Original Article

Socio Demographic Factors Related to Smoking among Rural Adolescent

Farzana Islam Khan[1], Sharmina Afrin[2], Md. Ehsanul Huq[3], U.K. Sharmin Zaman[3], Md. Rezwanur Rahman[5]

Abstract

Background: *Smoking is one of the leading preventable causes of premature death, disease, and disability. Adolescence is the period of physical, psychological and social maturation from childhood to adulthood and adolescent smoking is a continuous process which is related to many disease factors.* ***Objective:*** *To find out the factors related to smoking among rural adolescents.* ***Materials and method:*** *One hundred and fifty one male adolescent aged 13 to 19 years from rural areas were interviewed with a semi-structured questionnaire during January to June 2013, at Dhamrai Upazilla Health Complex, Savar, Dhaka, Bangladesh. The socio demographic details, smoking and depression history were recorded. The Center for Epidemiologic Studies Depression (CES-D) Scale was used to measure the presence of depression. Smoking behavior was measured by a number of questions.* ***Results:*** *Mean(±SD) age of the study subjects was 16.8(±1.9) years. Most of the respondents started smoking around the average age of 14.3 years. The study shows that 64% respondents were smokers. Among smokers 80% were influenced by their friends about smoking. Seventy eight percent of the smokers were suffering from depression while 22% of nonsmokers were depressed ($p<0.001$). Majority (72%) of the issues of the smoker parents were smoker ($p<0.5$). Domestic violence ($p<0.001$) and stressful events in life ($p<0.05$) also played significant roles for smoking.* ***Conclusion:*** *Depression, parent smoking and peer smoking, domestic violence, and stressful life events are important factors to start smoking in rural adolescents.*

Keywords: *Smoking; adolescent; rural.*

Delta Med Col J. Jul 2014;2(2): 58 – 63

Introduction

Tobacco consumption in any form has negative consequences on human health and it has become a significant public health concern around the globe. According to the World Health Organization Report 1999 a considerable number of deaths would be prevented and tobacco related deaths would be halved if most of the adult smokers quit smoking over the next 20 years. People who begin smoking early have a greater risk of lung cancer compared to those who begin smoking at a later age as a result of the cumulative exposure.[1] Smoking is one of the leading preventable causes of premature death, disease, and disability in the world. Nearly 5 million people die annually from tobacco related illnesses, and the number is expected to be more than double by the year 2020.[2] Smoking is

1. Lecturer, Department of Reproductive and Child Health, Bangladesh University of health and science (BUHS), Dhaka, Bangladesh.
2. Associate Professor, Department of Community Medicine, Delta Medical College, Dhaka, Bangladesh.
3. Assistant Professor, Department of Community Medicine, Delta Medical College, Dhaka, Bangladesh.
4. Associate Professor, Department of Anatomy with Histology, Delta Medical College, Dhaka, Bangladesh.
5. Professor, Department of Biochemistry, Delta Medical College, Dhaka, Bangladesh.

Correspondence: Dr. Farzana Islam Khan. e-mail: farzanabd@gmail.com

estimated to cause 10 per cent of cardiovascular disease (CVD) and is the second leading cause of CVD, after high blood pressure. Nearly 6 million people die from tobacco use or exposure to secondhand smoke, accounting for 6 percent of female and 12 per cent of male deaths worldwide, every year.[3] Over 57,000 people die in Bangladesh each year from tobacco related diseases.[4] According to Centre for Disease Control (CDC) about 3,900 teens under 18 start smoking each day and around 1500 of these teens will become regular smokers.[5]

According to the European Society of Cardiology (ESC) - smoking increases the risk of heart disease and stroke by five-fold in people under the age of 50 and doubles risk in the over 60s. The protection of children and adolescents from taking up smoking is essential for the future health of the Europeans and stronger measures are needed.[6]

In Bangladesh, 20 million people use tobacco in one form or other with 5 million women in share. Smoking prevalence among male is 48.3% and among women is 20.9%.[2]

