

Original Research Article

Knowledge, attitude and practice of cigarette smoking among university students in Muzaffarabad, Pakistan: a cross-sectional study

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ABSTRACT

Background: Smoking is the leading cause of morbidity and mortality worldwide. Smoking killed more than 6 million people, about 80% in the developing countries such as Pakistan in 2011. Now it has become major public health issue in the world.

Methods: A descriptive cross-sectional study was conducted among 542 students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan from July to December 2015. The data were collected using a pre-tested, self-administered, validated questionnaire requiring information about socio-demographic characteristics, practice and patterns of cigarette smoking, knowledge about its harmful effects and attitude towards smoking control and prevention measures.

Results: The prevalence of cigarette smoking among students was 49.5%. The mean age for starting cigarette smoking was 19.2±2.73 years. Cigarette smoking constituted 61.3% and shisha constituted 18.4%. The main reason for cigarette smoking was peer pressure (35.0%) followed by family influencing (24.5%). About 79.5% of the smokers had intention to quit smoking. There was no significant difference (p value=0.484) between prevalence of cigarette smoking in different faculties of University of Azad Jammu and Kashmir. The majority of the students (84.3%) knew that smoking is harmful for their health. However, rates of non-smoking students who knew the adverse effects of smoking were significantly higher than that of students who smoke. A high rate of students showed positive attitude towards smoking prevention and control measures.

Conclusions: High prevalence of cigarette smoking was reported among students. There is a need to implement an anti-smoking program among students at University of Azad Jammu and Kashmir.

Keywords: Cigarette smoking, Knowledge, Attitude, Practice, University students, Muzaffarabad

INTRODUCTION

Smoking is the leading cause of preventable deaths and is estimated to kill more than five million people each year worldwide. If current trends persist, smoking will kill more than eight million people worldwide each year by the year 2030, with 80% of these premature deaths in low and middle-income countries. By the end of this century,

tobacco may kill a billion people or more unless urgent action is taken.¹

Smoking harms nearly every organ of the human body and diminishes the general health of the smokers. Smoking causes coronary heart diseases, blood vessel constriction, and the nicotine stimulates adrenal epinephrine secretion, which increases blood pressure and heart rate. In addition, smoking is a leading cause of

respiratory diseases such as emphysema, bronchitis, pneumonia and chronic airway obstruction by damaging the airways and alveoli of the lungs. Tobacco users are at risk for several other types of cancers such as carcinoma of the upper respiratory tract, cervix, throat, larynx, mouth, pancreas, kidney, bladder and acute myeloid leukemia.²

Trends of smoking are now changing in developed and developing countries. Although smoking is static or declining in most of the developed countries such as Western Europe, UK, US, Canada, New Zealand and Australia due to intense public health measures, while it is increasing in the developing countries such as Asia, South America and Africa due to massive promotional activities of cigarette companies.³

There are about 1.1 thousand million people (47% of males and 12% of females) are currently smoking in the world of which nearly 80% of the world's total smokers live in the developing regions.⁴ One such developing country, which has the highest prevalence of cigarette smoking in the South East Asian Region is Pakistan. It is estimated that about 32.4% of the males and 5.7% of the females are currently smoking in Pakistan.⁵ Among young adults especially university students in Pakistan, the prevalence of cigarette smoking is 15%.⁶

Information on cigarette smoking is essential to improve the focus of prevention and control measures and thereby succeed in the struggle against tobacco use. Since, there is scarcity of data regarding knowledge, attitude and practice of cigarette smoking in this particular region from Pakistan. Therefore, this study was conducted with the objective of determining the current status of the knowledge, attitude and practices of cigarette smoking among students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan.

METHODS

Study design and duration

A university-based descriptive cross-sectional study was conducted among male students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan from July to December, 2015.

Study setting and population

This study was conducted among students at University of Azad Jammu and Kashmir, Muzaffarabad that is the leading university of the state of Azad Jammu and Kashmir established more than 30 years ago in the capital Muzaffarabad. It is mainly consisted of three faculties: sciences and engineering, arts and design and health and medical sciences. A list of all the students was procured from the office of academic affairs at University of Azad Jammu and Kashmir, which served as a sampling frame for this study. There was total 3002 number of students in the academic year 2015.

Sampling procedure

By using a stratified sampling technique, a random sample of 542 students was selected from all the three faculties of University of Azad Jammu and Kashmir and appropriate representation from each faculty was ensured.

