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# Frequency and risk factors of Cigarette Smoking among male medical students of Bacha Khan Medical College, Mardan

**Dr Hanifullah Hanfi**

Medical student, MBBS, Khyber Medical University, Peshawar  
Corresponding author email: [hanifhanfi888999@gmail.com](mailto:hanifhanfi888999@gmail.com)

**Dr Abdul Qadeer Ahmad**

Medical Student, MBBS, Khyber Medical University, Peshawar

**Dr Waqas Ahmad**

Medical Student, MBBS, Khyber Medical University, Peshawar

**Dr Usama Masroof**

Medical Student, MBBS, Khyber Medical University, Peshawar

**Dr Dawood Khan**

Medical Student, MBBS, Khyber Medical University, Peshawar

**Dr Shahkar Ali Khan**

Medical Student, MBBS, Khyber Medical University, Peshawar

**Dr Abdul Rehman**

Medical Student, MBBS, Khyber Medical University, Peshawar

**Dr Muhammad Suleman**

Medical Student, MBBS, Khyber Medical University, Peshawar

**Abstract**--Tobacco consumption is a major global health issue that contributes significantly to morbidity and mortality rates. The World Health Organization (WHO) estimates that over five million deaths occur each year due to tobacco use, projected to rise to 8 million by 2030. Furthermore, current research reveals that 47% of males and 12% of females worldwide smoke. Of particular concern is cigarette and tobacco use among medical students, given their role in crafting public health policy and guiding society's tobacco prevention measures. Studies show that smoking rates among medical students in developing countries are between 16-21%, with multi-country surveys in countries like Malaysia, India, Pakistan, Nepal and

Bangladesh indicating rates between 6.7% and 17.8%. For example, a study conducted on medical students in Damascus University Faculty of Medicine revealed a 10.9% prevalence of cigarette smoking, 23.5% for water pipe, and 7.3% for both, with higher rates reported among final-year students. Likewise, a study of Rawalpindi Medical College students found that 24% had smoked at least once, with greater prevalence among hostellites rather than day scholar students. Our research aims to examine the prevalence and contributing factors of smoking among male medical students at Bacha Khan Medical College, Mardan, to aid the development of effective interventions to address this concern.

**Keywords**---risk of cigarette, smoking, tobacco consumption.

## **Introduction**

Cigarette smoking is the most significant preventable risk factor for mortality and morbidity in developed countries. Changes in the prevalence of cigarette smoking in the United States have been noticed in the last half of the twentieth century. While male smoking rates have decreased, female smoking rates have increased. This has reduced current smoking levels to about the quarter of the adult population and has also narrowed the gap in smoking prevalence and associated diseases across genders. Younger individuals, people with lower income and education, and those living in disadvantaged neighborhoods predominantly exhibit current smoking in the United States. Daily smokers smoke cigarettes to maintain satisfactory nicotine levels in their brain, mainly to avoid the unfavorable effects that come with nicotine withdrawal, as well as to stabilize their mood. Habitual smokers have exhibited both higher and lower levels of stress and arousal, respectively, than non-smokers, and they also possess higher impulsivity and neuroticism trait values. Nicotine dependence is the most prevalent psychiatric disorder in the United States, with substance abuse, major depression, and anxiety being the most prevalent psychiatric comorbid conditions associated with nicotine dependence. Research studies in twins have identified genetic factors that account for greater variability in vulnerability and persistence in smoking behavior. Future studies on the cause of smoking behavior must consider these associated demographic, social, and psychiatric factors, along with genetic factors, to develop a comprehensive understanding of this multi-faceted human behavior. This cross-sectional descriptive study was conducted in Kolkata to collect anonymous data from 515 medical and 349 non-medical college students attending two medical and two general colleges selected randomly. The research aimed to establish the prevalence of tobacco use and smoking among both groups, considering their gender and year of study. Overall, the study established significantly lower rates of tobacco adoption (18.3% vs 43.6%) and smoking (14.9% vs 40.7%) among the medical students than non-medical students. Medical students showed higher rates of correct knowledge about the negative effects of tobacco consumption, higher quitting rates, and less use of filter-tipped cigarettes than non-medical students. Filter-tipped cigarette was the more common choice of non-medical participants, with smoking as the predominant mode of use among the mild users (62.3%). Curiosity was the