Adolescence is the period of physical, psychological and social maturation from childhood to adulthood. The term 'adolescent' refers to individuals between the ages of 10-19 years.[7] Adolescence is a stage of significant growth and potential but it is also considered to be a time of great risk. A lot of adolescents are inclining to use alcohol, cigarettes, or drugs and to start sexual relationships, thereby putting themselves at high risk for intentional injuries and infection from sexually transmitted diseases.[1]

Adolescent smoking is a dynamic process, with many experimenting but fewer going on regular use. Mental health might influence the process of becoming a smoker at various points: initiation of smoking, transition to regular, and the process of quitting.[8]

Adolescent smoking is associated with age, ethnicity, family structure, parental socioeconomic status, personal income, parental smoking, parental attitudes, sibling smoking, peer smoking, peer attitudes and norms, family environment, attachment to family and friends, school factors, risky behaviors, lifestyle, stress, depression/distress, self esteem, and health concerns. Depression and smoking show high rates of co-morbidity, with both typically beginning in adolescence and serving as leading causes of psychosocial, economic, and medical morbidity and premature death.[9]

Depression in adolescence is also common in school environments. A large number of research findings reported that major depression is effected in school children due to failure in school performance. Thus poor interpersonal relationships between teachers and the students result in low self-esteem in the adolescent boys and girls. These findings indicate adolescence as the peak age of depression. Both early and middle adolescence is considered as the vulnerable age for the development of depression. Before 1970, people thought that adolescent boys and girls should not be considered as candidates for depression. The Freudian notions about the unconscious have stated that depression is effected in adults only. The childhood depression was thought to be masked by other conditions. But recent researchers have reported that childhood depression is widely recognized by the physicians and psychiatrists. They consider depression as a serious condition affecting both adolescents and young children. Some researchers observed that depression may be seen in physical ailments such as digestive problem toward sleep disorders or persistent boredom.[10]

In a study, done on Bangladeshi population revealed that peer smoking is a very important factor for initiation of smoking. They also found that parents smoking was associated with age at initiation of smoking of their offspring.[11]

Today's adolescent will be the l eaders of future generation. Smoking addiction has been the common aspect for this generation. This smoking addiction is gradually destroying the youth of the society. Despite country's established tobacco control law, smoking among adolescents students is alarming in Bangladesh. Measures also should be taken immediately to detect the factors that are associated with depression. As major proportions of our population reside in rural area, we aimed to find the picture relating smoking among the rural adolescent.

Materials and method

This cross sectional study was done purposively on 151 rural male adolescent between 13-19 years of age from January to June 2013 at Dhamrai Upazilla Health Complex, Savar, Dhaka, Bangladesh, using a pre-tested semi-structured questionnaire and depression scale. It was designed to include socio demographic information, presence and level of depression, information about cigarette smoking, and factors associated with cigarette smoking. The socio demographic data included age, religion, family type, number of family members, parent's education, and parent's occupation. Information about smoking included smoking habit of the respondents, age of starting smoking, person who influenced the respondents about smoking, parents smoking and best friend smoking. Information related to depression include domestic violence and stressful events in the last year of the respondents. A written informed consent was taken from each maintaining full autonomy of the participants.

The Center for Epidemiologic Studies Depression (CES-D) Scale was used to measure the presence of depression. Smoking behavior was measured by a number of selected questions.[12]

Results

The respondents were from 13 to 19 years of age, with mean(±SD) of 16.8(±1.9) years, majority (73.5%) of them were Muslim and mostly living in joint family (53%). Most (94%) of the respondents' parents were alive and father of 45% respondents had no or poor education. On the other hand most of their mothers had no or poor education (64%). Most (45%) of their fathers were doing agriculture/business, 41% were service holder and most (74%) of their mothers were home makers (Table I a & b).

