

## Determinants of Smoking Among Adolescents (14 -19 Years) in UC Maingri District Narowal

<sup>1</sup>HUMAIRA ZAREEN, <sup>2</sup>SAADIA SHAHZAD, <sup>3</sup>SHAFIQUE JAVAID

*Assist. Prof, MCH Dept, IPH Lahore, Assist. Prof, Community Medicine Dept, Shalamar Medical and Dental College Lahore, SMO RHC Shakkargarrah.*

*Correspondence Author: Dr. SaadiaShahzad, Assist. Prof Community Medicine Dept, Shalamar Medical and Dental College, Lahore Contact No: 03214767918. Email: saadiazahur@live.com*

### ABSTRACT

**Background:** Smoking is an important public health problem of the present time. It is responsible for high disease burden and mortality among all age groups. Adolescents are rapidly growing and developing young children into adults and get easily indulge into smoking. Many factors contribute to start smoking in adolescent period.

**Aims & Objectives:** To find out the prevalence of smoking among adolescents aged 14-19 years; to identify the factors responsible for smoking; and to find out association between smoking and various factors among adolescents.

**Methodology: Study Design:** Cross-sectional survey.

**Study Setting:** Union Council Maingri, Tehsil Shakargarh, District Narowal.

**Study Duration:-** One month.

**Study Population:** All the adolescents living in the union council Maingri.

**Sample Size:** 300 adolescents aged 14-19 years were selected as study participant by simple random method.

**Results:** Three-hundred adolescents were selected as study participants. Their mean age and SD was  $16.63 \pm 1.80$  years. 27.0% adolescents were smokers. Among 22 adolescents who were not attending school, 21 (95.5%) were smokers. Among 72 adolescents who were working, 58 (80.6%) were smokers. Among 135 adolescents whose fathers were smokers, 67 (49.6%) were smokers. Among 37 adolescents whose brothers were smokers, 28 (75.7%) were smokers. Among 62 adolescents whose friends were smokers, 59 (95.2%) were also smokers. Results showed significant association between adolescents smoking behavior and their schooling, working outside homes, parental and family smoking, smoking of friends and number of friends.

**Conclusion:** Smoking of family members and friends had great influence on adolescents. Parents and teachers should play their significant roles in preventing adolescents from smoking through health education.

**Keywords:** Smoking, adolescent, cigarette, prevalence, risk factors.

### INTRODUCTION

Smoking is the process of inhaling and exhaling tobacco in a cigarette, cigar, pipe or hookah<sup>[1]</sup>. Cigarette smoking is the commonest form and practiced world wide. Smoking trend is now increasing in poor and developing countries.<sup>[1,2]</sup> Smoking is an important public health issue and responsible for high burden of diseases and mortality among all age groups. Tobacco use in the form of cigarette smoking results in early mortality and disability.<sup>[3]</sup>

Adolescence is derived from a Greek word *Adolesceremans* to grow or mature. The World Health Organization (WHO) has defined adolescents as persons between 10 to 19 years of age.<sup>[3]</sup> This period is characterized by rapid

physical growth. Adolescents grow physically, mentally, emotionally, psychologically and socially. During this transitional phase they are at risk of developing habits and behaviors which are dangerous to health. Risk taking behaviors, like smoking, drug abuse, alcohol consumption and unsafe sex endanger their life.<sup>[4,5,6]</sup>

Tobacco consumption is a worldwide problem. This resulted in six million deaths in 2011 and expected to be 8 million in 2030. A study by WHO reported that approximately 18% adolescents smoke cigarettes at least once a week.<sup>[6]</sup> Globally, about one in five adolescents smoke.<sup>[7]</sup>

In Pakistan, a study done in Jinnah University Karachi showed 36% males and 9% females

smoke.<sup>[9]</sup> Approximately 1,200 children start smoking everyday.<sup>[10]</sup> In an other study smoking among school adolescents in Karachi was 13.7%.<sup>[11]</sup>

Tobacco use started in early adolescence results in poor school performance, high rates of school absenteeism, class failures and dropout from school.<sup>[12,13]</sup>

Factors which are responsible for initiation and continuation of smoking among adolescents are, smoking among family members like fathers, mothers, brothers and uncles, friends and colleagues.<sup>[14]</sup> Adolescents are also motivated by role models like teachers, actors, politicians and celebrities. Media advertisement, movies, easy availability of cigarettes, low prices and access to money also contribute to smoking. Depression, stress, family problems, anxiety, relaxation act as a gate way to smoking.<sup>[14,15]</sup> Adolescents constitute more than 22% of total population in developing countries and researchers are interested to find out prevalence of tobacco use among adolescents.<sup>[16,17,18]</sup>

