%)	8(42.1%)	19	
V	0	0	0	
Total	201(68.1%)	94(31.9%)	295	

Figures in parenthesis show row wise percentages

* For calculation of X^2 rows of Higher Secondary and Graduate were merged.

Discussion

The purpose of this study was to determine the prevalence and type of tobacco use among diamond workers of Surat city and to identify the factors related with it. The overall prevalence of tobacco use in the present study was 71.19%, which is lower than that reported by Ansari ZA et al[14] in his study on power loom workers. In a study done on village community of Kheda, tobacco use was reported in 69% of males and 30% of females.[15] In a prevalence survey of tobacco use in Karnataka and Uttar Pradesh, the overall prevalence of 'ever use' of any kind of tobacco was 29.6% in Karnataka and 34.6% in Uttar Pradesh.[16] In the study by Gupta V et al[17] in north Indian community, self reported prevalence rate of tobacco use among males was 35.2 % in urban area and 52.6% in rural area.[17]

Among the current users mean age of tobacco initiation was 21 years which is higher than that found by Ansari ZA et al[14]. The educational status of the diamond workers was found to be low. Consistent with study of Ansari ZA et al[14], this study also found significant negative association was found between education and tobacco consumption. A study of smoking prevalence among men in Chennai (1997) also showed the highest rate (64%) among the illiterate population.[18] Hence, education should be considered as is an important factor in any tobacco control programme.

Tobacco can aggravate poverty among users and their families since tobacco users are at much higher risk of falling ill and dying prematurely of cancers, cardiac and respiratory diseases, or other such tobacco-related diseases, imposing additional costs for health care and depriving families of much-needed earnings.[19]

Conclusion

The prevalence of tobacco use among Diamond workers is high compared to that in general population. Chewing form of Tobacco is commonly used among these workers.

The reasons for high prevalence of tobacco consumption may be low educational status, peer pressure, stress, minute work requiring high concentration, etc.

About 50 % tobacco users started tobacco between 11-20 years of age. This indicates the failure of tobacco control program in the vulnerable adolescent group and requires strict prohibitive measures on selling of tobacco products in this age group.

Some intervention strategies are warranted to reduce the future burden of tobacco use-related morbidity among these workers.

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