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## Determinants of cigarette/ bidi smoking among youth male in rural Mymensingh of Bangladesh: A cross-sectional study

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<b>Full Title:</b>	Determinants of cigarette/ bidi smoking among youth male in rural Mymensingh of Bangladesh: A cross-sectional study
<b>Short Title:</b>	Determinants of smoking among youth male in Bangladesh
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<b>Keywords:</b>	Smoking; youth; rural; determinants; Bangladesh
<b>Abstract:</b>	<p><b>Background</b></p> <p>Smoking cigarette/ bidi, is a serious health threat, causes preventable premature morbidity and mortality. Higher prevalence of smoking among the youth hampers a country's development, as the youth are the main drives of socio-economic development. An effective understanding of factors associated with youth smoking is precious to prevent youth smoking. This study aims to identify the determinants of smoking cigarette/bidi among the youth male of the rural areas of Mymensingh district in Bangladesh.</p> <p><b>Methods</b></p> <p>Data came from a secondary source. A total of 385 youth male aged 15-24 years were interviewed face-to-face from the rural areas of Mymensingh district in Bangladesh. Univariate distribution, chi-square tests, and binary logistic regression model were employed to identify the factors associated with smoking cigarette/bidi among the youth male.</p> <p><b>Results</b></p> <p>The prevalence of smoking cigarette/bidi among the youth male is 40.3%. Age, occupation, monthly income, family's monthly income, cigarette/ bidi smoking status of father, brother and close friends, and knowledge about harmfulness of smoking are revealed as the determinants of cigarette/ bidi smoking. For instance, the odds of being smoker for those aged 18-20 years is 1.78 times [95% CI: 0.77-4.11], and for those aged 21-24 years is 5.54 times [2.25-13.61] than those aged 15-17 years. Business owner is less likely (Odds Ratio [OR]: 0.15 [0.03-0.69]) to smoke than the day labourer. Having smoker fathers (OR: 2.24 [1.25-3.98]), smoker brothers (OR: 3.03 [1.46-6.29]), smoker friends (OR: 10.65 [5.89-19.25]) are significantly associated with smoking cigarette/ bidi.</p> <p><b>Conclusion</b></p> <p>As the first study, it provides the determinants of cigarette/ bidi smoking among youth male of the rural areas of Mymensingh district in Bangladesh. Relevant authorities are suggested to consider the study's findings and recommendations to revise the existing smoking policies so that smoking among youth can be prevented for future development of the country.</p>
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1 **Determinants of cigarette/ bidi smoking among youth male in rural**

2 **Mymensingh of Bangladesh: A cross-sectional study**

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## 26 **Abstract**

### 27 **Background**

28 Smoking cigarette/ bidi, is a serious health threat, causes preventable premature morbidity  
29 and mortality. Higher prevalence of smoking among the youth hampers a country's  
30 development, as the youth are the main **drives** of socio-economic development. An effective  
31 understanding of factors associated with youth smoking is precious to prevent youth  
32 smoking. This study aims to identify the determinants of smoking cigarette/bidi among the  
33 youth male of the rural areas of Mymensingh district in Bangladesh.

### 34 **Methods**

35 Data came from a secondary source. A total of 385 youth male aged 15-24 years were  
36 interviewed face-to-face from the rural areas of Mymensingh district in Bangladesh.  
37 Univariate distribution, chi-square tests, and binary logistic regression model were employed  
38 to identify the factors associated with smoking cigarette/bidi among the youth male.

### 39 **Results**

40 The prevalence of smoking cigarette/bidi among the youth male is 40.3%. Age, occupation,  
41 monthly income, family's monthly income, cigarette/ bidi smoking status of father, brother  
42 and close friends, and knowledge about harmfulness of smoking are revealed as the  
43 determinants of cigarette/ bidi smoking. For instance, the odds of being smoker for those  
44 aged 18-20 years is 1.78 times [95% CI: 0.77-4.11], and for those aged 21-24 years is 5.54  
45 times [2.25-13.61] than those aged 15-17 years. Business owner is less likely (Odds Ratio  
46 [OR]: 0.15 [0.03-0.69]) to smoke than the day labourer. Having smoker fathers (OR: 2.24  
47 [1.25-3.98]), smoker brothers (OR: 3.03 [1.46-6.29]), smoker friends (OR: 10.65 [5.89-  
48 19.25]) are significantly associated with smoking cigarette/ bidi.

