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TOBACCO USE AMONG GOVERNMENT MEDICAL STUDENTS OF LUCKNOW: NEED OF FORMAL CESSATION TRAINING

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ABSTRACT

Introduction: According to WHO report “Global Action Plan for the prevention and control of Non-communicable diseases 2013 – 2020”, the target was 30% reduction in prevalence of current tobacco use in persons aged 15+ years. With this background this study was undertaken to determine the current prevalence of tobacco intake by medical students in Lucknow. **Material & Methods:** A cross-sectional study was conducted among medical undergraduate students of a government medical College in Lucknow, Uttar Pradesh, between November 2017 to February 2018, after taking ethical approval from institutional ethical committee. Selected students were asked to fill a predesigned pretested questionnaire after taking written informed consent. The data collected was analyzed using SPSS version 23. **Results:** Out of a total of 200 students, 7% of students admitted of using tobacco currently while 5.5% admitted of using it in the past and had quit it. 18% of respondents had experimented tobacco use once. Among the current users, a higher proportion (57.1%) used tobacco in smoked form while remaining (42.9%) used in smoked and chewed form both. Male gender, history of tobacco use among parent(s), friends and roommates were found significant predictors to current tobacco use. **Conclusions:** Medical students need to undergo formal tobacco cessation training. Tobacco cessation clinics are needed in all institutions to support the control of tobacco use.

Key-words: Tobacco use, government, medical students, Lucknow, cessation training

INTRODUCTION

In India, tobacco use among children and youth is quite high. The Global Youth Tobacco Survey (GYTS) 2006 revealed that the prevalence of current use of tobacco among 13–15-year-olds is 14%. GATS 2 revealed that 28.6 percent (266.8 million) of adults in India, aged 15 and above currently use tobacco in some form. Among the adults 24.9 percent (232.4 million) are daily tobacco users and 3.7 percent (34.4 million) are occasional users. The mean age at initiation of tobacco use is 18.9 years in GATS 2.¹

Indian Studies among students across the Indian metropolises provide variable estimates of the current use of tobacco from as low as 4% in Mumbai to as high as 41.1% in Chennai.² According to WHO report on Global Tobacco Epidemic 2017 – country profile, India, the total adult current tobacco smoking was found to be 14.0% and Daily tobacco smoking was found to be 10.7%. If current trends continue tobacco will account for 13 percent of all deaths in India by 2020.³ According to WHO report “Global Action Plan for the prevention and control of Non-communicable diseases 2013 – 2020”, the target was 30% reduction in prevalence of current tobacco use in persons aged 15+ years.⁴ Despite their important roles as future doctors in tobacco cessation counselling, the high prevalence of tobacco use among medical students may

hinder them from advocating tobacco control policies and providing cessation counselling.⁵ With this background this study was undertaken to determine the current prevalence of tobacco intake by medical students in Lucknow and to identify the various socio-demographic factors associated.

MATERIAL & METHODS

A cross-sectional study was conducted among medical undergraduate students of a government medical College in Lucknow, Uttar Pradesh, between November 2017 to February 2018, after taking ethical approval from institutional ethical committee of King George’s medical University UP, Lucknow. Sample size was calculated by taking prevalence as 7.2%, with two side alpha at 95%, allowable error at 4%, and assuming 20% non-response rate, a minimum sample of 195 students was required for achieving primary objective which was rounded off to 200 students. Students were chosen randomly from attendance register until sample size was achieved; Equal number of students were chosen from each batch. Selected students were asked to fill a predesigned pretested questionnaire after taking written informed consent. The questionnaire was explained to them in

Table 1 : Distribution of Socio-demographic variables according to the status of tobacco usage among students

