Prevalence and characteristics of tobacco smoking among young females students in Pakistan

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Abstract:

BACKGROUND: The rising trend of smoking among females around world is alarming. The aim was to evaluate the prevalence and also trend of smoking among female university students in Pakistan.

FINDINGS: A cross sectional survey was conducted in 4 cities of Pakistan. A total of 689 students from 18 universities filled self administered questionnaire. Data analysis was done on SPSS 22.Total prevalence of smoking was 7.4%. Among them 49%, 13.7% and 37% use shisha, Cigarette and both respectively for smoking. Mean age of initiation of smoking was 16.65 years SD 2.46.Students who consider smoking necessary for Social gathering are 5 times more prone to smoke. Strong relationship with advertisement on Social media with smoking was found (p<0.05). Students from Fashion, Business administration, Media Sciences and engineering are more frequently

indulge in smoking when compared to medical sciences (p<0.05). 29.6% and <1% of shisha and cigarette smokers respectively were comfortable doing smoking in front of their parents. In females who were engaged in both kinds of smoking 52.3% reported use of Shisha before cigarette.19% of non-smoker female frequently visit shisha bar with family and friends.

CONCLUSION: Although overall low prevalence of smoking has noted to be low but risk of Shisha emergence cannot be ignored.

KEY WORDS:

Shisha smoker, Shisha Bar, Social Media.

BACK GROUND:

World Health Organization, in 2008, declared tobacco as the largest preventable cause of death Worldwide [1]. It is estimated that tobacco kills more than five million people in a year time that is more than tuberculosis, HIV/AIDS and malaria combined. Statistics suggest that by 2030, the death toll will exceed eight million a year. The same report states that the tobacco had caused around 100 million deaths in the 20th century [1].

Clearly, the demographics of smokers have changed dramatically since the final years of 20th century in three essential aspects; emergence of new kinds of tobacco smoking, social acceptance for female smoking and extensive research on hazards of cigarette.

Tobacco is a known risk factor for 6 out of 8 major life threatening diseases including ischemic heart diseases, cerebro-vascular diseases, chronic obstructive pulmonary disease, and lung cancer [1,2,3,4] .The spectrum of diseases caused by smoking has expanded in females and additionally can lead to breast cancer,

cervical cancer [4], infertility, obstetrical problems[5] and on the same time is associated with increased rates of adolescent smoking.[6]

The rising trend of smoking among females is a major health concern. Mothers are considered as a role model for their children. Kids watching mother's smoking and having parental approval has high prevalence of all kind of smoking. Despite of the matter being of pivotal importance, the data addressing on pattern of smoking among females from Pakistan is scarce. The purpose of this survey was to gather the current prevalence and methods of smoking among female university students in Pakistan.

METHODS:

Study Design and participants:

A cross-sectional survey was conducted in 4 metropolitan cities of Pakistan namely Karachi, Hyderabad, Multan and Lahore. Female students from 18 different universities took part in this survey. The universities of different disciplines were incorporated including medical, engineering and business sciences. These universities had co-education system and belonged to both public and private sector. The students belonged to different socio-economic class. It was assumed that this mix sample will represented a realistic and generalized

data of female university students across Pakistan. The rationale for surveying female students only was to compare data from Pakistan to rest of the World. Self-completed questionnaires were used as a data collection tool in this survey. The questionnaire consisted of 3 different sections. The introductory section was related to the student's profile including name of city, university, discipline of study and age. The second section consisted of questions related to smoking habits like age of initiation and frequency. Next section assesses the factors influencing their smoking habits. Most of the questions demanded the participant to answer in a simple YES or No.

The sample collection was done by convenient sampling. The students were approached in university campus, mostly outside their classes, in cafeterias, grounds and student lounges, during their free time. In one to one meeting students were explained the aim of study and were assured that individual responses shall not be shared on any forum or with the university authorities to maintain the confidentiality. Questionnaires were filled after informed verbal consent. During this period, when students were filling the form, the invigilator was present all times to insure the full understanding of the questionnaire to the participating students. The attitude of the invigilator and the nature of questionnaire were impersonal, encouraging and objective. Questionnaire was

manually checked for completeness. Questionnaire filled incompletely was excluded from the final data analysis

Study Ethics:

Ethical approval was taken from ethical committee of Jinnah Post Graduate Medical Center, an independent and renowned body mostly involved in education and research projects.

Statistical Analysis:

Data was analyzed by using SPSS 22. Mean ± standard deviation was used for continuous variables in the descriptive analysis. Binary logistic regression, with confidence interval (CI) of 95%, was used to determine the factors associated with prevalence of smoking. P value less than 0.05 was considered significant.

RESULTS:

A total of 689 students from 18 universities filled self administered questionnaire. Mean age of participants were 20.17 years. Overall smoking prevalence was found to be 7.4%. Among smokers, use of shisha smoking in combination or as a single method was 86.3%. Mean age of initiation of smoking reported by students

was 16.6 years. No difference in age of initiation was observed between shisha and cigarette smokers.