### 49 **Conclusion**



50 As the first study, it provides the determinants of cigarette/ bidi smoking among youth male  
51 of the rural areas of Mymensingh district in Bangladesh. Relevant authorities are suggested to  
52 consider the study's findings and recommendations to revise the existing smoking policies so  
53 that smoking among youth can be prevented for future development of the country.

54

## 55 **Key words**

56 Smoking; youth; rural; determinants; Bangladesh.

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## 60 Introduction

61 Tobacco use is a significant public health concern. Globally, more than 7 million  
62 people die due to direct tobacco use, and around 1.2 million non-smokers die due to being  
63 exposed to second-hand smoke [1]. All forms of tobacco are harmful, and there is no safe  
64 level of exposure to tobacco [1]. Cigarette/ bidi smoking is the most common form of tobacco  
65 use among men in Bangladesh, where 43% of adults use some form of tobacco, 45% of men  
66 and only 1.5% of women smoke cigarettes [2]. Despite having ban on the sales of tobacco to  
67 and by minors, particularly those aged <18 years, in Bangladesh national tobacco control law,  
68 university male students are found to initiate smoking at an average age of 17.8 years [3].  
69 Evidences demonstrate that majority of the people try their first cigarette before the age of  
70 18 and become daily smokers in adolescents. For instance, most of the European start  
71 smoking before the age of 18 and often transit to regular smokers during young adulthood [4].  
72 In the United States, about 90% of all regular smokers begin smoking at or before age 18, and  
73 hardly any regular smoker tries the first cigarette outside of childhood [5,6]. When people  
74 start smoking at an earlier age, the duration of smoking must be longer for the people at  
75 adulthood. Due to the prolonged smoking, a wide range of diseases can accelerate the  
76 premature morbidity and mortality among the adults [7]. The longer duration of smoking  
77 creates more miserable conditions to their lives, families, societies and the country, especially  
78 for developing country like Bangladesh; because cigarette smoking harms almost every organ  
79 of human body, causes many diseases, and reduces the health of smokers in general [8].  
80 Therefore, it is imperative to study the factors that are associated with smoking, particularly  
81 among the youth, in Bangladesh. Identification of modifiable factors will provide the  
82 possibilities to prevent smoking among the youth.

83 Bangladesh has made a considerable progress in socio-economic and demographic  
84 indicators over the last few decades [9]. And, the socio-economic and demographic indicators

85 are progressing in the right path to achieve the desired level of prospective socio-economic  
86 development in the country. However, the progress could stay behind the desired level due to  
87 the use of tobacco among the youth, as the use of tobacco has high impact on growing  
88 economy and high expenditure on health [10]. Bangladesh is passing through its golden  
89 opportunity of demographic dividend where youth remains **the central** to such development.  
90 Therefore, smoking among youth **is alarming issue** to be taken care of for the future  
91 development of the country.

92 According to the Global Adult Tobacco Survey, in Bangladesh, around 22 million  
93 people are smoking different types of tobacco products, among them 12% people aged 15-24  
94 years (considered youth in the current study; discussed in the Methods section) are  
95 consuming some form of tobacco [11]. The number of tobacco users, particularly among the  
96 youth, is increasing day by day due to availability of cheap tobacco products, poor status of  
97 tobacco control regulations, and weak enforcement of such regulations [3,12]. Youth is an  
98 important age group as healthy youth leads to healthy future. They are the main instruments  
99 for future development of the country. Higher incidence of smoking among the youth surely  
100 hampers the future development. Hence, it is indispensable to restrict the youth from  
101 smoking. In different settings, factors associated with cigarette smoking among the youth  
102 includes exposure to smokers (elders, parents, friends, teachers), availability of tobacco, low  
103 socio-economic status, low self-esteem, poor academic performances [13,14]. Although there  
104 are studies on the determinants of smoking around the world [15–20], there is a paucity of  
105 research to identify the factors responsible for smoking among the youth in Bangladesh. **In**  
106 **fact, the majority of the existing studies have been limited to the prevalence and predictors of**  
107 **tobacco use among the university students. It is essential to identify the determinants of youth**  
108 **smoking in Bangladesh.** Thus, the aim of this study is to identify the determinants of smoking  
109 among the youth in Bangladesh. It is believed that findings of the current study will be

110 helpful for Bangladeshi policy makers in formulating strong measures along with revising or  
111 redrawing the existing policies to discourage smoking among the youth in Bangladesh.

