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Prevalence of Tobacco Use among Government Employees in Ahmedabad, Gujarat

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ABSTRACT

Introduction: Tobacco is the most easily accessible addictive substance which contributes to premature death and long term suffering, being a major risk factor for non-communicable diseases. The objective was to study prevalence of tobacco usage and exposure to second hand smoke among the government employees.

Methodology: A cross sectional study was undertaken in urban area of Gujarat from January 2013 to November 2014. Total 300 males and 300 females were selected from class III and class IV government employees of B. J. Medical College and Civil Hospital, Ahmedabad for the study.

Results: In this study, 13% males were smoker and 33.67% males and 4.67% females were consuming smokeless tobacco products. Prevalence of smokeless tobacco was 26.36% in 35 to 45 years of age. Passive smoking was reported by 112 (37.33%) males and 70 (23.33%) in females. Prevalence of smoking was 22% in class IV employees compared to 4% in class III employees.

Conclusions: Prevalence of tobacco was significantly higher in class IV employees. Prevalence of smokeless tobacco consumption was higher in 35 to 45 years of age group and prevalence of smoking was higher in age group of 55 years and above.

Key words: Government employees, Smoking, Tobacco, Urban

INTRODUCTION

Tobacco use is a major preventable cause of premature deaths and diseases. It leads to over 5 million deaths each year worldwide which is expected to rise to over 8 million deaths yearly by 2030.[1] Nearly 8–9 lakh people die every year in India due to diseases related to tobacco use.[2]

Majority of the cardiovascular diseases, cancers and chronic lung diseases are directly attributable to tobacco consumption. There are currently about 1 billion smokers in the world. Manufactured cigarettes represent the major form of smoked tobacco. Current smokers are estimated to consume about 6 trillion cigarettes annually .[3] The chewing of tobacco products is a risk factor for oral cancers.[4] Further, tobacco consumption was found to be higher among the lower socio-economic groups.[5]

In India alone, about 700 billion 'bidis' (a type of filterless hand-rolled cigarette) are consumed annually. In the Indian context, tobacco use implies a varied range of chewing and smoking forms of tobacco available at different price points, reflecting the varying socio-economic and demographic patterns of consumption.[6]

Tobacco is consumed in a variety of both smoking and smokeless forms e.g. bidi, gutkha, khaini, panmasala, hookah, cigarettes, cigars, chillum, chutta, gul, mawa, misri etc. Tobacco is also a part of the socio-cultural milieu in various societies, especially in the Eastern, Northern, and North-Eastern parts of the country.[2] India is the second largest consumer of tobacco products and third largest producer of tobacco in the world.[7]

Global Adult Tobacco Survey (GATS) India shows that 52 percent of adults were exposed to second-hand smoke (SHS) at home. In rural areas 58 percent and in urban areas 39 percent population was

exposed to SHS at home. Exposure to SHS in indoor workplaces who usually work indoors or both indoors and outdoors was 30 percent.[7]

Education entered into the model first as the strongest predictor of smoking ($P < 0.001$) among both men and women.[8] Smoking prevalence was high in illiterates and in literates with less than seven years of schooling, but decreased significantly with the increase in education status after attaining secondary education and more.[9]Occupation is one category highly relevant to social disparities in health. People in manual occupations were more likely to smoke than those in professional or supervisory occupations.[10]

The present study was conducted in urban settings of Ahmedabad. Ahmedabad is the largest city and former capital of the Indian state of Gujarat. The objective of the present work was to study tobacco use and exposure to second hand smoke among government employees in Ahmedabad city.

METHODS

A cross sectional study was conducted in urban settings of Ahmedabad from January 2013 to November 2014. Total 300 males and 300 females were selected from class III and class IV government employees of B.J. Medical College and Civil Hospital, Ahmedabad. Individual aged 25-60 years were included due to age of retirement is 58 years and 60 years in class III and class IV government employees respectively. To calculate the sample size, the prevalence of tobacco consumption was taken 25% in urban population as per GATS.[7] considering this prevalence, sample size was calculated with the help of formula sample size $n = 4pq/L^2$. Allowable error L was taken 15%. Calculated sample size was 533 but for the convenience of study, the sample size was decided to be 600.

A pre designed and pre tested questionnaire was used to collect demographic details and Information on tobacco-use was obtained by using a pre designed and pre tested Questionnaire. Informed consent was taken from all respondents. Data entry was done in Microsoft Excel and Data were analyzed using Epi Info software (7.1.0.6).

Following definitions are used in this study:

Current daily smokers: defined as those who were currently smoking cigarettes or bidis daily.

Current daily smokeless tobacco users: defined as those who were currently using chewable tobacco products, gutka, pan-masala, tobacco-lime, khaini or zarda paan daily.

Second-hand smoke: tobacco smoke that is exhaled by smokers or is given off by burning tobacco and is inhaled by persons nearby.

RESULTS

In total 600 subjects, 150 (25%) males and 150 (25%) females were taken from class III and 150 (25%) males and 150 (25%) females were taken from class IV employees.