Table I(a): Socio demographic features of study subjects (N=151)

Variables	Mean±SD	Range
Age (years)	16.8±1.9	13-19
Family size (persons)	6.7±2.6	3-15
Smoking starting age (years)	14.3±1.8	10-18

Table I(b): Socio demographic features of study subjects (N=151)

Variables	Frequency	Percentage (%)
Family type		
Nuclear family	70	46.3
Joint Family	80	53.0
Third generation Family	1	0.7
Religion		
Muslim	111	73.5
Hindu	37	24.5
Buddhist	1	0.7
Christian	2	1.3
Parents alive		
No	10	7
Yes	141	93
Father's education		
No or poor education	68	45
Some education	48	32
Good education	35	23
Mother's education		
No or poor education	96	64
Some education	43	28
Good education	12	8
Father's occupation		
Service	62	41
Agriculture/Business	68	45
Others	21	14
Mother's Occupation		
Service	17	11
Business	23	15
Home maker	111	74

Table II shows the proportion of smoking and related factors. It shows that around 64% adolescents were smokers and 54% were depressed. Regarding parent's smoking, 46% were smokers. Majority (67%) respondents' best friends were smoker. Among respondents, 39% had history of leaving home due to domestic violence and 40% had recent stressful events.

Figure 1 shows that most (51.0%) of the respondents were influenced either by their friends followed by watching others (11.9%) to smoke and only 1% was influenced from their family.

Table II: Smoking status and related factors (N=151)

Variables	Frequency (%)
Smoking	
No	54(36)
Yes	97(64)
Depression	
Depressed	81(54)
Normal	70(46)
Parents smoker	
No	82(54)
Yes	69(46)
Best friend Smoker	
No	50(33)
Yes	101(67)
Domestic violence lead to leave home	
No	92(61)
Yes	59(39)
Recent Stressful event	
No	90(60)
Yes	61 (40)

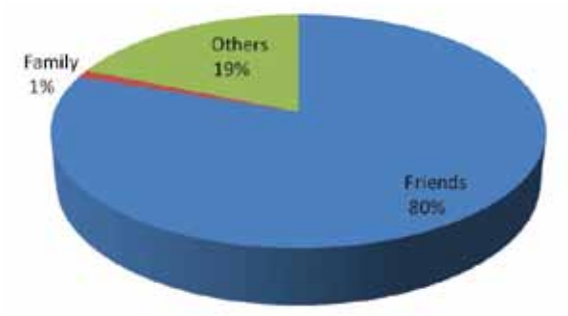

Fig 1: Influencing factors for smoking (n=96)

Table III shows that among 151 respondents 54% were depressed and among depressed respondents 78% were smoker and it was 47% for normal respondents. The relation between smoking and depression was statistically significant ($p<0.001$). There had also been significant association of smoking with domestic violence ($p<0.001$) and stressful events in life ($p<0.05$). Parents' smoking also plays significant role. We found that among the smoker parents (46%), majority of their issues (72%) were smoker ($p<0.05$). Family type, father's and mother's education and occupation had no significant relation with smoking.

Table III: Comparison of socio demographic variables with smoking (N=151)

Variables	Non smoker (%)	Smoker (%)	Total (%)	p value
Depression				
Depressed	18(22)	63(78)	81(54)	<0.001
Normal	37(53)	33(47)	70(46)	
Parents smoker				
No	35(43)	47(57)	82(54)	<0.05
Yes	19(28)	50(72)	69(46)	
Domestic violence lead to leave home				
No	43(47)	49(53)	92(61)	<0.001
Yes	11(19)	48(81)	59(39)	
Stressful life				
No	38(42)	52(58)	90(60.0)	<0.05
Yes	16(26)	45(74)	61(40.0)	
Types of family				
Nuclear Family	27(39)	43(61)	70(46.3)	
Joint Family	27(34)	53(66)	80(53.0)	>0.05
Three generation Family	0	1(100)	1(0.7)	
Parents alive				
No	4(40)	6(60)	10(7)	>0.05
Yes	50(37)	91(64)	141(93)	
Father's education				
No or poor education	25(37)	43(63)	68(45)	
Some education	15(31)	33(69)	48(32)	>0.05
Good education	14(40)	21(60)	35(23)	
Mother's education				
No or poor education	33(34)	63(66)	96(64)	
Some education	17(40)	26(60)	43(28)	>0.05
Good education	4(33)	8(67)	12(8)	
Father's Occupation				
Service	25(40)	37(60)	62(41)	
Agriculture/Business	19(28)	49(72)	68(45)	>0.05
Others	10(48)	11(52)	21(14)	
Mother's occupation				
Service	7(41)	10(59)	17(11)	
Business	9(39)	14(61)	23(15)	>0.05
Home maker	38(34)	73(66)	111(74)	

Discussion

This was a cross sectional study based on rural adolescent smoking and was aimed to find out the factors related to smoking among them.