## 112 **Methods**

### 113 **Data**

114 We utilized secondary data for this study. The secondary data came from the project  
115 titled “Knowledge, awareness and practices among youth smokers in Trishal Upazila under  
116 Mymensingh district: A micro-survey study”, funded by the Research and Extension Center,  
117 Jatiya Kabi Kazi Nazrul Islam University, Bangladesh. In brief, the data for the project were  
118 collected from youth male aged 15-24 years (according to United Nations, individuals aged  
119 15-24 years are youth [21]) from the rural areas of Trishal Upazila of Mymensingh district of  
120 Bangladesh from November 25, 2019 to December 15, 2019. The upazila is about 20  
121 kilometers away from the divisional town of Mymensingh, and about 90 kilometers away  
122 from the capital city of Dhaka. The Upazila consists of 1 municipality and 12 unions. Using  
123 simple random sampling technique, at first one union (namely, Trishal Union) from Trishal  
124 Upazila, and then five wards (Ward 1, 2, 3, 8 and 9) from Trishal Union were selected.  
125 Finally, using systematic random sampling technique, data from 385 youth males were  
126 collected from the selected wards. Based on the total number of youth male in the selected  
127 wards, obtained from the Bangladesh Population and Housing Census 2011 [22], the data  
128 were collected, and during data collection one of every fifth male youth was interviewed in  
129 the selected wards. Consequently, 53 youth male from Ward 1, 81 from Ward 2, 74 from  
130 Ward 3, 91 from Ward 8, and 86 from Ward 9 were interviewed. A well-structured  
131 questionnaire with demographic and socio-economic questions was administered face-to-face  
132 to 385 youth males. From socio-cultural and religious points of view, smoking among female

133 are still beyond the consideration in Bangladesh. Therefore, only males were considered for  
134 the project.

### 135 **Outcome variable**

136 Current smoking status of the respondents (youth males aged 15-24 years) is  
137 considered as the outcome variable, which was dichotomized by assigning 1 if a respondent  
138 had been cigarette/ bidi smoking for last six months prior to the survey, and 0 for otherwise.

### 139 **Explanatory variables**

140 A wide range of individual and household characteristics, reported to be associated  
141 with smoking status among the youth in previous studies [20,23–27], were included in the  
142 current study. Individual's characteristics include respondent's current age (classified as 15-  
143 17, 18-20, or 21-24 years), education (categorized 0 to 5 years of schooling as below  
144 secondary, 6 to 10 years of schooling as secondary, or 11+ years of schooling as higher  
145 secondary and above), occupation (categorized as day labourer, service, business, students, or  
146 unemployed), monthly income (no income, <5000 Bangladesh currency Taka [BDT], or  
147  $\geq$ 5000 BDT), financial dependency on the family (classified as dependent or independent),  
148 knowledge about the risks of disease– whether smoking brings the risk of chronic disease (no  
149 or yes), and knowledge about the harmfulness– whether smoking is harmful to other non-  
150 smokers (no or yes). Household's characteristics include education of father (categorized as  
151 below secondary, secondary, or higher secondary and above), education of mother  
152 (categorized as below secondary, secondary, or higher secondary and above), family income  
153 (<15000 BDT, 15000-25000 BDT, or >25000 BDT), current smoking status of father (no or  
154 yes), current smoking status of brothers (no or yes). Additionally, current smoking status of  
155 close friends (no or yes) was considered as explanatory variable, as youths are significantly  
156 influenced by their close friends [28]. The respondent's father, brother and close friends were

157 considered as smokers if they had been cigarette/ bidi smoking for last six months prior to the  
158 survey.

## 159 **Statistical analysis**

160 After descriptive statistics of the study sample, chi-square tests were used to identify  
161 differences in the percentage of smokers by the explanatory variables (detailed above). All  
162 variables significant in chi-square tests at level  $p < 0.20$  were included in regression analysis.  
163 Finally, a binary logistic regression model was used to identify the factors that are influential  
164 in determining the smoking status of the respondents. The statistical significance of all  
165 analysis was set at  $p < 0.05$ .