primary reason for the initiation of tobacco use among the participants, with two-thirds of users wanting to quit using tobacco. The study analyzed 1200 Banja Luka University students from all faculties using standardized questionnaires: the Global Youth Tobacco Survey (GYTS) and the Global Health Professional Student Survey (GHPSS). The researchers gathered data through questionnaires and analyzed it using descriptive statistics, Pearson's Chi-square test, and logistic regression. The results showed that 34.1% of the students had smoked within the first 30 days of the study, with almost 75% of the student population explaining that they had tried cigarette smoking. Medical students were revealed to be 27.2% less likely to smoke than students from other faculties. In general, 87% of all students were aware of the negative health effects of cigarette smoking, while 79% acknowledged the dangers of secondhand smoke, and 65% indicated the difficulty in quitting. Students who spend more of their personal money had a greater likelihood of smoking, whereas exposure to secondhand smoke increased smoking odds by 62%. An online cross-sectional study was carried out among 2452 students that attended 14 medical faculties in the Western Balkans (specifically, the Republic of Slovenia, the Republic of Croatia, Bosnia and Herzegovina, the Republic of North Macedonia, and the Republic of Serbia).(10) The research conducted online surveys to collect the data. The investigation discovered a greater number of non-smokers than smokers among medical students. Students' gender and whether their parents smoked were the only statistically significant factors related to their smoking status. Male students who lived in urban areas and had parents who smoked were found to have a higher prevalence of smoking. Published on PubMed, this cross-sectional study utilized the proportionate sampling method to select 538 health and medical students. The researchers assessed the participants' social capital and attitudes towards smoking utilizing the social capital questionnaire (SCQ) and the scale of cigarette smoking attitude (CSA). Descriptive statistics, Pearson correlation coefficient, and multiple regression analysis were utilized to analyze the data. Results indicated that approximately 25% of health and medical students had reported smoking either currently or previously, while 30% had positive or indifferent attitudes towards smoking. The mean scores of the SCQ and the CSA were  $105.1 \pm 19.7$  and  $48.6 \pm 11.2$ , respectively. The findings revealed a statistically significant negative association between the SCQ and CSA scores ( $r = -0.24$ ;  $p < 0.001$ ). The regression analysis established a negative and statistically significant association between the SCQ scores and the CSA scores controlling for potential confounders ( $B: -0.09$ ; 95% CI:  $-0.13$  to  $-0.004$ ). The Journal of Environmental and Public Health published a study in July 2022, available on PubMed, which examined the prevalence of tobacco usage among undergraduate public health students in Kathmandu Valley, Nepal. The study included 386 students, and researchers employed the Global Health Professions Student Survey (GHPSS) questionnaire. The results of the study revealed that 16.8% of the students were current cigarette smokers, 39.9% had smoked cigarettes at some point, and 62.2% had their first cigarette smoking experience during adolescence. Meanwhile, 11.7% of the participants were revealed to be current users of other tobacco products. The research indicated that students with a parental history of tobacco use and friends who smoked were more likely to be current smokers. Additionally, students with higher age and those living without family had a higher likelihood of being current smokers. Overall, the study discovered that the prevalence of tobacco use among public health students in Kathmandu Valley, Nepal is high.

This study, published on PubMed, was conducted among medical students attending higher medical educational institutions in Ukraine to identify the factors contributing to the spread of smoking amongst this population and to identify the underlying causes of smoking among these students. Researchers analyzed 435 questionnaires completed by students from two higher medical educational institutions. Results revealed that 268 of the respondents had tried smoking at least once, while 167 had no experience with tobacco. Among all respondents, 162 smoked out of curiosity, 43 smoked due to personal issues or drama, and 3 smoked due to both curiosity and personal problems. The study aimed to examine the relationship between smoking, social and economic situations among young people, and the factors responsible for the spread of smoking habits among higher medical educational students in Ukraine. In June 2020, the Journal of Nepal Medical Association published a descriptive cross-sectional study that was carried out in a tertiary care teaching hospital in Nepal. The study aimed to determine the prevalence of smoking among third-year medical students in the hospital, and researchers employed the whole sampling technique to collect data. The Global Health Professional Students Survey questionnaire was utilized for the study, and data was analyzed in the statistical package for social sciences. Results indicated that 30.1% of the selected medical students from Kathmandu Medical College and Teaching Hospital were current smokers, with 23% of the smokers being male. Moreover, 49.4% of the students reported ever smoking cigarettes in their lives, and late adolescence was the first cigarette smoking experience for 23.9% of the participants. The study also indicated that only 5.3% of the students used other forms of tobacco. Nearly half of the students, 46.9%, reported being exposed to second-hand smoke both at home and in public, while 15.9% were exposed only at public places, and 5.3% reported being exposed only at home.