Smoking is the major single known cause of non communicable diseases, such as cancer and cardiovascular disease. Most people try their first cigarette and become daily smoker as adolescent. People who start smoking before 15 yrs of age have double risk of developing lung cancer than those who start after the age of 20 years.[11]

In this study mean age of starting of smoking was 14.3±1.8 years (13 - 19 years). Finding of this study is similar to that of several other studies. In Bangladesh, Global Adult Tobacco Survey 2009 showed nearly 19% smokers started smoking between 10 and 15 years of age, while 25% started between 15 and 16 years.[13] Another study found that mean age of the smoking initiation was 13.5±0.6 years with age range of 12 to 16 years.[8]

Peer smoking is a very important factor to start smoking. This study reveals that 51.0% of the respondents were influenced about smoking by their friends. Similar findings were found in another study, which observed stronger associations between smoking and friend's smoking status (OR=3.07, 95% CI 2.99-3.16).[9]

Other researchers also found that smoker respondents were significantly more likely to have smokers as their friends. Colleagues or friends who are smokers increased risk of smoking by 4.79 times. Having peers who smoked is one of the most dominant environmental factors of smoking for its potential effects of role model. Actually smoking started during adolescence due to peer influences. Peer influence, such as the smoking status of best male/female friends, proved to be the most significant and consistent predictor across all ages, while parental influence had little effect on adolescent smoking status.[14] Peer smoking was found to possess the clearest linear trend in those reporting most of their friends to be smoker in another study.[15]

We also found that other factors like parent's smoking, depression, stressful life events and domestic violence are also important factors to start smoking.

In this study 45% of the respondents' parents were smoker. This study also found association between respondents' smoking habit and their parents' smoking habit. This finding is supported by a study done in Bangladesh where they found parent's smoking was associated with age at initiation of smoking of offspring.[11]

We found significant relation between smoking and depression. In a study it was described that depression and anxiety significantly predicted smoking onset.[15] In USA, current students' smokers had the highest odds ratio for depression, followed by former smokers, then nonsmokers. The study also revealed that, among respondents, 22% were smokers and 33% had depressive symptoms. The prevalence of depressive symptoms was significantly higher in smokers (42.9%) than in nonsmokers (29.5%). Respondents with depressive symptoms had increased odds of smoking even after adjusting for socioeconomic and cultural factors (OR = 2.68, 95% CI = 1.45-4.97).[15]

Other studies have identified major depression and depressive symptoms as important determinants of adolescent smoking.[16-18] All the findings relating smoking and depression are in agreement with the present study findings.

We also found the significant relation between smoking with domestic violence and stressful life events. This is being supported by another study that was done at rural Bangladesh. They described that out of 719 students, 22.1% were current smokers and the rest 77.9% were non smokers. Considering the reasons for smoking, 50% reported that they started smoking due to peer pressure followed by curiosity (34%), to avoid anxiety and tension (27.7%), feeling of maturity (13.8%), symbol of manliness (8.8%) and unhappy family environment (8.2%). To investigate the factors for influencing smoking, a logistic regression model was fitted with a dependent variable, smoking status (dichotomous variable) and the independent variables included a number of socio-demographic characteristics. They found that smoking was significantly associated with age, sex, educational attainment (class), residence, religion, family size, occupation of the household head, parental literacy and parental and sibling smoking ($p<0.05$).[19]

The study wraps up that initiation of adolescent smoking in rural area of Bangladesh starts at the beginning of teen and is significantly associated with parents smoking, domestic violence, stressful life and depression.

In conclusion, we wish to reinforce a vision that, in view of the long term effects of smoking on the health and socio-economic development of the country, there is an urgent need of public health interventions, with special attention to the determinants of smoking behavior. It is important to involve teachers and parents in smoking prevention program for adolescents and increase their awareness of hazards of smoking as well as to discourage them to smoke. More study including large sample in different rural areas of Bangladesh should be carried out to get the overall picture, so that policymakers and health workers might take effective measures against adolescent smoking.