Studies show that environment play important role in smoking, adolescents who live in an area where there is no smoking they restrain from smoking.<sup>[19,20,21]</sup> It is also observed that adults who smoke many started smoking during adolescents period.<sup>[22,23]</sup>

Being poor as well as developing country Pakistan can not afford this increasing trend of smoking among adolescents.<sup>[24]</sup> Many studies have been done in Pakistan among school and college adolescents but very few community based studies have been conducted adolescents. Therefore, it is pertinent to conduct a community based study to obtain information regarding burden and determinants of smoking. Present study aims to assess factor associated with smoking among adolescent (14-19 years) in Union Council Maingri, Tehsil Shakargarh, District Narowal.

## MATERIAL AND METHODS

**Hypothesis: not required**

**Study Design:** Cross-sectional survey.

**Place & Duration of Study:** Study conducted in union council Maingri, Tehsil Shakargarh, District Narowal for a period of one month.

**Study Population:** Adolescents aged 14-19 years residing in the study area.

**Sample Size and Sampling Technique:** 300 adolescents aged 14-19 years were selected for this study using simple random method.

**Data collection Procedure:** Structured questionnaire was used to collect data, which was pretested and then finalized. There are 20 LHWs in union council Maingri. List of adolescents was obtained from each LHW and sample was selected by Simple random method. Data was collected in local language and then translated. Each interview took 20-30 minutes.

**Data Analysis:** Data was entered in to computer using SPSS 19.0. Frequencies and percentages were calculated and test of significance applied to see association of different factors.

**Ethical Issues:** Confidentiality of the data was ensured and proper consent was obtained before data collection.

## RESULTS

Result shows the mean age with SD of the adolescents was 16.63±1.80 (Table-1).

Among 300 adolescents, 81 (27.0%) were smokers while 219 (73.0%) were non-smokers (Table-2).

Out of 81 smokers, the smoking duration of 32 (39.5%) adolescents was 1 year and 28 (34.6%) were smoking since 2 years while 21 (25.9%) adolescents were smoking for more than 2 years (Table-3).

Table-4 describes that among 241 adolescents whose mothers were literate, 64 (26.6%) were smokers and 177 (73.4%) were non-smokers. Likewise among 59 adolescents whose mothers were illiterate, 17 (28.8%) were smokers and 42 (71.2%) were non-smokers. The result was found statistically insignificant (P value = 0.72). Among 139 adolescents whose fathers were literate, 34 (24.5%) were smokers and 105 (75.5%) were non-smokers. Similarly among 161 adolescents whose fathers were illiterate, 47 (29.2%) were smokers and 114 (70.8%) were non-smokers. The result was found statistically insignificant (P value = 0.35). Family monthly income was found statistically insignificant with adolescents smoking (P value = 0.45).

Table-5 identifies that among 22 adolescents who were not attending school, 21 (95.5%) were smokers and 1 (4.5%) was non-smoker. Likewise among 278 adolescents who were attending school, 60 (21.6%) were smokers and 218 (78.4%) were non-smokers. The result was found statistically significant (P value = 0.01). Among 72 adolescents who were working, 58 (80.6%) were smokers and 14 (19.4%) were non-smokers. Similarly among 228 adolescents who were not

working, 23(10.1%) were smokers and 205(89.9%) were non-smokers. The result was found statistically significant (P value = 0.01).

Table-6 exhibits that among 145 adolescents whose grandfathers were smokers, 70 (48.3%) adolescents were also smokers and 75 (51.7%) were non-smokers. Likewise among 155 adolescents whose grandfathers were non-smokers, 11 (7.1%) adolescents were smokers and 144 (92.9%) were non-smokers. The result was found statistically significant (P value = 0.01). Among 135 adolescents whose fathers were smokers, 67 (49.6%) adolescents were also smokers and 68 (50.4%) were non-smokers. Similarly among 165 adolescents whose fathers were non-smokers, 14(8.5%) adolescents were smokers and 151 (91.5%) were non-smokers. The result was found statistically significant (P value = 0.00). Out of 18 adolescents whose mothers were smokers, 9 (50.0%) adolescents were also smokers and 9 (50.0%) were non-smokers. Likewise among 282 adolescents whose mothers were non-smokers, 72 (25.5%) adolescents were smokers and 210 (74.5%) were non-smokers. The result was found statistically significant (P value = 0.02). Among 37 adolescents whose brothers were smokers, 28 (75.7%) adolescents were also smokers and 9 (24.3%) were non-smokers. Similarly among 263 adolescents whose brothers were non-smokers, 53 (20.2%) adolescents were smokers and 210 (79.8%) were non-smokers. The result was found statistically significant (P value = 0.02).