Table 1: Socio-demographic profile of the study population

Socio-demographic variables	Male (n=300)			Female (n=300)		
	Class III (%) N=150	Class IV (%) N=150	Total (%) N=300	Class III (%) N=150	Class IV (%) N=150	Total (%) N=300
Age (Yrs.)						
25-34	59 (39.33)	25 (16.67)	84 (28)	62 (41.33)	12 (8)	74 (24.67)
35-44	17 (11.33)	36 (24)	53 (17.67)	22 (14.67)	35 (23.33)	57 (19)
45-54	57 (38.00)	49 (32.67)	106 (35.33)	39 (26)	65 (43.33)	104 (34.67)
≥55	17 (11.33)	40 (26.67)	57 (19)	27 (18)	38 (25.33)	65 (21.67)
Type of Family						
Joint	85 (56.67)	110 (73.33)	195 (65)	83 (55.33)	122 (81.33)	205 (68.33)
Nuclear	65 (43.33)	40 (26.67)	105 (35)	67 (44.67)	28 (18.67)	95 (31.67)
Religion						
Hindu	140 (93.33)	143 (95.33)	283 (94.33)	141 (94)	147 (98)	288 (96)
Muslim	10 (6.67)	5 (3.33)	15 (5)	5 (3.33)	3 (2)	8 (2.67)
Christian	0 (0)	2 (1.33)	2 (0.67)	4 (2.67)	0 (0)	4 (1.33)
Marital Status						
Single	17 (11.33)	9 (6)	26 (8.67)	24 (16)	0 (0)	24 (8)
Married	133 (88.67)	141 (94)	274 (91.33)	120 (80)	120 (80)	240 (80)
Widow/widower	0 (0)	0 (0)	0 (0)	6 (4)	30 (20)	36 (12)
Education						
Illiterate	0 (0)	2 (1.33)	2 (0.67)	0 (0)	39 (26)	39 (13)
Primary	0 (0)	45 (30)	45 (15)	0 (0)	72 (48)	72 (24)
Secondary	0 (0)	64 (42.67)	64 (21.33)	5 (3.33)	37 (24.67)	42 (14)
Higher secondary	30 (20)	39 (26)	69 (23)	10 (6.67)	2 (1.33)	12 (4)
Diploma	6 (4)	0 (0)	6 (2)	36 (24)	0 (0)	36 (12)
Graduate	106 (70.67)	0 (0)	106 (35.33)	75 (50)	0 (0)	75 (25)
Post graduate	8 (5.33)	0 (0)	8 (2.67)	24 (16)	0 (0)	24 (8)

Table 2: Information regarding Tobacco Smoking among Males

Status of smoking	Class III (%) (n=150)	Class IV (%) (n=150)	Total (%) (n=300)
Current Smoker*	6 (4.00)	33 (22.00)	39 (13.00)
Type:			
Bidi	1 (0.66)	22 (14.66)	23 (7.67)
Cigarette	5 (3.33)	11 (7.33)	16 (5.33)
Frequency:			
Daily			
2 to 5 times in a day	4 (2.67)	21 (14)	25 (8.33)
> 5 times in a day	1 (0.66)	2 (1.33)	3 (1.00)
Occasionally smoke			
Twice a week	1 (0.66)	4 (2.67)	5 (1.67)
Thrice a week	-	6 (4.00)	6 (2.00)
Current non-smoker	144 (96.00)	117 (78.00)	261 (87.00)
Former smoker	14 (9.33)	12 (8.00)	26 (8.67)
Never smoker	130 (86.67)	105 (70.00)	235 (78.33)
Exposed to Second hand smoking	43 (28.67)	69 (46.00)	112 (37.33)
Mean age of smoking initiation	25.33±5.71	28.78±8.47	28.08± 8.29

(* χ^2=21.45, p <0.05 for current smoking in class III and class IV government employees).

Table 3: Information regarding Smokeless tobacco products consumption

Status of tobacco use	Male			Female		
	Class III (%) N=150	Class IV (%) N=150	Total (%) N=300	Class III (%) N=150	Class IV (%) N=150	Total (%) N=300
Current smokeless tobacco user	23 (15.33)	78 (52.00)	101 (33.67)	1 (0.67)	13 (8.67)	14 (4.67)
Type :						
Pan-masala	15 (10.00)	48 (32.00)	63 (21.00)	-	-	-
Gutka / Betel nut	2 (1.33)	6 (4.00)	8 (2.67)	-	6 (4.00)	6 (2.00)
Tobacco & Lime	6 (4.00)	24 (16.00)	30 (10.00)	-	-	-
Snuff	-	-	-	1 (0.67)	7 (4.47)	8 (2.67)
Daily Frequency:						
2 to 5 times	18 (12.00)	43 (28.67)	61 (20.33)	1 (0.67)	13 (8.67)	14 (4.67)
6 to 10 times	5 (3.33)	29 (19.33)	34 (11.33)	-	-	-
More than 10 times	-	6 (4.00)	6 (2.00)	-	-	-
Current non user	127 (84.87)	72 (52.00)	199 (66.33)	149 (99.33)	137 (91.33)	286 (95.33)
Former user	10 (6.67)	10 (6.67)	20 (6.67)	-	-	-
Never user	117 (78.00)	62 (41.33)	179 (59.66)	149 (99.33)	137 (91.33)	286 (95.33)
Mean age of initiation	27.08 ±4.69	28.25 ±6.00	27.99 ±5.74	60 ±0.00	43.92 ±6.52	45.07 ±7.60

