

## Prevalence and determinants of smoking among male medical students of twin cities of Pakistan

Ume Sughra<sup>1</sup>, Muhammad Imran<sup>2</sup>

### ABSTRACT

This descriptive cross-sectional study was conducted at Foundation University Medical College (FUMC) Islamabad from 1<sup>st</sup> January - 30<sup>th</sup> September, 2014 to determine the prevalence and determinants of smoking, among male medical students of Rawalpindi and Islamabad.

The results shows that out of the total 23% of the participants were smokers, 10.3% were ex-smokers and 66.7% did not smoke ever. Among smokers 57% were already smoking and 43% after joining the medical school. Stress was considered as a major triggering factor for smoking by 44% of the students. Among all students 95% were well aware of its side-effects while 51% of smoker students tried to quit among which relapse was seen in 44%.

These results shows that high prevalence of smoking was observed among male medical students of Rawalpindi and Islamabad. Stress was found to be the major triggering factor for smoking followed by fun seeking and peer pressure.

**Keywords:** Smoking, Prevalence, Male medical students, Medical institutions, Stress

### How to Cite This:

Sughra U, Imran M. Prevalence and determinants of smoking among male medical students of twin cities of Pakistan. *Isra Med J.* 2019; 11(5): 407-410.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

### INTRODUCTION

One of the biggest preventable health hazards being tobacco use kills approximately 6 million people each year. Smoking not only harms the active smokers but also the passive ones. According to a survey, out of 1 billion smokers around the world, 80% of them belong to countries with low to middle socio-economic status, while tobacco associated diseases and death rate being substantial<sup>1,2</sup>.

Johnston et al, reported in 2003 that the trend of smoking among college students has raised from 23% to 31% in between the years 1991 to 1999, per 30 day smoking, before leveling off to about 27%<sup>3</sup>. The most alarming of the concerns being the average age of 15 to 24 years with highest

prevalence of smoking<sup>4</sup>. International Union against Tuberculosis and Lung Disease (IUATLD) along with the collaboration of World Health Organization (WHO) held a number of studies among 9,000 medical students from 42 different countries, which showed wide variations in result graphics<sup>5</sup>. Comparative studies show that European students tend to smoke more than the Asians<sup>6</sup>. The increasing use of tobacco in Pakistan is like the rest of the world, where the prevalence of smoking among male and female population was the average of 36% and 9%, respectively in 1998, which has increased to 54% in male and 20% in female population, according to Pakistan Medical Research Council<sup>7,8</sup>. Recent surveillance data of Pakistan medical colleges shows that 19 – 26% of male and 1 – 5% of female medical students smoke<sup>9</sup>.

According to data collected by different studies, it is reported that despite their knowledge of hazardous effects of smoking, 14% of medical students smoke, with the trend increasing worldwide<sup>10,11</sup>.

Medical students being the future health care professionals, by smoking, are providing with negative role models in the society, instead of abstaining from such vices and providing with guidelines and ways to make a positive difference. The objectives of this research were to determine the prevalence of smoking among male medical students of twin cities and to procure better understanding of the behavioral and socio-demographics factors that influence smoking among them.

### METHODOLOGY

This descriptive cross sectional study was conducted at

1. Associate professor of Public Health & Research Associate, Al-Shifa School of Public Health, Pakistan Institute of Ophthalmology, Rawalpindi
2. Associate professor of Surgery, Foundation University Medical College Islamabad

### Correspondence:

Ume Sughra

Associate Professor of Public Health, Al-Shifa School of Public Health, Pakistan Institute of Ophthalmology, Rawalpindi

Email: dr\_sughra@yahoo.com

Received for Publication: November 07, 2019

Accepted for Publication: November 12, 2019

Foundation University Medical College (FUMC) among the male medical students of five medical colleges of twin cities i.e. Foundation University Medical College, Army Medical College, Rawalpindi Medical College, Rawal Medical and Dental College and Yusra Medical College from 1<sup>st</sup> January 2014- 30<sup>th</sup> September 2014. Proper ethical approval from the Ethical Review Committee of Foundation University Medical College, Islamabad was taken before the start of study.