## 166 **Ethical considerations**

167 The study design and funding for the project titled “Knowledge, awareness and  
168 practices among youth smokers in Trishal Upazila under Mymensingh district: A micro-  
169 survey study” were approved by the Research and Extension Center, Jatiya Kabi Kazi Nazrul  
170 Islam University, Bangladesh. All respondents were asked to provide verbal consent after  
171 being read a document emphasizing voluntary participation in the project. Any identifying  
172 information was removed. As the de-identified data for this study came from secondary  
173 source, this study does not require ethical approval.

## 174 **Results**

175 Table 1 presents the basic characteristics of the study participants. The average age is  
176 18.9 years. Among the participants, 40% are 15-17 years, 28.8% are 18-20 years, and 31.2%  
177 are 21-24 years old. Average year of schooling is 9.6, and only 12.5% of respondents are with  
178 below secondary level of education. Respondents’ fathers are with more years of education  
179 than their mothers (average year of education: father 7.3 years and mother 5.9 years).  
180 Majority of the respondents are students (67%). Although majority (66.8%) has no income,

181 the average monthly income is BDT 4,439. The average monthly income of respondent's  
182 family is BDT 22634, with around half (46%) of family's income in between BDT 15000-  
183 25000. 71.7% of respondents depend on their family for their financial supports while  
184 remaining 28.3% do not depend on their family for their financial supports. 40.3% of  
185 respondents are currently cigarette/ bidi smoking, 57.4% of the respondents' fathers are  
186 currently cigarette/ bidi smoking, 17.7% of respondents' brothers are currently cigarette/ bidi  
187 smoking, and 36.1% of the respondents' close friends are currently cigarette/ bidi smoking.  
188 Overwhelming majority of the respondents believe that smoking brings the risks of chronic  
189 diseases, and smoking is harmful to other non-smokers.

190 **<Table 1 about here>**

191 Table 2 analyzes the bivariate association between cigarette/ bidi smoking status and  
192 socio-demographics, and shows the variation in percentage of smokers by socio-  
193 demographics. A significant association between cigarette/ bidi smokers and age group was  
194 found; percentage of cigarette/ bidi smokers increase with the increase in age ( $p<0.001$ ).  
195 Respondents who are with below secondary education, day labourers, with monthly income  
196 BDT<5,000, with monthly family income BDT>25,000, financially independent from their  
197 family are more likely to smoke cigarette/ bidi than their counterparts. Respondents whose  
198 fathers, brothers and close friends are cigarette/ bidi smokers are also more likely to smoke  
199 cigarette/ bidi than the respondents whose fathers, brothers and close friends are non-  
200 smokers. Respondents who believe that smoking brings the risks of chronic diseases and is  
201 harmful to other non-smokers are less likely to smoke cigarette/ bidi than their counterparts.

202 **<Table 2 about here>**

203 Table 3 shows the results of binary logistic regression model that yields the odds of  
204 being cigarette/ bidi smokers by categories of the explanatory variables. The likelihood of  
205 being cigarette/ bidi smokers increases with the increase in age. The odds of being cigarette/

206 bidi smokers for those in age group 18-20 years is 1.78 times (95% confidence interval: 0.77-  
207 4.11) and for those in age group 21-24 years is 5.54 times (2.25-13.61) than those in age  
208 group 15-17 years. The odds of being cigarette/ bidi smokers for business owner is 0.15 times  
209 (0.03-0.69) than day labourer. Compared to respondents with no income, respondents with  
210 monthly income (either <BDT 5,000 or ≥BDT 5,000) are more likely to smoke cigarette/ bidi.  
211 Respondents coming from higher economic status (i.e. family's monthly income ≥BDT  
212 15,000) have higher odds of being cigarette/ bidi smokers than those coming from lower  
213 economic status (i.e. family's monthly income <BDT 15,000). Respondents whose fathers are  
214 cigarette/ bidi smokers are more likely to smoke cigarette/ bidi than those having non-smoker  
215 fathers; also whose brothers and close friends are cigarette/ bidi smokers are more likely to  
216 smoke cigarette/ bidi than their counterparts. Respondents who believe that smoking is  
217 harmful to other non-smokers are significantly less likely to smoke cigarette/ bidi than their  
218 counterparts.