### **Hypothesis**

Stress, pleasure, anxiety, depression, and social pressure are considered as predominant reasons for smoking initiation among medical students and its prevalence increases with advancement to higher professional years in medical. The following are the aims and objectives of the research

- To determine the frequency of smoking among male medical students of BKMC.
- To know about the frequency of smoking among male medical students of each academic year of MBBS.
- To know about the frequency of smoking in hostilities and day scholar students.
- To find the leading causes of smoking among the male medical students of BKMC.
- To find the frequency of smoker students who want to quit smoking.

### **Rationale of the study**

A plethora of epidemiological studies done nationally and internationally have shown the use of tobacco and cigarette smoking among medical students and physicians. Besides, the incidence of morbidity and mortality is also very high in young smokers due to smoking related diseases. This health problem needs

serious attention. Medical students, the future health providers need awareness and motivation to get prepared for their future role in the society. Such a study in Mardan was not done on medical students before so we felt a need to conduct a study in our medical college to know about the frequency and risk factors of smoking among the medical students, so that timely necessary actions could be taken.

### Materials and Methods Setting

This was a cross-sectional study conducted among the students of Bacha Khan Medical College Mardan.

#### *Sample size:*

A sample of 150 was taken to represent our study in which 17 were non-responsive while the rest responded well.

#### *Sampling technique:*

We used systematic random sampling technique for our study (in which every third person of the class was provided with questionnaire). Inclusion criteria: This study was conducted on male students of Bacha Khan Medical Colleges. Participation was based on the well-being of students.

#### *Study design:*

A cross-sectional study was conducted in Bacha Khan Medical College Mardan to assess the frequency of smoking.

#### *Data collecting process:*

A survey instrument (questionnaire) was developed for the assessment of the students of BKMC. This questionnaire was developed using standard procedure that includes literature review, group discussion, expert evaluation, pretesting and validation. The developed survey instrument consists of 11 questions. The questionnaire was sent to an expert of community medicine and public health for meticulous assessment for the content and relevance to the objectives of the study.

#### 1.1. Tables

Table 1.1

Class			
		Frequency	Percent
Valid	1st year	27	19.7
	2nd Year	33	24.1
	3rd Year	19	13.9
	4th Year	28	20.4
	Final Year	26	19.0
	Total	133	97.1
	Missing	System	4
Total		137	100.0

Table 1.2

Age			
		Frequency	Percent
Valid	19	4	2.9
	20	13	9.5
	21	30	21.9
	22	28	20.4
	23	23	16.8
	24	27	19.7
	25	4	2.9
	Total	129	94.2
	Missing	System	8
Total		137	100.0

Table 1.3

Marital status			
		Frequency	Percent
Valid	Unmarried	121	88.3
	Married	6	4.4
	Total	127	92.7
Missing	System	10	7.3
Total		137	100.0

Table 1.4

Hostelite/Day Scholar			
		Frequency	Percent
Valid	Hostelite	118	86.1
	Day Scholar	11	8.0
	Total	129	94.2
Missing	System	8	5.8
Total		137	100.0

Table 1.5

Household Income			
		Frequency	Percent
Valid	0-30000PKR	14	10.2
	30000-60000 PKR	22	16.1
	60000-90000 PKR	8	5.8
	above 90000 PKR	36	26.3
	Total	80	58.4
Missing	System	57	41.6
Total		137	100.0

Table 1.6

Have you ever tried smoking?			
		Frequency	Percent
Valid	no	70	51.1
	yes	58	42.3
	Total	128	93.4
Missing	System	9	6.6
Total		137	100.0

Table 1.7

Do you smoke currently?			
		Frequency	Percent
Valid	no	43	31.4
	yes	19	13.9
	Total	62	45.3
Missing	System	75	54.7
Total		137	100.0