All universities were contacted through formal letters and permission was sought for collecting data from their medical students. All concerns of universities were addressed. Sample size comprised of 300 students which was calculated by open epi software. A list of all male medical students was obtained from each university administration and sampling frame was constructed accordingly. An id was assigned to each student. From this sampling frame 300 students were selected through computer generated random numbers. A tool was designed for data collection after extensive literature search. It was a pre-tested structured questionnaire. The reliability of the questionnaire was tested through reliability analysis and Crohn bach’s alpha value came out to be 0.73 and the tool was validated also through pilot testing and required changes were made accordingly. The anonymity of identity and responses and confidentiality was ensured to the students. Data was collected from all the selected respondents after getting written informed consent on their smoking habit, triggering factors behind this, quitting and relapse factors.

**Data Analysis:** Data was then entered and analyzed by SPSS Version 17. The results of this study were mainly calculated in frequencies and percentages and were graphically represented as pie charts, bar charts and histograms.

**RESULTS**

The overall prevalence rate of current smokers was found to be 23% in the study population (N=300). From the total student’s population, the smokers were found to be 33.3% out of which 69.7% of them were current smokers and 30.3% were occasional smokers. (Table-I)

**Table-I: Smoking status of respondents (N=300)**

SMOKING STATUS(N=300)	n (%)
Smokers	69(23%)
Ever smoked	30(10%)
non-smokers	201(67%)

Most of the smokers start smoking in their life time during their late teens, 50% of the smokers start smoking during the period of 16-19 years of age. Majority of them, (75%) smoked less than 10 cigarettes per day. (Table-II)

Stress being the major triggering factor to smoke causes the 44% of the smoker’s population to smoke. Whereas 30% of the student-body smokes out of fun and curiosity and peer pressure leads to 11% of the students to smoke. (Table-II)

Being the future healthcare professionals, 95% of the smoker’s population of students was well aware of the hazardous effect

of smoking but despite that they continue smoking regardless of their health issues.

**Table-II: Characteristic features of respondents related to smoking (n=99)**

Characteristics features	n (%)	
Starting age of smoking	<10 yrs	14 (14.1%)
	11-15yrs	6 (6.06%)
	16-19yrs	49 (49.49%)
	>20 yrs	30 (30.3%)
Smoking after joining medical school	Yes	43 (43%)
	No	56 (56%)
Triggering factors for smoking	Stress	44 (44.14%)
	Fun	30 (30.3%)
	Peer pressure	11 (11.1%)
	Family influence	10 (10.1%)
	others	4 (4.04%)

51% of the smokers tried to quit smoking due to their concern for their depilating health but relapse was seen in 44% of them. (Table-III)

**Table-III: characteristics features of respondents related to quitting of smoking (n=51)**

Characteristics features	n (%)	
Attempt at quitting	Yes	51 (51%)
	No	48 (49%)
Stimulus for quitting	Health issues	19 (37%)
	Guilt feeling	11 (21%)
	Family pressure	17 (14%)
	Financial problem	2 (5%)
	others	12 (23%)
Smoking relapse	Yes	22 (44%)
	No	29 (56%)

**DISCUSSION**

Health care professionals, including doctors and medical students, have a leading role in tackling the evil of smoking in community. Thus it is of utmost importance that their attitude and viewpoint are determined in this aspect. As smoking remains a major public health problem around the world and in Pakistan. Therefore, we tried to find out the burden and determinants of smoking among male medical students of twin cities, who in the future have an important role in downplaying the use of smoking in society.

According to our study, an overall prevalence rate of smoking among male medical students was found to be 33% out of which 23% were current smokers and 10% were occasional smokers indicating that a significant proportion of them smoked. The results of other studies held among male medical students of Indian and abroad universities showed that prevalence of cigarette smoking was in accordance with our studies<sup>12,13</sup>. But some other studies have shown that very high prevalence rate >55% among medical students<sup>14,15</sup>. One study done in Karachi adolescents, and the prevalence was found to

be 13.7%<sup>16</sup>, and in contrast to that study at East Timor Leste found the prevalence among them is as high as 59%.<sup>17</sup> This is probably because of the preventive campaigns to combat smoking with varying rates of success.

The average age of start to smoke among the male medical students of twin cities was found to be between 16-19 yrs among 50% of the students. While the results of a research conducted in Iran are close to ours, which shows starting age of 18-20 yrs among 45.6% of the students<sup>18</sup>. Our results are consistent with a study conducted in Brazil in 2009 where 69.2% of smoker students fall in the same age group<sup>19</sup>. A study of Ziauddin Medical University, Karachi conducted in 2002 has results consistent with our study<sup>20</sup>. This is because of the overflow of information and advertisements from the relentless tobacco industry to catch the potential target customers. Adolescence is a developmental period where behavior is influenced by accelerated changes affecting biological, emotional and social functions.