219 <Table 3 about here>

## 220 Discussion

221 To the best of our knowledge, this is the first study that reveals the determinants of  
222 cigarette/ bidi smoking among youth male in Bangladesh. The small-scale cross-sectional  
223 data exhibit that four in 10 youth male are cigarette/ bidi smokers in Trishal Upazila of  
224 Mymensingh district. The determinants of cigarette/ bidi smoking among youth male include  
225 age, occupation, monthly income, family's monthly income, cigarette/ bidi smoking status of  
226 father, brother and close friends, and knowledge about harmfulness of smoking.

227 Higher age, particularly 21-24 years are associated with higher likelihood of cigarette/  
228 bidi smoking among youth male in the current study. Age is also found as one of the  
229 determinants of smoking among youth in Ethiopia [18,29]. This might be due to the fact that  
230 the possibility of being involved in various risky practices, particularly among youth male,



231 increases with the increase in age. Also, in Bangladesh, older youth male have some cash in  
232 their hands with which they are capable of buying cigarette/ bidi. It is particularly evident in  
233 the study area, where 69% of the respondents have some income.

234 Day labourers have the highest odds of smoking cigarette/ bidi in the current study. In  
235 the United States, blue-collar workers, specifically construction workers in the absence of  
236 their workplace rules against smoking, are more likely to be smokers than white-collar  
237 workers [30]. And, workplace smoking restrictions, mainly smoke-free policies are reported  
238 promising for reducing smokers in Canada [31]. In Bangladesh, while service holders,  
239 businessmen and students need to comply with smoking restrictions at workplaces/ schools,  
240 day labourers face almost no smoking restriction at workplaces, and unemployed youth have  
241 their limitations in expending money on smoking. No smoking restriction at workplaces  
242 could be the possible reason for the highest likelihood of being smokers among day labourers  
243 in the study area. Restricting smoking for day labourers at workplaces may reduce  
244 prospective smokers among youth male in Bangladesh.

245 There is an independent positive association of personal income with smoking among  
246 adolescents aged 14-17 years in six European countries [32]. Economic inequality has also  
247 direct correspondence with tobacco use [33]. Youth male with personal income, compared to  
248 those with no income, have higher likelihood of cigarette/ bidi smoking in the current study,  
249 which is in a line with the previous studies [34,35]. When youth have extra pocket money,  
250 they spend the money for their recreation. And, youth male, particularly with their friends,  
251 consider smoking as a pastime and therefore expend on smoking cigarette/ bidi in  
252 Bangladesh. Providing more valuable options, e.g. recreational football game to the youth  
253 would not only reduce number of smokers but also keep the youth fit and active in  
254 Bangladesh.

255 Consistent with previous literature [36], respondents coming from higher economic  
256 status have higher likelihood of smoking cigarette/ bidi in our study areas. While households  
257 with higher income are able to spend more money on their children, households with lower  
258 income struggle to manage their family expenditure. The youth from higher family income  
259 receive more pocket money than their counterparts, and may expend on smoking cigarette/  
260 bidi.

261 **Paternal smoking, specifically father's smoking** was reported to increase the risk of  
262 youth smoking [37]. The current study also finds higher likelihood of smoking cigarette/ bidi  
263 among youth male whose fathers are smokers. In a similar vein, brother's smoking is found  
264 to increase the risk of youth smoking in the study areas. Smoking among male is found to be  
265 associated with the smoking behaviour of siblings in different settings [38,39]. These findings  
266 indicate that smoking behaviour passes from one generation to another as well as within the  
267 same generation. The possible reason might be that the children who grow up by seeing their  
268 fathers and brothers smoking, those children may try to make a trail at some later points in  
269 time, and may become a regular smoker at their youth stages. Therefore, to prevent smoking  
270 among youth male in a family, the older adults– primarily fathers and male siblings of the  
271 family should stop smoking in Bangladesh.