Table 1: Socio-demographic characteristics of study population.

Average numbers of cigarettes consumed by students were 9.4 +/- 7.9 per day and average numbers of visits to shisha bar by shisha smokers were 2.32+/- 2.08 per week. In females, engaged in both kinds of smoking, 52.3% reported use of Shisha before cigarette. When asked regarding comfort level while smoking in front of parents and elder siblings 29.6% and <1% of shisha and cigarette smokers respectively reported smoking with and in front of parents and elder siblings. Another important finding was that among non smokers group 19% of female students reported frequent visits to shisha bar with family and friends.

A significant difference was found in prevalence of smoking among cities (p<0.001). No student from Multan reported to indulge in smoking habit while major proportion of smokers belongs to Karachi and Lahore.

Table 2: Factors associated with smoking among female students across Pakistan.

The binary logistic regression model proved few factors positively related with smoking prevalence. More worthy to mention are the Students who considered

smoking necessary for social gathering. These students were 5 times more likely to smoke (OR 5.03, p 0.02) as compared to students who don't consider smoking necessary for social gathering. Students who felt that smoking can help in relaxation of nerves are more prone to smoke (OR 1.72 p 0.03). For data analysis purpose we merge fashion, median sciences and business administration subjects under heading of social sciences. It is interesting to note that students belonging to social sciences and engineering are 3 times more likely to smoke when compared to medicine discipline.

Students who never come across materials against smoking on social media are twice on risk of participating in smoking practice than students who read these articles (OR 2.22, p0.007). The different type of social media including you tube,

DISCUSSION:

Wide variation in smoking prevalence, for both male and female were found among different regions of World [7]. Recent studies show a decline in smoking trend among European men, while an increase has noted among the European females particularly in teenage girls[8, 9]. The prevalence of male and female smoker is 60.2% and 6.9% respectively in China [10]. In the developing world the trend of smoking is much lower in the female population [7,11] but it has

alarming potential to increase abruptly. Prevalence of smoking among females [12] and age of initiation of smoking[13] in present study is comparable to previous data from Pakistan

Shisha has already proven as a serious threat to the society [6, 14, and 15]. Results from our data also support this fact and shows the rising trend of shisha smoking in the female population. High prevalence of shisha smoking, among smokers, in combination or as a single method and comfort level of female smokers for smoking Shisha in front of their families depicts its wide acceptability within the society. Likewise Egyptians [16] and Lebanon[15, 17] smokers preferred shisha smoking over cigarette smoking .

The present study further showed that group of smokers who indulge in both, shisha and cigarette smoking, more than half of them start shisha smoking first and then lean to cigarette smoking. It is worth to mention that 19% of non-smokers regularly visited shisha bar with family and friends, rendering them more susceptible to indoor pollution containing high levels of carbon monoxide levels present in shisha bars [18] .This second hand smoke exposure is of grave concern to this vulnerable population, because of reported relationship between passive smoking and numerous health related disorders[19, 20]

Previously numerous factors and their causal relationship with smoking had been identified, few to mention are false perception for water pipe smoking, curiosity, pleasure seeking , peer pressure, stress.[21] and depression [22] . In this present study, factors emerged as statistically significant are Social gathering, relaxation of nerves by smoking, non medical universities and exposure to anti-tobacco advertisement on social media.

Interestingly students belonging to social sciences and engineering were 3 times more likely to smoke when compared to students from medical universities. We want to highlight this fact because this difference between medical and non medical students is very important if we consider reported data from local[c] and international [23] Universities revealing satisfactory knowledge of medical students regarding tobacco related hazards but still considerable prevalence of smoking. It can be postulated that non medical students are more involved in smoking habits.

Adapting new and widespread anti-tobacco advertisement on social media can be effective as well as economic strategy to strengthen tobacco control policies. This present study has confirmed that presence of anti-tobacco advertisements on social media has definitive effect on smoking behavior of youngster, specifically in

today's era where social media including Face book, LinkedIn is a pervasive mass medium for communication [24]. This finding is also supported by a study conducted by University of Waterloo. Success rate for quitting smoking in this project was almost double in young adults who used social media when compared to those who used the traditional methods [25] .There is a paucity of literature and studies on this important area.

Although confidentiality was assured to the participants during the survey but there is a high possibility of underreporting because of cultural reason [7] and disapproval from society for cigarette smoking among females in this part of World. The main Limitation of present study was convenient sampling method, while the strength of study was generalizability of Data from 4 different cities and inclusion of universities of different disciplines.

CONCLUSION:

This study is amongst the first in Pakistan to explore prevalence and factors associated with smoking among females. The prevalence is low but acceptance of shisha on family level and female indulging in shisha smoking are alarming enough to raise concern.

COMPETING INTERESTS:

All authors declare that they have no competing interests.

