

Research Article

Prevalence of smoking in a rural community of Bangladesh

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ABSTRACT

Background: Smoking is a global public health concern. It causes huge premature death, health issues and possess economic burden in the developing countries. Despite of mass anti-smoking campaigning prevalence of smoking is increasing in developing countries. The aim of this study was to determine the prevalence of smoking and factors associated with smoking among a rural population of Bangladesh.

Methods: A cross-sectional study was designed to collect data from rural community of Bangladesh in February to April 2011. Sample was determined purposively and size was 500.

Results: The study's current smoking prevalence was 39.4%. Respondents mean age was 34.63 years and current smokers mean age was 35.7SD $\pm$ 9.23 years. The prevalence of current smoking amongst male (89.3%) was significantly higher in comparison with the female (10.7%). Current smoking habit had been gradually decreased with the level of education. The prevalence of current smoking was significantly ($P = 0.000$) highest among the day labour (30.5%) and two-third smokers was initiated to smoking within the age of 10 to 20 years. About 36.4% of the current smokers smoked 5 to 15 sticks per day. Both ever (42%) and current (45.2%) smoking prevalence was highest amongst the population those monthly family income below 5000 Taka (60 USD).

Conclusions: Overall rural smoking prevalence was 39.4%. Ever and current smoking prevalence was significantly higher among males. Smoking prevalence was highest among the illiterate and reduced with the increase of level of education and socio-economic status. To reduce the smoking prevalence amongst the risk group, policy-maker should be implementing massive anti-smoking program.

Keywords: Prevalence, Smoking, Public health, Rural population, Bangladesh

INTRODUCTION

Smoking is extremely harmful for our body. Smoking is a global public health concern. About 1.4 billion people smoke worldwide, which is expected to rise to more than 1.6 billion by 2025.¹ It causes huge premature deaths and poses considerable economic burden among the poor people especially living in developing countries like Bangladesh.² Worldwide the toll of tobacco is already high. Unfortunately the low and middle income countries

will experience more tobacco-attributable deaths in future decades.³ Worldwide tobacco-attributable deaths were 5 million in 2008, which are projected to reach at 6.4 million in 2015 and 8.3 million in 2030. In the low- and middle income countries such deaths are projected to increase from 3.4 million to 6.8 million between 2002 and 2030.³ The World Health Organization reported in 2007 that about 25 million children are exposed to second-hand smoke in public places in South-East Asia Region which would be a major contribution to the chronic disease burden in the region.⁴ An estimated 50%

of men and 9% of women smoke in low and middle income countries, whereas men in low income countries are about 7.5 times more likely to smoke than women.⁵ Smoking cigarettes and bidi's are common habits among the general male population in Bangladesh.⁶⁻⁸ Smoking related diseases such as pulmonary diseases, stroke, ischemic heart disease, lung cancer and oral cancer are well documented in some studies.^{5,9} The effect of tobacco on women's reproductive health by reduces fertility, higher risk of miscarriage, premature delivery, still-birth, low birth weight. In the regions where the tuberculosis is prevalent, smokers have greater risk of dying from pulmonary tuberculosis as compared to non-smokers.¹ Tobacco related illnesses accounted for 16% of the total deaths among the general population of Bangladesh who are aged 30 years and above.⁸ Smoking is also positively linked with the illicit drug use in Bangladesh, which is another public health concern.⁵ The cost of tobacco consumption at the national level is found to be associated with the increased health-care costs, loss of productivity due to illnesses and early deaths and environmental damages.⁸ Excess mortalities from all causes and cause-specific diseases are also reported in some countries including India.³ Consequently, little research has been done in rural areas of Bangladesh to determine the prevalence and risk factors associated with smoking among population. The aim of the study was to determine the prevalence and the factors associated with smoking among rural population of Bangladesh.

METHODS

This was a cross-sectional descriptive study to assess the prevalence of smoking in a rural community of Bangladesh those were some villages of Dhamrai, which included Choybaria, Chandrail, Kulila, Kelia and Jaipur.

It was situated 45 KM away from the capital of Bangladesh and takes around one and half an hour to reach Dhamrai from Dhaka by road. All the people aged 15-55 years residing in those areas were selected for the study. This study was carried out from February, 2011 to April, 2011. Sample was determined purposively and it was 500. Among them 251 was male and 249 was female. A pre-tested semi-structured questionnaire was used to collect data which contained socio-demographic and smoking related questions that was prepared keeping in mind the factors influencing the prevalence of smoking. Before going to face-to-face interview of the respondent a written consent was taken from them. Interview was conducted in Bengali. The central tendency and dispersion test was used to measure the descriptive statistics. Chi-Square tests of significance were used to assess the association between possible risk factors and cigarettes smoking. Independent sample *t*-test was used to compare means between two groups. Data were analyzed using SPSS version 16.0. Statistical significance was presumed for probability $P < 0.05$.