Data collection

The data were collected using a self-administrated, pretested validated questionnaire in English that was developed based on previous literature review. The questionnaire included information about socio-demographic characteristics, practice and patterns of cigarette smoking, knowledge regarding harmful effects of smoking and attitude towards smoking prevention and control measures.

Inclusion and exclusion criteria

Students who were present at the time of data collection were included and students who were not present at the time of data collection or those students who refused to participate were replaced by the next student in the sampling frame.

Ethical considerations

The study was approved by the ethical and research committee of the University of Azad Jammu and Kashmir. The students were informed about the aims and objectives of the study and both written and verbal consent was taken from the students before administering the questionnaire. Confidentiality of the information was assured.

Pilot study

A pilot study was conducted among 20 male students who met the eligibility criteria to find out the feasibility, easy readability and comprehensibility of the questionnaire a month prior to the data collection. The pilot study was conducted one month prior to the data collection.

Data analysis

The data was entered, cleaned and analysed by using Statistical Programme of Social Sciences (SPSS) version 21. Chi-Square test was used to evaluate the difference regarding knowledge about harmful effects of smoking at the significance level of $p=0.05$.

RESULTS

Characteristics of the students

This study included 542 students, about 321 students were from faculty of sciences and engineering, 165 were from faculty of arts and design and 56 students were from

faculty of health and medical sciences. The age of the students ranged from 17 to 45 years. The mean age of the students was 22 years and standard deviation was 5.06. The majority of the students (53.9%) were distributed among group of 21-25 years. Most of the students (58.1%) were from urban regions and about 41.7% had family income of 31,000-60,000 rupees per month (Table 1).

Table 1: Characteristics of the students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan (n=542).

Characteristics	Frequency (N)	Percentage (%)
Type of faculty		
Sciences and engineering	321	59.2
Arts and design	165	30.5
Health and medical sciences	56	10.3
Age (in years)		
16-20	185	34.1
21-25	292	53.9
26-30	40	7.4
31-35	15	2.8
More than 35	10	1.8
Mean=21.79, SD=5.06		
Locality		
Rural	227	41.9
Urban	315	58.1
Family income (in Rupees)		
Less than 30,000	190	35.1
30,000-60,000	226	41.7
61,000-90,000	86	15.9
More than 90,000	40	7.4

Prevalence and patterns of cigarette smoking

The prevalence of current cigarette smoking among students at University of Azad Jammu and Kashmir in Muzaffarabad was found to be 49.5%. Of the students, 11.6% were former smokers and 38.9% were never smokers. The mean age for starting cigarette smoking was 19.2 ± 2.73 years. The majority of the students (68.0%) started smoking at the age of 16-20 years. Most of the students (32.6%) smoked 6-10 cigarettes per day. Cigarettes (61.3%) were found to be the most common form of tobacco use followed by shisha (18.4%). The favourite places for cigarette smoking were home (59.8%) and university (23.6%). About 79.5% of the smokers want to quit smoking in the near future times. The main motives for cigarette smoking were peer pressure (35.0%), family influencing (24.5%), stress alleviation (19.0%), style and fun (10.0%) and curiosity (7.3%) (Table 2).

Table 2: Prevalence and patterns of cigarette smoking students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan (n=331).

Characteristic	Frequency (N)	Percentage (%)
Smoking status		
Current	268	49.5
Former	63	11.6
Never	211	38.9
Age for starting cigarette smoking (in years)		
10-15	80	24.2
16-20	225	68.0
21-25	24	7.2
More than 26	2	0.6
Frequency of cigarette smoking (in numbers)		
1-5	84	25.4
6-10	108	32.6
11-15	82	24.8
16-20	41	12.4
More than 20	16	4.8
Type of tobacco use		
Cigarettes	203	61.3
Snuff	36	10.9
Shisha	61	18.4
Chewing tobacco	31	9.4
Favourite place for smoking		
Home	198	59.8
University	78	23.6
Friend's home	42	12.7
Social events	8	2.4
Public places	5	1.5
Intension to stop smoking		
Yes	213	79.5
No	55	20.5
Reasons for cigarette smoking		
Family influencing	81	24.5
Peer pressure	116	35.0
Stress	63	19.0
For style and fun	33	10.0
Curiosity	24	7.3
Others	14	4.2

Knowledge regarding harmful effects of smoking

The majority of the students were knowledgeable about harmful effects of smoking. Non-smoker students had higher knowledge than smoker students with a statistically significant difference ($p < 0.05$) regarding knowledge of smoking as a harmful effect on their health, risk factor of cancer, heart diseases, respiratory illness, infertility, mental conditions, addiction, poor quality of life and increased mortality (Table 3).