The prevalence of current smoking among 3<sup>rd</sup> year and 4<sup>th</sup> year medical students was higher in comparison to the 1<sup>st</sup> year medical students. Among smokers most of them 51% wanted to give up their habit and had tried to quit smoking but relapse was seen in 44% of them. As the curriculum year progressed among medical students, the prevalence increases obviously and by final year this ratio decreases. The results of our study are in consistent with that of studies held among different medical universities of China and India<sup>13,21</sup>. In contrast to our results, one study shows the prevalence is more among 1<sup>st</sup> year medical students<sup>22</sup>. This might be due to change in environment and more social interaction. This smoking behavior also reflects their eagerness to discover and experience this thing.

The stress was found to be major triggering factor for smoking(44%), which is comparable to another study done by Xiang H et al in China which shows that the major reasons for first cigarette try-out was stress (42.8%) and curiosity (34.4%)<sup>23</sup>. In contrast to our study, different studies had shown peer pressure as the most important triggering factor for initiation of smoking<sup>13,22,24</sup>. Similarly, Yazici and Özbay found that students started smoking under the influence of their friends that differs from our study which showed only 11% students started smoking under peer pressure<sup>25</sup>. This is because at this particular age adolescents start to make social networks with their peers, hence the smoking behavior of peers has a considerable effect.

The 95% of the students were well aware of the harmful effects of smoking, which is close to the results of a study conducted among medical students in Brazil where 92.3% were aware<sup>19</sup>. The increasing trend of smoking seen among medical students of 3<sup>rd</sup> year and 4<sup>th</sup> year is alarming as they are the future of medical health profession and are more aware of the harmful effects of smoking on human but despite their knowledge of tobacco related diseases does not translate into decrease use. The role of stress and peer pressure was particularly important, and it is also found that family history plays a vital role in remodeling the habits of the smokers. So, efforts need to be done to reduce them to prevent the hazard

of smoking among medical students. According to our study most of the smokers try to quit because of their health related issues but despite their concern for their health most of them relapsed back to smoking whenever there is a little indication of stress in their lives.

Like in all surveys that rely on self-reported data, there is always a possibility of both inadvertent and deliberate misreporting especially due to the fear of administration in current study. We do however believe that any biases which may have been introduced as a result of self-reporting of study participants were likely to be as minimal as could be possible with our moderately accurate data. Probability sampling strategy for the selection of respondents was one another strength of this research. However this study has few limitations also, the prevalence of current tobacco users in our study could be an underestimation considering the fact that data was obtained from 300 respondents. The possibility that current tobacco users could have participated less in this study cannot be ruled out. Some big population based studies including female population student also should be done in future to get more accurate estimation of smoking prevalence among the study population.

## CONCLUSION

High prevalence of smoking was observed among male medical students of Rawalpindi and Islamabad. Stress was found to be the major triggering factor for smoking followed by fun seeking and peer pressure.

## AUTHOR'S CONTRIBUTION

**Sughra U:** Conceived idea, Designed research methodology, Literature review, Data collection, Data analysis, Manuscript writing

**Imran M:** Manuscript writing, Data compilation, Final critical review of manuscript

**Disclaimer:** None.

**Conflict of Interest:** None.

**Source of Funding:** None.

## REFERENCES

1. World Health Organization. Media Centre, tobacco fact sheet no. 339. Updated July, 2013. website: [https://www.who.int/news-room/fact-sheets/detail/tobacco] Accessed on 20<sup>th</sup> Feb 2014
2. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *Br J Cancer*. 2005; 92(3): 426–429
3. Merline AC, O'Malley PM, Schulenberg JE, Bachman JG, Johnston LD. Substance Use Among Adults 35 Years of Age: Prevalence, Adulthood Predictors, and Impact of Adolescent Substance Use. *Am J Public Health*. 2004; 94(1): 96–102
4. Schoenborn CA, Stommel M, Lucas JW. Examining the High Rate of Cigarette Smoking among Adults with a GED.