RESULTS

Smoking prevalence

Out of 500 respondents there were 255 ever smokers and 197 current smokers, giving a prevalence of 51% ever smokers and 39.4% current smokers (Table 1). The mean age of the respondents was 34.63 years and the mean age of current smokers was 35.7 years (SD $\pm$ 9.23, 95% CI 34.41 to 37.0) and median was 35 years. There was a significant difference between the mean age of current and never smokers ($t = 1.92$; $df = 498$ and $P = 0.05$). Amongst current smokers, 70.1% were males and 8.4% were females.

Table 1: Smoking status among the respondents by sex.

Respondents	Smoking status							
	Ever		Current		Former		Never	
	n	%	n	%	n	%	n	%
Male	216	84.7	176	89.3	40	69.0	35	14.3
Female	39	15.3	21	10.7	18	31.0	210	85.7
Total	255	51.0	197	39.4	58	11.6	245	49.0

Smoking prevalence by sex

The study also shows in table 1 that ever smoker's smoking prevalence was significantly 34.37 times more likely to higher (OR 34.37, 95% CI 20.9 to 56.5) in males (84.7%; $n=216$) as compared to (15.3%; $n=39$) in females ($\chi^2 = 250.7$; $df = 1$ and $P = 0.0001$). Similarly, current smoker's prevalence was significantly 25.94 times more likely to higher (OR 25.94, 95% CI 15.37 to 43.75) in

males (89.3%) as compared 10.7% in females ($\chi^2 = 211.1$; $df = 1$ and $P = 0.0001$).

Smoking Initiation age, type and some variables

Two-third (66.3%) of the smokers was initiated to smoking within the age group of 10 to 20 years and nearly half (48.2%) of the current smokers daily spent more than 15 Taka (12 Cent) for smoking whereas 36.4% of the current smokers were smoked 5 to 15 sticks per

day. Amongst the current smokers 68% were smoked filtered cigarettes and 32% were smoked bidi's or non-filtered form of cigarettes. Table 2 shows that both ever and current smoking prevalence increased with age. These were lowest at the younger age group. Chi-square test showed that there was a significant relationship between current smoking prevalence and their age groups ($\chi^2 = 15.92$; $df = 4$ and $P = 0.003$). There was also a significant relationship between ever smokers and their

age group ($\chi^2 = 22.93$; $df = 4$ and $P = 0.000$). Among the male smoker's 33.7% were businessman, 28.8% were day labor whereas among the female smoker's 61.5% were day labor and 15.4% were businesswomen. Out of 500 respondents 96% of them knew the harmful effects of smoking. At the same time 77% of the respondents knew that smoking causes harm to the surrounding people and about 73% knew that smoking also causes harm to pregnant mother and her baby.

Table 2: Respondents ever and current smoking prevalence by age groups.

Age group	Smoking status						Total	
	Ever		Current		Never			
	n	%	n	%	n	%	n	%
<20 years	8	22.2	4	11.1	28	77.8	36	100.0
21-30 years	71	43.8	61	37.7	91	56.2	162	100.0
31-40 years	96	55.5	75	43.4	77	44.5	173	100.0
41-50 years	70	61.9	52	46.0	43	38.1	113	100.0
>50 years	10	62.5	5	31.2	6	37.5	16	100.0
Total	255	51.0	197	39.4	245	49.0	245	100.0

Socio-economic and educational status with smoking

The study significantly shows that both ever and current smoking prevalence decreased with gradually increased total monthly family income (Figure 1). Out of 255 ever and 197 current smokers, there were 45.2% and 42.0% ever and current smoker's total monthly family income was less than 5000 BD Taka (61 US\$). On the other hand, 17.6% ever and 15.2% current smoker's total monthly family income was BD Taka more than 10000. There was a significant linear relationship between total monthly family income and ever smokers ($\chi^2 = 12.01$; $df = 1$ and $P = 0.001$). [1US\$ = 82 BDT].

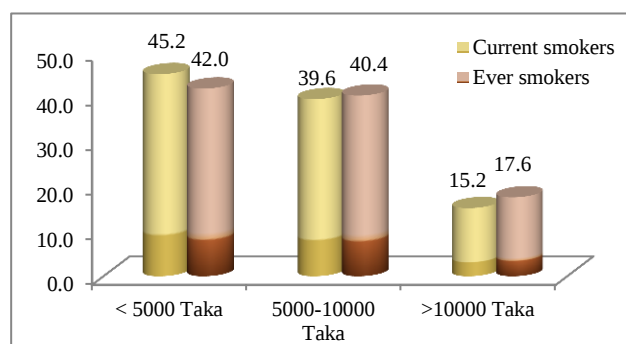


Figure 1: Smoking prevalence with total monthly family income.

This study also revealed in Figure 2 that as the educational level increased both ever and current smoking prevalence decreased. Among the current smokers 36.5% were illiterate, 31.5% had completed

primary level and 22.3% had completed secondary level. Association between current smoking and education level was linear by linear weakly significant ($P < 0.058$). Both ever (36.5%) and current (33.7%) smoking status was highest among the people who have had no education and it was gradually decreased with the level of education.