Attitudes towards cigarette smoking

Regarding the attitude of the students towards smoking prevention and control measures, smoking ban at

university campus (94.7%), increased taxes on cigarettes (96.3%), ban on smoking at public places (91.5%), family restriction on tobacco use (91.0%), prevention of smoking advertisement (87.5%), health warning message

on cigarette packages (86.3%) and health education regarding harmful effects of smoking (82.8%) were suggested for prevention and control of cigarette smoking from the students point of view (Table 4).

Table 3: Knowledge regarding harmful effects of smoking among students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan (n=542).

Knowledge statement	Smokers		Non-smokers		Total		P value
	N	%	N	%	N	%	
Smoking is harmful for your health							
Yes	201	75.0	256	93.4	457	84.3	<0.001
No	67	25.0	18	6.6	85	15.7	
Smoking can cause cancer							
Yes	195	72.8	236	86.1	431	79.5	<0.001
No	73	27.2	38	13.9	111	20.5	
Smoking can cause heart diseases							
Yes	156	58.2	187	68.2	343	63.3	0.02
No	112	41.8	87	31.8	199	36.7	
Smoking can cause respiratory illness							
Yes	116	43.3	159	58.0	275	50.7	0.001
No	152	56.7	115	42.0	267	49.3	
Smoking can cause infertility							
Yes	205	76.5	162	59.140.	36717	67.7	<0.001
No	63	23.5	112	9	5	32.3	
Smoking can cause mental illnesses							
Yes	184	68.7	144	56.6	328	60.5	<0.001
No	84	31.3	130	47.4	214	39.5	
Smoking can cause nicotine addiction							
Yes	199	74.3	231	84.3	430	79.3	0.004
No	69	25.7	43	15.7	112	20.7	
Smoking can cause poor quality of life							
Yes	109	40.7	167	60.9	276	50.9	<0.001
No	159	59.3	107	39.1	266	49.1	
Cigarette smoke contains more than 4000 chemicals							
Yes	142	53.0	181	66.1	323	59.6	0.001
No	126	47.0	93	33.9	219	40.4	
Smoking is responsible for increased mortality							
Yes	139	51.9	169	61.7	308	56.8	0.02
No	129	48.1	105	38.3	234	43.2	

Table 4: Attitude of the students towards cigarette smoking at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan (n=542).

Attitude statement	Agree		Disagree	
	N	%	N	%
Smoking should be banned at the educational institutions	513	94.7	29	5.3
Tobacco sales to adolescent and children should be banned	522	96.3	20	3.7
Taxes on cigarettes and other tobacco products should be increased	494	91.1	48	8.9
The advertisement and promotion of cigarettes should be banned	474	87.5	68	12.5
Cigarette smoking in all enclosed public places should be banned	496	91.5	46	8.5
Parents should prohibit smoking practices to their children	493	91.0	49	9.0
Health warnings should be printed on the cigarette packs	468	86.3	74	13.7
Health education increases the chances quitting smoking	449	82.8	93	17.2

Factors associated with cigarette smoking

There was no significant difference ($p=0.484$) in prevalence of cigarette smoking among students of different faculties. However, the prevalence of cigarette smoking was reported highest (52.4%) among students from faculty of arts and design compared to students

from other faculties. The prevalence of cigarette smoking significantly decreased ($p=0.003$) as the age of students increased. Students who were in the age group of 16-20 years (48.7%) had higher prevalence of cigarette smoking than students who were in age group of >35 years (20%). The difference between other characteristics of smokers and non-smokers are shown in Table 5.

Table 5: Comparison of smoking status by characteristics of the students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan (n=542).

Characteristic	Smokers		Non-smokers		X ²	P-value
	N	%	N	%		
Type of faculty						
Sciences and engineering	158	49.2	163	50.8	1.451	0.484
Arts and design	86	52.1	79	47.9		
Health and medical sciences	24	42.9	32	57.1		
Age (in years)						
16-20	90	48.7	95	51.3	16.022	0.003
21-25	160	54.8	132	45.2		
26-30	12	30.0	28	70.0		
31-35	4	26.7	11	73.3		
More than 35	2	20.0	8	80.0		
Locality						
Rural	119	52.4	108	47.6	1.384	0.239
Urban	149	47.3	166	52.7		
Family income (in Rupees)						
Less than 30,000	92	48.4	98	51.6	0.380	0.944
30,000-60,000	115	50.9	111	49.1		
61,000-90,000	41	47.7	45	52.3		
More than 90,000	20	50.0	20	50.0		

DISCUSSION

The main objectives of this study was to determine the prevalence of cigarette smoking among students at University of Azad Jammu and Kashmir in Muzaffarabad as well as their knowledge and attitude about cigarette smoking. The study was carried out with the expectation that the information from this study can be used to conduct smoking prevention and control measures among students at University of Azad Jammu and Kashmir in Muzaffarabad, Pakistan.