VARIABLES		Tobacco Products				Total	
		Using Currently	Used In Past And Left	Yes, experimented Once	Never		
Age	<22	8 -57.10%	8 -72.70%	26 -72.20%	92 -66.20%	134 -67.00%	
	>22	6 -42.90%	3 -27.30%	10 -27.80%	47 -33.80%	66 -33.00%	
Gender	Male	12 -85.70%	10 -90.90%	18 -50.00%	72 -51.80%	112 -56.00%	
	Female	2 -14.30%	1 -9.10%	18 -50.00%	67 -48.20%	88 -44.00%	
MBBS Course Year	I	1 -7.10%	5 -45.50%	11 -30.60%	33 -23.70%	50 -25.00%	
	II	1 -7.10%	2 -18.20%	11 -30.60%	36 -25.90%	50 -25.00%	
	III	6 -42.90%	2 -18.20%	6 -16.70%	36 -25.90%	50 -25.00%	
	IV	6 -42.90%	2 -18.20%	8 -22.20%	34 -24.50%	50 -25.00%	
Current Residence	Home	0 0.00%	0 0.00%	2 -5.60%	9 -6.50%	11 -5.50%	
	Hostel	14 -100.00%	11 -100.00%	34 -94.40%	130 -93.50%	189 -94.50%	
Sharing Of Room	No	2 -14.30%	0 0.00%	3 -8.30%	30 -21.70%	35 -17.60%	
	Yes	12 -85.70%	11 -100.00%	33 -91.70%	108 -78.30%	164 -82.40%	
History Of Tobacco Use	Parent	No	6 -42.90%	6 -54.50%	22 -61.10%	109 -78.40%	143 -71.50%
		Yes	8 -57.10%	5 -45.50%	14 -38.90%	30 -21.60%	57 -28.50%
	Friends	No	7 -50.00%	7 -63.60%	30 -83.30%	109 -78.40%	153 -76.50%
		Yes	7 -50.00%	4 -36.40%	6 -16.70%	30 -21.60%	47 -23.50%
Roommate	No	7 -50.00%	10 -90.90%	35 -97.20%	129 -92.80%	181 -90.50%	
	Yes	7 -50.00%	1 -9.10%	1 -2.80%	10 -7.20%	19 -9.50%	
SES as per Modified Prasad Classification	I	6 -42.90%	7 -63.60%	16 -44.40%	56 -40.30%	85 -42.50%	
	II	0 0.00%	1 -9.10%	9 -25.00%	36 -25.90%	46 -23.00%	
	III	5 -35.70%	1 -9.10%	5 -13.90%	16 -11.50%	27 -13.50%	
	IV	3 -21.40%	2 -18.20%	6 -16.70%	31 -22.30%	42 -21.00%	
Total		14 -7.00%	11 -5.50%	36 -18.00%	139 -69.50%	200 -100%	

detail. Filled questionnaire were checked for completeness and incomplete forms were excluded from the study.

Data was collected for sociodemographic characteristics. Following operational definitions were used in the study.

“Current use” was defined as having used tobacco at regularly in the last 30 days preceding the survey. “Never use” was defined as having not used tobacco even once in their lifetime.

“Past use” was defined as use of tobacco in past regularly but not consumed the tobacco product in past 30 days preceding the survey “Experimented once” was defined tried tobacco product once in last 3 years.

The data collected was tabulated, coded, and analyzed using Microsoft Excel and SPSS version 23 by IBM for Windows, discreet data was presented in numbers and percentage, continuous data was recorded in median and interquartile range, for all the tests, P-value <0.05 was considered significant. Predictors for current tobacco use against current nonuse was determined using binary logistic regression by enter model.

RESULTS

A total of 200 students participated in the study with 112 (56.0%) males and 88 females (44.0%). Majority of respondents were aged less than 22 years (67.0%) and were hostellers (94.5%). A total of 7% of students admitted of using tobacco currently while 5.5% admitted of using it in the past and had quit it. 18% of respondents had experimented tobacco use once. Among the current users prevalence of tobacco use was found higher among the 3rd (42.9%) and 4th year (42.9%) students as compared to the 1st (7.1%) and 2nd year (7.1%) ones. All the current users were hostellers as compared to none who resided at home. Majority (85.7%) of the current users were living in a shared room. A higher proportion (42.9%) of the current users belonged to upper socioeconomic class (Table 1)

Table 2: Distribution of characteristics of students who had experimented tobacco use once

Characteristics	N(36)	%	
Reason for Trying Tobacco Product	Peer Pressure	10	27.8%
	To Boost Confidence	1	2.8%
	To Relieve Stress	2	5.6%
	Just for fun	2	5.6%
Type of Tobacco Product Tried	Smoked Tobacco	29	80.6%
	Chewing Tobacco	7	19.4%
Willingness To Try Tobacco Product Again	Never	25	71.4%
	May Be	10	28.6%

Out of 200 36 (18.0%) students had experimented tobacco use once. Majority of them had done it under peer pressure (27.8%) and had used it in smoked form (80.6%). Nearly 28.6% of students who had experimented tobacco use in the past still showed willingness to use tobacco in future. (Table 2)

Table 3: Distribution of characteristics of past tobacco users

PAST USERS		N (11)	%/ Median (IQR)
Tobacco Product	Chewed	3	27.3%
	Smoked	8	72.7%
	Mood elevation	8	72.7%
Initiated tobacco abuse*	To boost image	1	9.1%
	To clear bowels	1	9.1%
	No response	1	9.1%
	Headache	2	18.2%
Withdrawal Symptoms*	Shortness of breath	1	9.1%
	Irritability	1	9.1%
	Insomnia	2	18.2%
	Loss of appetite	1	9.1%
Method adopted for quitting tobacco use*	Other	2	18.2%
	Self-Decision	6	54.5%
	No response given	5	45.5%