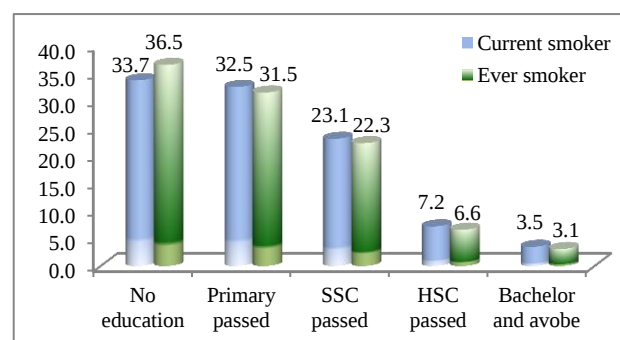


Figure 2: Smoking prevalence with level of educational status.

Reasons, family and peer influence for smoking

Nearly half (48.2%) of the respondents had initiated smoking by the influence of friends smoking habits (Figure 3); and it was followed by recreation (25.9%) and mentally depression (18.8%). The respondents' friends' smoking habits was non-significantly higher among the ever smokers than the never smokers, where 100% of ever smokers had known that at least one of their friends were smokers that also indicated that friends' smoking habit have an influencing factor of smoking.

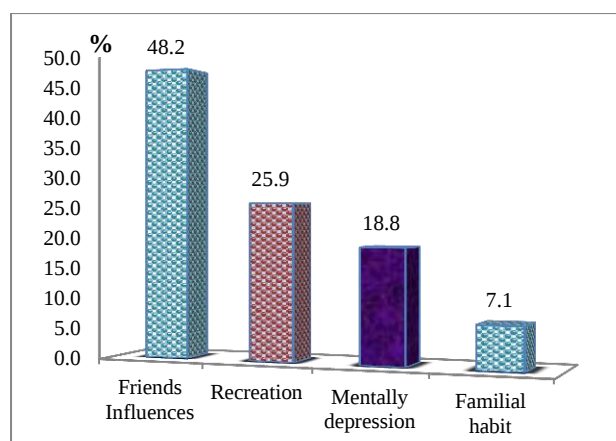


Figure 3: Reasons for smoking amongst ever smokers.

Among 500 respondents over half (54%) of them informed that their family members were habituated of smoking, though 96% of them were aware about the harmful effects of smoking.

DISCUSSION

The analyses in this study indicate that the prevalence of smoking among males and females has some variance in percentages. Bangladesh is a developing country and it has wide variety of educated and illiterate population, with rich and poor as well in the areas of socio-demographic sectors. Several studies reflected that the prevalence of smoking in Bangladesh among over all male (43%) and female (29%).^{6,10,11} Which has been much higher in case of male current smokers (89.3% vs. 43%) and much less in case of female current smokers (10.7% vs. 29%). Similarly, the prevalence of ever (51.0%) smokers and current (39.4%) smokers of this study was higher than the country's prevalence of ever smokers (23%) and current smokers (20.9%) that was reported in Barakat et al.¹⁰

The poorer, the more smoker. This study indicated that the poorer have had the habit of more smoking than the economically solvent person in rural areas which has been reflected in several studies in Bangladesh and abroad.^{3-4,6-8} As well as the less education having habituated with more smoking. This statement has been supported by other studies in many developing countries. This study shows that, smoking practice was more common in low and middle-income, and illiterate group which was revealed in other studies.¹¹⁻¹⁷ As the age increased, having higher education and economic stability, the impact of smoking prevalence might be fallen. This study showed in Figure 1 and 2 that the intensity of smoking has been decreasing with age and good economic status. The prevalence of smoking was inversely related to age, economic status and educational levels that has been observed in various studies in the world.¹⁸⁻²²

Like any developing countries, initiation of smoking came from their family and friends influence. It was one type of ignorance of parents that they imposed their children to brought cigarettes from nearby store. It is one of the major influence to initiation smoking and there have a similar findings that was reported in studies.^{23,24} The study of Lantz²⁵ and Smith et al.²⁶ also reported that 'stress' was the main reason for smoking rather than 'fun' among the USA and Japanese.

Due to a lot of anti-smoking campaign, most of the population are aware of the harmful effect of smoking. For that reason, the prevalence of smoking is gradually decreasing and easy to motivate them to quit smoking. These feature of reports were all most similar to the several studies.^{27,28} And it is a quite good sign for the human health.

The study revealed that, the prevalence of current smoking amongst male was significantly higher in comparison with the female in Bangladesh. The prevalence of current smoking was significantly highest among the day labor than other occupation. Whereas two-third ever smokers initiated smoking within the age group of 10 to 20 years. A main reason for starting smoking in this study was 'friends influence' followed by 'recreation'. Current smoking habit had been gradually decreased with the level of education and income level. All the smokers had known that most of the diseases occur due to smoking. Age, sex, economic status and groups smoking habits were associated with smoking among rural population of Bangladesh. This information suggests creating more awareness regarding harmful effect of smoking.

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