Table-7 asserts that among 291 adolescents who had ≤5 friends, 76 (26.1%) were smokers and 215 (73.9%) were non-smokers. Likewise among 9 adolescents who had >5 friends, 5 (55.6%) were smokers and 4 (44.4%) were non-smokers. The result was found statistically significant (P value = 0.05). Among 62 adolescents whose friends were smokers, 59 (95.2%) adolescents were also smokers and 3 (4.8%) were non-smokers. Similarly among 238 adolescents whose friends were non-smokers, 22 (9.2%) adolescents were smokers and 216 (90.8%) were non-smokers. The result was found statistically significant (P value = 0.00).

**Table-1:** Age group of adolescents

Age	Frequency	Percentage
14-16 years	152	50.6%
17-19 years	148	49.4%
Total	300	100.0%
Mean age	16.63 years	SD+-1.80

**Table-2:** Smoking practices

Practices	Frequency	Percentage
Yes	81	27.0%
No	219	73.0%
Total	300	100.0%

**Table-3:** Duration of smoking

Duration of smoking	Frequency	Percentage
1 year	32	39.5%
2 years	28	34.6%
>2 years	21	25.9%
Total	81	100.0%

**Table-4:** Association between socio-demographic determinants of parents and smoking among adolescents

	Smoking		Total
	Yes	No	
<b>Mother education</b>			
literate	64 (26.6%)	177 (73.4%)	241 (100.0%)
Illiterate	17 (28.8%)	42 (71.2%)	59 (100.0%)
Chi-square = 18.78, df = 1, P value = 0.72			
<b>Father education</b>			
Literate	34 (24.5%)	105 (75.5%)	139 (100.0%)
Illiterate	47 (29.2%)	114 (70.8%)	161 (100.0%)
Chi-square = 9.04, df = 1, P value = 0.35			
<b>Family income (Rs.)</b>			
<10,000	25 (30.1%)	58 (69.9%)	83 (100.0%)
>10,000	56 (25.8%)	161 (74.2%)	217 (100.0%)
Chi-square = 1.93, df = 1, P value = 0.45			

**Table-5:** Association between socio-demographic determinants of adolescents and smoking among adolescents

	Smoking		Total
	Yes	No	
<b>Educational status</b>			
No schooling	21 (95.5%)	1 (4.5%)	22 (100.0%)
School going	60 (21.6%)	218 (78.4%)	278 (100.0%)
Chi-square= 64.26, df = 1, P value = 0.01			
<b>Working</b>			
Yes	58 (80.6%)	14 (19.4%)	72 (100.0%)
No	23 (10.1%)	205 (89.9%)	228 (100.0%)
Chi-square = 1.65, df = 1, P value = 0.01			

**Table-6:** Association between family history of smoking and smoking among adolescents

	Smoking		Total
	Yes	No	
<b>Grandfather</b>			
Yes	70 (48.3%)	75 (51.7%)	145 (100.0%)
No	11 (7.1%)	144 (92.9%)	155 (100.0%)
Chi-square= 64.45, df = 1, P value = 0.01			
<b>Father</b>			
Yes	67 (49.6%)	68 (50.4%)	135 (100.0%)
No	14 (8.5%)	151 (91.5%)	165 (100.0%)
Chi-square= 63.77, df = 1, P value = 0.00			
<b>Mother</b>			
Yes	9 (50.0%)	9 (50.0%)	18 (100.0%)
No	72 (25.5%)	210 (74.5%)	282 (100.0%)
Chi-square= 5.13, df = 1, P value = 0.02			
<b>Brother</b>			
Yes	28 (75.7%)	9 (24.3%)	37 (100.0%)
No	53 (20.2%)	210 (79.8%)	263 (100.0%)
Chi-square= 50.73, df = 1, P value = 0.02			