**Multiple Response*

Among the past users, majority (72.7%) had used tobacco in smoked form. Most (72.7%) of the past users had initiated tobacco use to elevate their mood. A higher proportion of the students reported withdrawal symptoms like headache (18.2%) and insomnia (18.2%) etc. A higher proportion (54.5%) of past users had quit the habit by self decision.(Table 3)

Table 4: Distribution of characteristics of current users of tobacco products.

CURRENT USERS		N (14)	% / Median (IQR)
Type of tobacco abused	Smoked	8	57.1%
	Chewed and smoked	6	42.9%
Quantity (cigarettes) (Smoked Tobacco)	used per day	12	4.5 (4.0 – 10.0)
Quantity (packets) (Chewed Tobacco)	used per day	6	2.5 (2.0 – 5.5)
Duration since using (in years)		14	5.0 (2.75 – 6.25)
Tobacco abuse occasionally(cigarette)	Mood elevation	2	25.0%
	To boost image	6	42.9%
Initiated tobacco abuse*	To clear bowels	7	50.0%
	Peer pressure	1	7.1%
	Feels Good	4	28.6%
Reasons for continuing tobacco abuse*	For relieving Stress	6	42.9%
	No Response	4	28.6%
Tried quitting tobacco abuse (past 12 months)		8	57.1%
Duration of quitting (in days)		8	14.5 (8.75 – 318.75)
Number of times attempted to quit tobacco		8	4.5 (2.25 – 6.5)
Person who influenced to quit smoking*	Self	8	57.1%
	Friends	3	21.4%
	Parents	2	14.3%

Table 5: Predictors of current use of tobacco products among students.

	Others	1	7.1%
Way tried for quitting*	Nicotine chewing gums	1	7.1%
	Will power	8	57.1%
	Craving	6	42.9%
Reason for restarting tobacco Abuse*	Triggers	2	14.3%
	Withdrawal symptoms	1	7.1%
	Stress	2	14.3%
Symptoms*	Headache	4	28.6%
	Shortness of breath	3	21.4%
	Persistent cough with sputum	1	7.1%
	Bad breath	3	21.4%
	Tooth loss	1	7.1%
	Irritability	3	21.4%
	Pain in legs on walking	1	7.1%
	Oral ulcers	3	21.4%
	Insomnia	2	14.3%

**Multiple Response*

Among the current users, a higher proportion (57.1%) used tobacco in smoked form while remaining (42.9%) used in smoked and chewed form both. Most of the current users initiated tobacco use to boost image (50.0%) followed by elevation of mood (42.9%) and peer pressure (28.6%). The most common reason cited for continuing the habit was feeling of goodness (42.9%). Nearly 57.1% had tried quitting tobacco in the past 12 months. The most common way tried for quitting was will power (57.1%). The most common reason for restarting tobacco abuse was craving (42.9%). The common symptoms reported by the current tobacco users were headache (28.6%), shortness of breath (21.4%), bad breath (21.4%), irritability (21.4%), oral ulcers (21.4%) and insomnia (14.3%) (Table 4).

Current Tobacco use was 5.1 times more common among males than females, 3.7 times more common among those who had a history of tobacco use among parent(s) than among those whose parent(s) did not smoke, 3.6 times more common whose friends used tobacco as compared to those whose friends did not use tobacco and 14.5 times more common among those whose roommates used tobacco as compared to those who did not. (Table 5)

DISCUSSION

A total of 7% of students admitted of using tobacco currently while 5.5% admitted of using it in the past and had quit it. 18% of respondents had experienced tobacco use once. Previous studies from India which were conducted among undergraduate medical students had reported a prevalence of tobacco use of between 8.0%-50.0%.⁶⁻¹²

Among the current users prevalence of tobacco use was found higher among the senior students as compared to junior ones. Our findings are coherent to those reported among the medical students of Orissa, Bareilly, and Lahore^{9,13, 14}