Table 1.8

When did you start smoking? Before or after admission in medical college?			
Before/After			
		Frequency	Percent
Valid	Before	29	21.2
	After	23	16.8
	Total	52	38.0
Missing	System	85	62.0
Total		137	100.0

Table 1.9

In which academic year did you start smoking?			
		Frequency	Percent
Valid	First Year	10	7.3
	Second Year	8	5.8
	Third Year	5	3.6
	Fourth Year	1	.7
	Final Year	1	.7
	Total	25	18.2
Missing	System	112	81.8
Total		137	100.0

Table 1.10

Is there any former smoker in your family? If so, mention the relation?			
		Frequency	Percent
Valid	None	1	.7
	Father	7	5.1
	Brother	5	3.6
	Uncle	16	11.7
	Grandfather	2	1.5
	Cousin	5	3.6
	Total	36	26.3
	Missing	System	101
Total		137	100.0

Why do you smoke?			
		Frequency	Percent
Valid	To overcome distress and anxiety	6	4.4
	Pleasure and fun	22	16.1
	Relaxation	6	4.4
	Personal problems	8	5.8
	Influenced from media/friend	9	6.6
	Total	51	37.2
Missing	System	86	62.8
Total		137	100.0

Do you want to quit smoking?			
		Frequency	Percent
Valid	No	9	6.6
	Yes	40	29.2
	Total	49	35.8
Missing	System	88	64.2
Total		137	100.0

Do you think you would be able to stop smoking if you wanted to?			
		Frequency	Percent
Valid	No	4	2.9
	Yes	48	35.0
	Total	52	38.0
Missing	System	85	62.0
Total		137	100.0

Have you tried to quit smoking?			
		Frequency	Percent
Valid	No	11	8.0
	Yes	40	29.2
	Total	51	37.2
Missing	System	86	62.8
Total		137	100.0

### Frequency of Smoking Among Students of Each Academic Year BKMC

	1st Year	2nd year	3rd Year	4th Year	Final Year
<b>No Smoking</b>	17	13	12	05	05
<b>Zero to five</b>	18	18	07	09	07
<b>Six to Ten</b>	03	02	05	02	00
<b>Eleven to Fifteen</b>	02	04	01	00	00
<b>Sixteen to Twenty</b>	00	00	00	01	01
<b>Above Twenty</b>	02	01	01	01	00

Table 1.15

### Parent's Education

Table 1.16

	Father's Education	Mother's Education
<b>Below Matric</b>	19	58
<b>Matric</b>	11	11
<b>Intermediate</b>	13	08
<b>Bachelors</b>	26	08
<b>Higher Education</b>	47	14

### Discussion

Smoking is currently the major risk factor for non-communicable chronic illnesses, which is preventable! Health professionals play a vital role in the control of this existing problem. But, there are some crucial shortcomings; major being the health professionals themselves are prone to smoking. In our study, it was found that a greater number of students had tried to smoke. This study revealed that number of smoker students increased in first year as opposed to that of final year. The response rate was excellent in this study. Tables are drawn to show the socioeconomic attributes of respondents. There was no wide fluctuation in the frequency and percentages of all the classes. From perspective of the classes the 2nd year have the greatest no of frequency and percentage and the 3rd year have the least frequency and percentage. Age distribution was also studied which rise in tendency from age 19 to 22 and then a decline up to age 25. The study also reveals that unmarried and hostilities students have a greater tendency of smoking. Household income suggest that income of above 90k has the greatest no of frequency. The influence of family members in enhancing smoking is well demonstrated in this study. Most of the smoker students were found to have family members who were also smokers. Among family members, cousins were among the highest. It was also found that most of the students were smoking just for fun and entertainment purpose. The study also shows that there was a connection between smoking and to reduce stress and anxiety. The study also suggests that heavy of number of students want to quit smoking which was a good sign. The smoking status is based on self-reporting by the students. This can result in under-reporting of smoking status, even though no identification was required

## Conclusion

Based on the results of the present study, prevalence of smoking in the students of Bacha Khan Medical College is very low. Majority of the students that started smoking after getting admission in BKMC were in 1st year. When asked in the questionnaire, a large number of students answered that they smoke for pleasure and fun. The overall number of smokers increase as they progress in their academic years. Almost all of the smokers wanted to quit smoking and an even greater ratio of smokers were hopeful that they could quit smoking if they wanted to.

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