**Table-7:** Association between history of smoking in social circle and smoking among adolescents

	Smoking		Total
	Yes	No	
<b>Number of friends</b>			
≤5	76 (26.1%)	215 (73.9%)	291 (100.0%)
>5	5 (55.6%)	4 (44.4%)	9 (100.0%)
Chi-square= 3.83, df = 1, P value = 0.05			
<b>Friends smoke</b>			
Yes	59 (95.2%)	3 (4.8%)	62 (100.0%)
No	22 (9.2%)	216 (90.8%)	238 (100.0%)
Chi-square= 1.84, df = 1, P value = 0.00			

## DISCUSSION

Smoking is done in all the parts of the world. <sup>(6)</sup>It is responsible for adding lifetime burden of chronic diseases not for the individuals and families but for the nation as well. Many of the present adult smokers started it when they were in their teens. Parental smoking has an important role not only in initiation but continuation of smoking as well. Present study was carried out to assess determinants of smoking among adolescent (14-19

years) in Union Council Maingri, Tehsil Shakargarh, District Narowal. Mean age of adolescents was 16.36 years. Present study shows an association between the age and smoking. Tendency to smoke increase as the age increases and this is shown by many studies <sup>26,27</sup>. This may be due to increase in adolescent's sphere of friendship and outdoor activities.

Parents should be more vigilant about their children and should keep them under observation to prevent from smoking. Study identified that 27.0% adolescent were smoker. A study done by Sharma and associates (2010) exhibited better results that smoking was prevalent among only 7.1% adolescents. <sup>[27]</sup> While another study carried out by Reda et al (2012) confirmed that 12.2% adolescents were smokers. <sup>[24]</sup>

Role of parents' education, family type and income was not significant associated with adolescent smoking but significant association was observed in schooling and working of adolescent with smoking. The smoking was more prevalent among working adolescent and those who were not attending school. <sup>[4,15]</sup>

There is no doubt that smoking is injurious for health, hence efforts are made globally to reduce the trend of cigarettes smoking while still majority has addiction of smoking and this addiction is adopted from grandparents and parents which is leading cause of motivation among young generation. It is important to mention that adolescents who were smokers, virtually half of their grandfathers and fathers were also smokers. The results of the study performed by Sami and coworkers (2013) confirmed that 39.9% adolescents fathers were smokers. <sup>[2]</sup> Study further highlighted that 50.0% adolescent smokers mothers were also smokers. The findings of the study carried out by Morrison (2011) showed that 6.0% mothers of adolescents were smokers. <sup>[26]</sup> Role of brothers cannot be overlooked in motivating towards smoking because one brother is inspired from other. Study revealed that among adolescent smokers, 75.7% of their brothers were smokers. The results of the study carried out by Siziya and coworkers (2007) confirmed that 18.6% brothers of adolescents were also smokers. <sup>[28]</sup>

Peer pressure is one of the leading factors that lead to initiate smoking. Study indicated that 95.2% friends of adolescent's smokers were smokers. A study done by Siziya and coworkers (2007) elucidated that 22.7% friends of adolescents were cigarettes smokers. <sup>[28]</sup>

Aggressive marketing strategies by tobacco companies have also been considered behind the rise in smoking prevalence in developing countries; however, since the restrictions on smoking advertisements in Pakistan, it is interesting to see the influence of the media on smoking.<sup>[20]</sup>

## CONCLUSION

Prevalence of smoking among adolescents was 27.0% which is quite higher than other studies done in the local context. Family, friends and financial support are associated with adolescent smoking. Media, NGOs and health department intervention could be helpful to protect adolescent from smoking. Family and friend's education level plays an important role in modulating the behavior of adolescents. Concrete steps should be taken to create awareness about injurious effects of smoking on health. Mass media and health education are an important tools that can play pivotal role in changing behavior of adolescents towards smoking.