VARIABLES	Univariate Analysis		Multivariate Analysis	
	OR	CI	Adjusted OR	CI
		0.211		
Age (> 22)	0.635	-	-	-
		1.912		
Age (< 22)	Ref		-	-
		1.124		
Gender (Male)	5.16	-	5.889	1.135 - 30.552
		23.698		
Gender (Female)	Ref			
		0.845		
Type of Family (Joint)	2.542	-	-	-
		7.642		
Type of Family (Nuclear)	Ref		-	-
		0.623		
Background (Rural)	1.882	-	-	-
		5.684		
Background (Urban)	Ref		-	-
		0.287		
Sharing of Room (Yes)	1.342	-	-	-
		6.276		
Sharing of Room (No)	Ref		-	-
		1.231		
History of tobacco use in parent (Yes)	3.728	-	2.506	.732 - 8.582
		11.285		
History of tobacco use in parent (No)	Ref			
		.208		
History of tobacco use in Other family members (Yes)	0.981	-	-	-
		4.631		
History of tobacco use in Other family members (No)	Ref		-	-
		1.210		
History of tobacco use among Friends (Yes)	3.65	-	-	-
		11.015		
History of tobacco use among Friends (No)	Ref		-	-
		4.368		
History of tobacco use among Roommate (Yes)	14.5	-	12.837	3.542 - 46.517
		48.137		
History of tobacco use among Roommate (No)	Ref			

The prevalence of experimental use of tobacco was 18.0% among medical students in our study. Experimental use of tobacco significantly increased from 24% in 2007 to 42% among males and similarly among females, 3.3% in 2007 and 11.2% in 2013 in a south Indian study.¹⁵ Nearly a quarter of students who had experimented tobacco use in the past still showed willingness to use it in future. It is not clear whether students who have experimented with smoking in the past, will transit to regular use in the future in the face of the efforts of the tobacco industry to reach new markets with the aid of multiple traditional gimmicks to lure youth.^{16,17} The industry envisions the uptake of smoking as a process that extends into young adulthood, during which time adolescents' experimental or occasional smoking becomes solidified into a regular smoking habit.¹⁸

Factors such as increased psychosocial risk, key socioeconomic factors, external environment and continuing lack of access to tobacco control education could lead to greater vulnerability among students who have experimented with smoking in the past.¹⁵

Among the current users, a higher proportion (57.1%) used tobacco in smoked form while remaining (42.9%) used in smoked and chewed form both. Warren et al (2008) reported that in 47 out of 80 global health professional students' survey sites around the world, over 20% of the medical students currently smoked cigarettes; and that in 29 of 77 sites, over 10% of the medical students currently used other tobacco products.¹⁹

Nearly 57.1% had tried quitting tobacco in the past 12 months and the most common reason for restarting tobacco abuse was craving (42.9%) in this study. Craving is a core feature of tobacco use disorder as well as a significant predictor of smoking relapse. Studies have shown that appetitive smoking-related stimuli (e.g., someone smoking) trigger significant cravings in smokers impede their self-control capacities and promote drug seeking behavior.²⁰

Nearly a quarter of medical students in this study had experienced health problems after tobacco use. About 14.13% of the medical students of Bareilly had suffered from a health problem since they had started consuming tobacco.¹³

Current Tobacco use was more common among males, who had a history of parent tobacco use, whose friends used tobacco and among those whose roommates used tobacco in the present study. Lower prevalence of tobacco use among females as compared to males can be attributed to its social unacceptability for females. It has been reported that parent smoking contributes to the onset of daily smoking in their teenagers even if parents practice good family management, hold norms against teen tobacco use, and do not involve their children in their own tobacco use. Smoking prevention programs should include components focused on parents.²¹ Students residing in environment of hostels with sharing rooms are more vulnerable to experiment tobacco use out of peer pressure or just for fun. Medical students being role models of the society, should be encouraged not to experiment tobacco use. Indeed, medical students in our study need to undergo formal tobacco cessation training. In a recent study, 125 undergraduate medical students received a multimodal and interactive teaching module on smoking cessation and an objective structured clinical examination at the end of the module and 6 months later. Results were compared to data obtained from a historical control cohort ($n = 70$) unexposed to the intervention. At the 6-month follow-up, scores were significantly higher in the intervention than the control group (71.5% vs. 60.5%; $p < .001$).²² In another model, 10 U.S. medical schools in a group-randomized controlled trial were evaluated to find whether a multimodal educational (MME) intervention compared to traditional education (TE) will improve observed tobacco

treatment skills. MME is primarily composed of TE approaches (i.e. didactics) plus a 1st year web-based course and preceptor-facilitated training during a 3rd year clerkship rotation. It was hypothesized that MME intervention will better prepare students in tobacco dependence treatment as measured by the OSCE.²³ Medical education curricula and policies focused on increasing knowledge of tobacco health hazards and smoking cessation, while also aiming to decrease medical student tobacco consumption rates, stand to improve global tobacco-related public health.²⁴

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