272 Friend smoking is by far the strongest factor to increase the risk of youth smoking in  
273 different settings [18,29,37,38,40,41]. The current study also exhibits higher likelihood of  
274 smoking cigarette/ bidi among the respondents whose friends are smokers, compared those  
275 with non-smoker friends. Since this study, along with the extant literature, yields the greater  
276 peer influences on youth smoking, we suggest families to pay a great attention to their youth  
277 members to prevent them from smoking. Similar to the findings of the studies [42,43], the  
278 respondents who believe that smoking is harmful to other non-smokers are less likely to  
279 smoke cigarette/ bidi in the study areas. Awareness needs to be created through different

280 channels about deadly hazardous effects of smoking and its harmful consequences not only  
281 for the smokers and their families but also for the nation as a whole. In this regard,  
282 educational institutions and mass media may play an important role.

283 The current study has some limitations. Being a cross-sectional one, this study does  
284 not permit casual association of the explanatory variables with the outcome variable. The data  
285 come from rural areas of Trishal Upazila of Mymensingh district, and thus may not be  
286 generalizable to entire youth male in Bangladesh. Despite the limitations, as the pioneer  
287 study, it demonstrates a detailed analysis of the various socio-demographic determinants of  
288 youth smoking, which is generalizable to rural youth male of Mymensingh district in  
289 Bangladesh.

## 290 **Conclusion**

291 In sum, as the first study, it provides the determinants of cigarette/ bidi smoking  
292 among youth male of the rural areas of Mymensingh district. Based on the above discussion,  
293 **carefully planning** should be made to prevent smoking among youth, as the youth are the  
294 main instruments for future development of the country. Relevant authorities may consider  
295 the following five recommendations in formulating strong enforcement measures along with  
296 revising or redrawing the existing smoking policies to discourage smoking among the youth.  
297 The recommendations are: (i) restricting smoking for day labourers at workplaces, (ii)  
298 providing more valuable options to the youth for pastimes, e.g. recreational football game,  
299 (iii) families to pay due attention to their youth members to prevent them from smoking, (iv)  
300 the older adults of the families– primarily fathers and male siblings stop smoking, and (v)  
301 educational institutions and mass media create awareness about the hazardous effects and  
302 harmful consequences of smoking not only for the smokers and their families but also for the  
303 entire country.

304

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## 310 **Conflict of interest**

311 The author(s) declare no potential conflicts of interest with respect to the research,  
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313

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444 **Table 1: Basic characteristics of the respondents**

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<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age group</b>		
15-17	154	40.0
18-20	111	28.8
21-24	120	31.2
<b>Average age (SD)</b>	<b>18.9 (3.1)</b>	
<b>Education</b>		
Below secondary	48	12.5
Secondary	197	51.1
Higher secondary and above	140	36.4
<b>Average year of schooling (SD)</b>	<b>9.6 (3.3)</b>	
<b>Education of father</b>		
Below secondary	169	43.8
Secondary	108	28.1
Higher secondary and above	108	28.1
<b>Average year of schooling of father (SD)</b>	<b>7.3 (5.4)</b>	
<b>Education of mother</b>		
Below secondary	207	53.8
Secondary	125	32.4
Higher secondary and above	53	13.8
<b>Average year of schooling of mother (SD)</b>	<b>5.9 (4.7)</b>	
<b>Occupation</b>		
Day labourer	20	5.2
Service	20	5.2
Business	65	16.9
Students	258	67.0
Unemployed	22	5.7
<b>Monthly income (in BDT)</b>		
No income	257	66.8
< 5000	21	5.5
≥5000	107	27.7
<b>Average income (SD)</b>	<b>4439 (7877.8)</b>	
<b>Family's monthly income (in BDT)</b>		
< 15000	97	25.2
15000-25000	177	46.0
> 25000	111	28.8
<b>Average monthly income of family (SD)</b>	<b>22634 (12958.1)</b>	
<b>Financially dependent on the family</b>		
Dependent	276	71.7
Independent	109	28.3
<b>Current smoking status</b>		
No	230	59.7
Yes	155	40.3
<b>Current smoking status of father*</b>		
No	164	42.6
Yes	221	57.4
<b>Current smoking status of brother</b>		

No	317	82.3
Yes	68	17.7
<b>Current smoking status of close friend</b>		
No	246	63.9
Yes	139	36.1
<b>Smoking brings the risks of chronic diseases</b>		
No	6	1.6
Yes	379	98.4
<b>Smoking is harmful to other non-smokers</b>		
No	14	3.6
Yes	371	96.4

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**Notes:** BDT: Bangladesh currency – Taka; SD indicates Standard Deviation; \* No mother of the study participants found as smoker.