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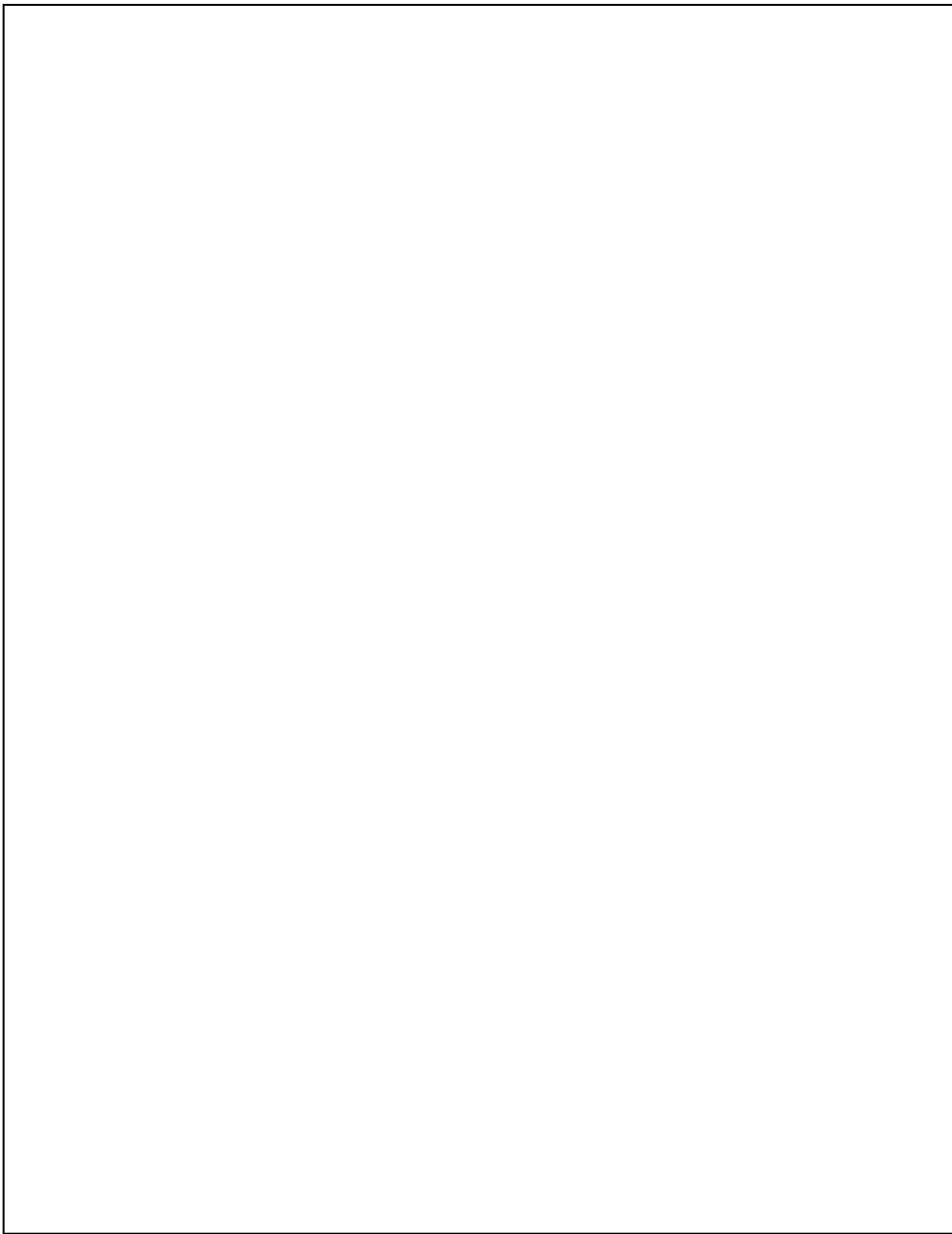
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TABLES:

Characteristics	Group	Total No	%
Age of Participant(Years (Mean ± SD)	20.17 ± 4.22		
Age of initiation of Smoking Shisha	16.54 ± 2.49		
Age of initiation of Smoking Cigarette	16.12 ± 2.68		
Type of Smoking			
	Shisha	25	49.01
	Cigarette	7	13.72
	Both	19	37.25
Discipline			
	Medical	407	59.1
	Engineering	67	9.7
	Social Sciences	215	31.2
City			
	Karachi	429	62.3
	Lahore	146	21.2
	Hyderabad	66	9.6
	Multan	48	7
Total		689	100

Table 1: Socio-demographic characteristics of study population.

Characteristics	Odd Ratio	Sig value	95% C.I for Odd Ratio	
Have you come across any article from social media regarding hazards of smoking				
No	2.229	0.007	1.245	3.990
Yes	1.000			
Discipline				
Social Sciences	3.156	0.000	1.672	5.958
Engineering	3.111	0.012	1.285	7.528
Medical	1.000			
Friends Also Smoking	1.283	0.322	0.784	2.100
Necessary for social gathering	5.039	0.028	1.186	21.409
It is status symbol	1.751	0.149	0.818	3.749
Its relax your nerves	1.724	.036	1.038	2.866

Table 2: Factors associated with smoking among female students across Pakistan.

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