Majority of class III employees (39.33% males and 41.33% females) were 25-34 years of age group while majority of class IV employees (32.67% males and 43.33% females) were 45-54 years of age group. Mean age was 43.60±11.06 years in males and 43.50±10.59 years in females (p >0.05). Majority of participants belonged to joint family. Among males, 133 (88.67 %) class III and 141 (94.00%) class IV employees were married. Among females, 120 (80.00%) class III and 120 (80.00%) class IV employees were married. (Table-1)

Table 2 shows prevalence of smoking (22%) was significantly higher in class IV employees compared to class III employees (χ2=21.45,p< 0.05).Exposure to second hand smoking at home, work place or public places were reported by 112 (37.33%) males and 70 (23.33%) in females. Females did not smoke at all.

Table 3 shows 33.67% males and 4.67 females were consuming smokeless tobacco products daily in one or other form such as chewing tobacco-lime, betel nut, pan-masala, snuff etc. (p<0.05). Among males, prevalence of smokeless tobacco was higher in class IV employees compare to class III employees (χ2=45.15, p<0.05).

Mean age of starting tobacco products was earlier in males than in females (p<0.05).

Table 4: Age group wise distribution of prevalence of Tobacco

Age Group (Years)	Total Subjects	Current Smokers (%)	Current use of smokeless tobacco (%)
25-34	158	7 (4.43)	22 (13.92)
35-44	110	7 (6.36)	29 (26.36)
45-54	210	12 (5.71)	37 (17.61)
≥ 55	122	13 (10.65)	27 (22.13)
Total	600	39 (6.5)	115 (19.17)

Table 4 shows prevalence of smoking (10.65%) was higher in age group of 55 years and above. Prevalence of consumption of smokeless tobacco (26.36%) was higher in 35-44 years of age group employees as compared to others.

DISCUSSION

The prevalence of smoking among males was 13% (Table 2) which was similar to study done by Bhagyalaxmi A. et al., in Gandhinagar and Mehan et al., in Vadodara in which prevalence of smoking in urban males was 12.8% and 12.2% respectively.[11,12] This prevalence of smoking is lower than study done by the ICMR-WHO (26.5% in urban area).[13] This difference is because rural and slum areas showed a higher proportion of tobacco users as compared to urban areas in latter.

With respect to gender, our finding that tobacco usage was higher among males (33.67%) when compared to females (4.67%) also confirms the observations made in other studies on tobacco use [5,14-16] in India. (Table 3). These findings are comparable with the findings (51.4 % among males, 7.4% among females) of NFHS-4.[17] In present study low prevalence of tobacco consumption in female employees may be due to awareness regarding health hazards of tobacco use or maybe it's just traditionally very low among female. Women were lifetime abstainer for any kind of smoking tobacco. As per GATS-India 2009-10, 1.5% women were smoker in Gujarat.[7]

In the present study, the mean age of tobacco initiation was found to be 28.08 years in case of smokers, while in case of tobacco chewers, it was 27.99 years male and 45.07 years in females. In another study done in urban Jamnagar the mean age of tobacco initiation was found to be 26.5 years in case of smokers, while it was 23.6 years in case of tobacco chewers.[18] Both the study results are comparable. Women who started chewing tobacco in later life might be having tradition or some believes about some goodness of tobacco which further need to be explored. Reasons for usage of tobacco can be explored further. Pan-masala and Tobacco were the predominant forms of chewing tobacco in present study. Joshi, U. et al. also found Mawa-masala was the preferred form of chewing found in 63.72% chewers followed by Gutka in 57.6% in urban area of Jamnagar. The reason being more usage of mawa masala can be due to cheaper rates of the same and it is so preferable in class III and IV employees.[18]

In present study, tobacco smoking was highest in age group of 55 years and above and smokeless tobacco consumption was highest in 35-44 years of age group (Table 4). As per GATS-India 2009-10[7], use of smoked tobacco was highest in 45-54 years of age group and smokeless tobacco consumption was highest in 65+ years of age group. The reason of increase usage with age can be due to they are financially more affording and get more spare time once settled with job and family. Sen U et al reported that increased tobacco use was associated with older age groups.[19]

Exposure to second hand smoking at home, work place or public places were reported by 112 (37.33%) males and 70 (23.33%) in females. As per GATS 2 about 38.7% of adults were exposed to second hand smoke at home and 30.2% of adults who work indoors are exposed to second-hand smoke at their workplace. [20]

CONCLUSION

Initiation of tobacco usage was found commonly in late twenties. Increased use of smoking tobacco was associated with older age and male gender. Mawa-masala was the preferred form of chewing tobacco. Prevalence of tobacco was significantly higher in class IV compared to class III employees.

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