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**Table 2: Percentage of smokers by socio-demographics**

Variables	Smoker	
	Number	Row percentage
<b>Age group</b>		
15-17	30	19.5
18-20	45	40.5
21-24	80	66.7
<i>p-value</i>	<0.001	
<b>Education</b>		
Below secondary	28	58.3
Secondary	53	26.9
Higher secondary and above	74	52.9
<i>p-value</i>	<0.001	
<b>Education of father</b>		
Below secondary	65	38.5
Secondary	42	38.9
Higher secondary and above	48	44.4
<i>p-value</i>	0.57	
<b>Education of mother</b>		
Below secondary	77	37.2
Secondary	54	43.2
Higher secondary and above	24	45.3
<i>p-value</i>	0.40	
<b>Occupation</b>		
Day labourer	16	80.0
Service	12	60.0
Business	34	52.3
Students	83	32.2
Unemployed	10	45.5
<i>p-value</i>	<0.001	
<b>Monthly income (in BDT)</b>		
No income	79	30.7
< 5000	13	61.9
≥5000	63	58.9
<i>p-value</i>	<0.001	
<b>Family's monthly income (in BDT)</b>		
< 15000	26	26.8
15000-25000	75	42.4
> 25000	54	48.6
<i>p-value</i>	<0.001	
<b>Financially dependent on the family</b>		
Dependent	93	33.7
Independent	62	56.9
<i>p-value</i>	<0.001	
<b>Current smoking status of father</b>		
No	55	33.5
Yes	100	45.2
<i>p-value</i>	0.02	

<b>Current smoking status of brother</b>		
No	114	36.0
Yes	41	60.3
<i>p-value</i>	<0.001	
<b>Current smoking status of close friends</b>		
No	54	22.0
Yes	101	72.7
<i>p-value</i>	<0.001	
<b>Smoking brings the risk of chronic disease</b>		
No	5	83.3
Yes	150	39.6
<i>p-value</i>	0.03	
<b>Smoking is harmful to other non-smokers</b>		
No	11	78.6
Yes	144	38.8
<i>p-value</i>	<0.001	

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454 **Notes:** BDT: Bangladesh currency – Taka. The p-values are of chi-square tests.

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**Table 3: Association of socio-demographics with smoking status**



<b>Variables</b>	<b>Odds Ratio</b>	<b>95% confidence interval</b>
<b>Age group</b>		
15-17®	1.00	-
18-20	1.78	0.77 – 4.11
21-24	5.54***	2.25 – 13.61
<b>Education</b>		
Below secondary®	1.00	-
Secondary	0.44	0.16 – 1.19
Higher secondary and above	0.51	0.17 – 1.53
<b>Occupation</b>		
Day labourer®	1.00	-
Service	0.40	0.06 – 2.54
Business	0.15**	0.03 – 0.69
Students	0.42	0.07 – 2.49
Unemployed	0.20	0.03 – 1.28
<b>Monthly income (in BDT)</b>		
No income®	1.00	-
< 5000	4.92***	1.87 – 12.59
≥5000	3.11	0.56 – 7.27
<b>Family's monthly income (in BDT)</b>		
< 15000®	1.00	-
15000-25000	2.09*	1.01 – 4.34
> 25000	2.77**	1.24 – 6.18
<b>Financially dependent on the family</b>		
Dependent®	1.00	-
Independent	2.62	0.59 – 7.52
<b>Current smoking status of father</b>		
No®	1.00	-
Yes	2.24***	1.25 – 3.98
<b>Current smoking status of brother</b>		
No®	1.00	-
Yes	3.03***	1.46 – 6.29
<b>Current smoking status of close friend</b>		
No®	1.00	-
Yes	10.65***	5.89 – 19.25
<b>Smoking brings the risk of chronic disease</b>		
No®	1.00	-
Yes	0.15	0.01 – 2.54
<b>Smoking is harmful to other non-smokers</b>		
No®	1.00	-
Yes	0.13**	0.03 – 0.70

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**Notes:** BDT: Bangladesh currency – Taka; ®: Reference Category; Level of significance: \*\*\*: p<0.001; \*\*: p<0.01; \*: p<0.05.