References

1. Appau IK. Smoking Habits among Adolescents [thesis]. Turuku, Turku University of Applied Sciences; 2011.
2. Report on Global Youth Tobacco Survey (GYTS) and Global School Personnel Survey (GSPS) 2007 in Bangladesh [Internet]. 2008 Jun [cited 2013 Dec 12]. Available from: http://www .searo.who.int/ entity/ diseases//ban_gyts_report_2007.pdf.
3. Global Atlas on Cardiovascular Disease Prevention and Control [Internet]. Mendis S, Puska P, Norrving B, editors. World Health Organization (in collaboration with the World Heart Federation and World Stroke Organization), Geneva 2011 [cited 2013 Dec 10]. Available from: http:// whqlibdoc. who.int/publications/2011/9789241564373_eng.pdf.
4. Bangladesh Tobacco Burden Facts [Internet]. 2004 [cited 2013 Dec 14]. Available from: http://global.tobaccofreekids.org/files/pdfs/en/Bangladesh_tob_burden_en.pdf.
5. McClain J. Teen Smoking Trends on the Rise. The Durham Voice [Internet]. 2012 April 19 [cited 2013 Dec 14]. Available from: http://www. durhamvoice. org/teen-smoking-trends-on-the-rise.
6. European Heart Network and European Society of Cardiology. European Cardiovascular Disease Statistics [Internet]. 2012 [cited 2013 Dec 11]. Available from: http://www.escardio. org/about/ documents/eu-cardiovascular-disease-statistics-2012.pdf.
7. Jacbson B. Smoking and Health: A New Generation of Campaigners. Br med J. 1983;287(6390):483-84.
8. Patton GC, Hibbert M, Rosier MJ, Carlin JB, Caust J, Bowes G. Is Smoking Associated with Depression and Anxiety in Teenagers? Am J Public Health. 1996;86(2):225-30.
9. Whalen CK, Jamner LD, Henker B, Delfino RJ. Smoking and Moods in Adolescents with Depressive and Aggressive Dispositions: Evidence from Surveys and Electronic Diaries. Health Psychol. 2001;20:99-111.
10. Huq SZ, Afroz N. Depression in Adolescence. J Life Earth Science. 2005;1(1):11-13.
11. Flora MS, Taylor CN, Rahman M, Akter SFU. Influence of Parental Smoking on Smoking Habits of Bangladeshi Adult Population in Rural and Urban Areas. American International Journal of Contemporary Research. 2012;2(6);221-27.
12. Radloff LS. The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. Applied Psychological Measurements. 1977;3:385-401.
13. Global Adult Tobacco Survey: Bangladesh Report 2009 [Internet]. 2009 [cited 2013 Dec 14]. Available from: http://zunia.org/post/global-adult-tobacco-survey-bangladesh-report-2009.
14. Rahman MM, Karim MJ, Ahmed SA, Suhaili MR, Ahmed SNW. Prevalence and Determinants of Smoking Behaviour among the Secondary School Teachers in Bangladesh. International Journal of Public Health Research. 2011;Special Issue:25-32.
15. Audrian-McGovern JA, Rodriguez D, Kassel JD. Adolescent Smoking and Depression: Evidence for Self-Medication and Peer Smoking Mediation. Addiction. 2009;104(10):1743-56.
16. Weiss JW, Mouttapa M, Chou CP, Nezami E, Johnson CA, Palmer PH, et al. Hostility, Depressive Symptoms, and Smoking in Early Adolescence. Journal of Adolescence. 2005;28:49-62.
17. Anda RF, Williamson DF, Escobedo LG, Mast EE, Giovino GA, Remington PL. Depression and the Dynamics of Smoking: A National Perspective. Journal of the American Medical Association. 1990;264:1541-45.
18. Fergusson DM, Lynskey MT, Horwood LJ. Comorbidity between Depressive Disorders and Nicotine Dependence in a Cohort of 16-Year-Olds. Archives of General Psychiatry.1996;53:1043-47.
19. Tarafdar MMA, Nahar S, Rahman MM, Hussain SMA, Zaki M. Prevalence and Determinants of Smoking among the College Students in Selected District of Bangladesh. Bangladesh Medical Journal. 2009;38(1):3-8.