- Addict Behav. 2018; 77: 275–286.
5. Drumaz A, Ustun B. Determination of smoking habits and personality traits among nursing students. *J of Nursing Educ.* 2006, 45(8):328–333.
  6. Niu L, Liu Y, Luo D, Xiao S. Current Smoking Behavior Among Medical Students in Mainland China: A Systematic Review and Meta-Analysis. *Asia Pac J Public Health.* 2018 Oct; 30(7): 610–623.
  7. Abrams LC, Windsor R, Simons-Morton B. Getting young adults to quit smoking: a formative evaluation of the X-Pack Program. *Nicotine Tob Res.* 2008;10:27-33.
  8. Ejaz SA. Prevalence and pattern of smoking in Pakistan. *J Pak Med Assoc.* 1998; 48: 64 –66.
  9. Pakistan Medical Research Council. Pakistan Health Education Survey (ISBN: 969 – 499 – 003 – 3 [pbk]) Isb, Pakistan: PMRC, 2003. Website: [https://www.pmr.org.pk/] Accessed on July 2014
  10. Khan FM, Husain SJ, Laeeq A, Awais A, Hussain SF, Khan JA. Smoking prevalence, knowledge and attitudes among medical students in Karachi, Pakistan. *East Mediterr Health J* 2005; 11: 952-958.
  11. Freedman KS, Nelson NM, Feldman LL. Smoking initiation among young adults in the United States and Canada, 1998-2010: a systematic review. *Prev Chronic Dis.* 2012; 9:E05.
  12. Ghimire A, Sharma B, Niraula SR, Devkota S, Pradhan PMS. Smoking Habit among Male Medical and Dental Students of B.P. Koirala Institute of Health Sciences, Nepal. *Kathmandu Univ Med J* 2013; 41(1):32-36.
  13. Ganesh Kumar S, Subba SH, Unnikrishnan B, Jain A, Badiger S. Prevalence and Factors Associated with Current Smoking Among Medical Students in Coastal South India *Kathmandu Univ Med J* 2011; 36(4):233-237.
  14. Ranjeeta Kumari, Bhola Nath. Study on the Use of Tobacco among Male Medical Students in Lucknow. *Indian J Comm Med.* 2008; 33 (2): 100-103.
  15. Vinnikov D, Lahdensuo A, Brimkulov N. Medical students of Kyrgyzstan: Smoking prevalence and attitudes to smoking cessation counseling. *Prevention and Control* 2006; 2 (1): 31-37.
  16. Mumtaz B, Chaudhary IA, Arshad M, Samiullah. Comparison of Smoking Behaviour Among Medical and other College Students in Rawalpindi. *J Coll Physicians Surg Pak* 2009; 19:7-10.
  17. Shafquat Rozi1, Saeed Akhtar1, Sajid Ali1 and Javaid Khan. Prevalence and factors associated with current smoking among high school adolescents in Karachi, Pakistan. *Southeast Asian J Trop Med Pub Health* 2005; 36: 498-504.
  18. Siziya S, Muula AS, Rudatsikira E. Prevalence and correlates of current cigarette smoking among adolescents in East Timor- Leste. *Indian Paediatrics* 2008; 45: 963-68.
  19. Nazary AA, Ahmadi F, Vaismoradi M, Kaviani K, Arezomandi M, Faghihzadeh S. Smoking among male medical sciences students in Semnan, Islamic Republic of Iran. *East Mediterr Health J.* 2010; 16(2):156-161
  20. Stramari LM, Kurtz M, da Silva LCC. *Prevalence of and variables related to smoking* among medical students at a university in the city of Passo Fundo, Brazil. *J Bras Pneumol.* 2009;35(5): 442-448
  21. Omair A, Kazmi T, Alam SE. Smoking Prevalence and Awareness about Tobacco related Diseases among Medical Students of Ziauddin Medical University. *J Pak Med Assoc.* 2002; 52 (9):388-389.
  22. Zhu T, Feng B, Wong S, Choi W, Zhu SH. A comparison of smoking behaviors among medical and other college students in China. *Health Promotion International* 2004; 19(2): 189-196.
  23. Nawaz H, Imam SZ, Zubairi AB, Pabaney AH, Sepah YJ, Islam M, Khan JA. Smoking habits and beliefs of future physicians of Pakistan. *Int J Tuberc Lung Dis.* 2007; 11:915-919.
  24. Ramakrishna GS, Sankara Sarma P, Thankappan KR. Tobacco use among medical students in Orissa. *Natl Med J India.* 2005;18(6):285-289.
  25. Naing NN, Ahmad Z, Musa R, Abdul Hamid FR, Ghazali H, Abu Bakar MH. Factors Related to Smoking Habits of Male Adolescents. *Tob Induc Dis.* 2004; 2(3): 133–140.