The prevalence of current cigarette smoking among students in this study was found 49.5%, while in general population, the national health survey of Pakistan reported a prevalence of male tobacco smoking of about 54%.⁷ It was found that the prevalence of smoking among male medical students in Rawalpindi, Pakistan was 57.7%.⁸ Another study reported that the prevalence of cigarette smoking among male medical students at King Edward Medical University, Lahore, Pakistan was 60.55%.⁹

In India, the prevalence of smoking among male college students was 26.7%.¹⁰ A study conducted among university students in Iran revealed that the prevalence of

smoking was 31.1%.¹¹ The percentage of current smokers among university students in Bangladesh was 60.2%.¹² In China, the prevalence of current smoking among male undergraduate's students was 91.8%.¹³

The prevalence of current smoking among college students in USA was 42%.¹⁴ Similarly, a study from Europe reported that the prevalence of current smoking among university students was 42.7%.¹⁵ In Saudi Arabia (Najran University), the prevalence of smoking among male college students was found 30.1%.¹⁶

The difference in prevalence of smoking in this study and other studies may be due to different age groups studied, different research methodologies adopted and the use of different criteria for defining cigarette smoking

There was no significant difference ($p=0.484$) between prevalence of cigarette smoking among students of different faculties in this study. This finding was consistent with a study conducted in Malaysia.¹⁷ On the other hand, prevalence of cigarette smoking significantly decreased ($p=0.003$) as the age of students increased. This finding was in an agreement with a study conducted in Turkey.¹⁸ This could be better explained by the fact that old age students are more receptive to medical advice

and public health messages and they are more likely to quit cigarette smoking as compared to young age students.

The mean age for starting cigarette smoking in this study was 19.2 ± 2.73 years. The majority of the students (67.47%) started cigarette smoking before the age of 20 years. This finding was consistent with a study conducted in Iran reporting that the average age for initiating cigarette was 19 years.¹⁹ This implies early identification of the smokers so that tobacco control measures could be implemented in this age group.

The main motives for cigarette smoking in this study were peer pressure (35.0%) followed by family influencing (24.5%). Similarly, in a study conducted in Pakistan obtained same associated factors like curiosity (27.27%), family influencing (16.66%) and peer pressure (18.18%) as associated with increased prevalence of cigarette smoking.²⁰ These personal and environmental characteristics are major contributors of cigarette smoking which need an important attention to regulate smoking free environment, and to reduce the prevalence of cigarette smoking among students.

About 79.5% of the smoker students had a desire to quit cigarette smoking in this study. Similarly, studies from Saudi Arabia and India also reported higher percentage of the students (74.6% and 74.4% respectively) who want to cease cigarette smoking.^{21,22} This indicates that the majority of the smokers may respond well to the cigarette smoking prevention and control programmes if these are established in university.

In this study, the majority of the students, irrespective of their cigarette smoking behaviour, had high knowledge about harmful effects of smoking such as cancer, respiratory illness, heart diseases, addiction, mental conditions, infertility, diminished health status and increased mortality. Although, smoker students had lower knowledge than non-smoker students. Similar findings were also reported among university students from Iran and Jordan.^{23,24} The majority of the students (94.1%) in this study, knew that smoking is harmful for their health and 89.1% of them knew that it causes cardiovascular diseases. This finding is an agreement with a study conducted in Palestine which found that 88.7% of the students knew that smoking is harmful for health.²⁴

CONCLUSION

In conclusion, this study found a considerable high prevalence (49.5%) of cigarette smoking among male students at University of Azad Jammu and Kashmir, Muzaffarabad, Pakistan. One of the major and significant findings of this study was the positive attitudes of the students towards smoking control and prevention measures. About 79.5% of the students had intention to quit cigarette smoking. This indicates that the majority of the smoker students may respond well to the cigarette

smoking prevention and control programmes if these are established in the university. It would be very helpful to organize smoking campaign in the different faculties at the university to increase the knowledge about the harmful affects of smoking.

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