## REFERENCES

1. Shah N, Siddiqui S. An overview of smoking practices in Pakistan. *Pak J Med Sci* 2015; 31(2): 467-70.
2. Sami N, Noorani SS, Lakhani LS, Ghouse A, Valliani S. Smoking practices and nicotine dependence among adolescents in Pakistan. *J Pak Med Assoc.* 2013; 63(10): 1260.
3. WHO, World Health Organization. Adolescent friendly health services: an agenda for change. Geneva: WHO; 2002.
4. World Health Organization. What about boys: a literature review on the health and development of adolescent boys. Geneva: WHO; 2002.
5. Eriksen M, Mackay J, Ross H. The tobacco atlas, 4th edition. Atlanta, Georgia: American Cancer Society, Inc.; 2012.
6. Currie C, Zanotti C, Morgan A, Currie D, de Looze M, Roberts C, et al. Social determinants of health and well-being among young people. Copenhagen: World Health Organization Regional Office for Europe; 2012.
7. Gadalla YM, Abo-mali A, Mustafa BM, Abdo H. Prevalence of smoking among school adolescents in Khartoum State. *Sudan J Paediatr* 2012; 12(2): 44-8.
8. Zaman M, Irfan U, Irshad E. Prevalence of cigarette smoking among Peshawar University students. *Pak J Chest Med* 2002; 8: 9-18.
9. Shaikh MA, Kamal A. Prevalence and pattern of smoking in university students - perspective from Islamabad. *J Coll Physicians Surg Pak* 2004; 14: 194.
10. Ahmed R, Rizwan-ur-Rashid, McDonald PW, Ahmed SW. Prevalence of cigarette smoking among young adults in Pakistan. *JPMA* 2008; 58: 597.
11. Shafquat R, Saeed A. Smoking among a high school adolescents in Karachi, Pakistan. *Int J Epidemiol* 2004; 33(3): 613-4.
12. Sinha DN, Gupta PC, Pednekar MS, Jones JT, Warren CW. Tobacco use among school personal in Bihar, India. *Tob Control* 2002; 11: 82-5.
13. Myers MG, Kelly JF. Cigarette smoking among adolescents with alcohol and other drugs problem. *Alcohol Res Health* 2006; 29: 221-7.
14. Avenevoli S, Merikangas KR. Familial influences on adolescents smoking. *Addiction* 2003; 98: 1-20.
15. Global Youth Tobacco Survey Collaborating Group. Differences in worldwide tobacco use by gender: finding from the global youth tobacco survey. *J Sch Health* 2003; 73: 207-15.
16. Tyas SL, Pederson LL. Psychosocial factors related to adolescent smoking: a critical review of the literature. *Tob Control* 1998; 7: 409-20.
17. Jackson C. Cognitive susceptibility to smoking and initiation of smoking during childhood: A longitudinal study. *Prev Med* 1998; 27: 129-34.
18. Leatherdale ST, Cameron R, Brown KS, McDonald PW. Social student smoking at school, student characteristics, and smoking onset among junior students: a multi-level analysis. *Prev Med* 2005; 40: 853-59.
19. Rozi S, Akhtar S, Ali S, Khan J. Prevalence and factors associated with current smoking among high school adolescents in Karachi, Pakistan. *Southeast Asian J Trop Med Public Health* 2005; 36: 498-504.
20. Nizami S, Sobani ZA, Raza E, Baloch NA, Khan JA. Causes of smoking in Pakistan: an analysis of social factors. *J Pak Med Assoc JPMA* 2011; 61(2): 198.
21. Farkas AJ, Gilpin EA, White MM, Pierce JP. Association between household and

- workplace smoking restrictions and adolescent smoking, *JAMA* 2000; 284: 717-22.
22. Farkas AJ, Gilpin EA, Disefan JM, Pierce JP. The effects of household and workplace smoking restrictions on quitting behaviors. *Tob Control* 1999; 8: 261-5.
  23. Gilliland FD, Islam T, Berhane K, Guaderman WJ, McConnell R, Avol E, et al. Regular smoking and asthma incidence in adolescents. *Am J Respir Care Med* 2006, 174: 1094-1100.
  24. Reda AA, Moges A, Yazew B, Biadgilign S. Determinants of cigarette smoking among school adolescents in eastern Ethiopia: a cross-sectional study. *Harm Reduction J* 2012; 9: 39.
  25. CDC, Centers for Disease Control and Prevention. Cigarette prices and smoking prevalence after a tobacco tax increase — Turkey, 2008 and 2012. *MMWR* 2014; 63(21): 458-75.
  26. Morrison RA. Parental, peer, and tobacco marketing influences on adolescent smoking in South Africa. USA: Georgia State University; 2011.
  27. Sharma R, Grover VL, Chaturvedi S. Tobacco use among adolescent students and the influence of role models. *Indian J Com Med* 2010; 35: 272-5.
  28. Siziya S, Rudatsikira E, Muula AS. Cigarette smoking among school-going adolescents in Kafue, Zambia. *Malawi Med J* 2007; 19(2):75-8.