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# SMOKING PREVALENCE AMONG DRIVERS OF DHAKA CITY: MEASURING ITS SOCIO-ECONOMIC IMPACT

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***Abstract:*** *Smoking is an increasingly prevalent habit in Bangladesh, particularly among men with low socio-economic status. Tobacco expenditures exacerbate the effects of poverty and cause significant deterioration in living standards among the poor Bangladeshi people. A cross sectional study was carried out from 15th to 26th March, 2013 to determine the prevalence, pattern, socio-economic impact of smoking among bus drivers of Dhaka city. The prevalence of cigarette smoking was 93% and 20% of total income was spent on cigarettes indicating more than twice as much as per capita expenditure on food, clothing, housing, health and education combined, resulting in illiterate, malnourished household members. Though most (32.3%) of the drivers started smoking before involving in driving profession, excessive smoking was promoted by occupational and environmental stress experiencing hectic work schedule. Tobacco can also worsen poverty among users and their families since most of the drivers reported heart disease (26.9%) and other health complications caused by smoking, depriving families of much-needed income and imposing additional costs of health care. Around 70% smokers wished to quit smoking considering its detrimental effect but unknown of quitting strategy. Interventions and preventions by policy makers, public health experts and other stakeholders should be introduced because smoking was more prevalent among bus drivers with detrimental health sequel.*

***Keywords:*** *Cigarette, smoking, bus drivers, low income, environmental stress.*

## Introduction

Smoking is one of the leading causes of premature death particularly in developing countries (Ezzati and Lopez, 2003) counting about 6 million deaths each year expected to reach at 8 million yearly by 2030 (WHO, 2011). Bangladesh is one of 10 countries that make up two-thirds of the world

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population of smoke (Hanifi, Mahmood and Bhuiya, 2010) involving approximately 43% of adults into smoking (Ockene and Miller, 1997). The prevalence of smoking among adult male in Bangladesh was 46.36% in 2009 (World Bank, 2010), where slight increase was observed from 43.3% in 2011 (Sinha DN, et_al, 2011) to 60% in 2013 (M. A. Kabir, et_al, 2013). Worldwide tobacco-attributable deaths were 4.83 million in 2000 (Ezzati and Lopez, 2004), which are projected to reach at 6.4 million in 2015 and 8.3 million in 2030. In the past 10-15 years manufactured cigarettes (Giovino GA, et_al, 2012) consumption has more than doubled (Cohen, 1981). The typical male cigarette smoker spends over five times as much on cigarettes as the per capita expenditure on house rent, 18 times as much as for health, and 20 times as much as for Education (Debra Efroymson,et al, 2001). Smoking of only 5 cigarettes a day in a poor household in Bangladesh might lead to a monthly dietary deficit of 8000 calories (Cohen, 1981). 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 (WHO, 2005). Smoking related-diseases kill one in 10 adults globally increasing the risk for cardiovascular diseases, cancer, and respiratory diseases (Meltzer EO, 1994). Between 80 and 90% of lung cancers are due to smoking (Ockene IS and Miller NH, 1997). Fifteen percent − 1.1 million new cases per year − of all cancer cases are attributed to cigarette smoking (Parkin DM, et_al, 1994), cancer of oral cavity, larynx, bladder, stomach, cervix, liver comprising overall morbidity and mortality (Sherman CB, 1991). Compared with nonsmokers, smoking is estimated to increase the risk of coronary heart disease by 2 to 4 times (Rahman MA, et_al, 2008).

Multiple levels of influence (Turner L, et_al, 2004), from intra-individual factors, such as genetics, demographics, temperament and comorbidities, to social influences, such as families and peers (Flay BR, et_al. (1994) and Piperakis SM, et_al, 2008), societal/cultural levels of influence, including advertising and tobacco-related policies, causing influence on adolescent smoking. Tobacco use is higher among illiterate, low socio-economic class compared to literate, comparatively high class one. 71% of men of the lower socioeconomic class in Bangladesh are smokers. Higher work stress was associated with greater smoking intensity among smokers. Most of the smokers smoke to get rid of stress regarding occupational, economic and social and already get several other benefits from smoking including increased concentration, an added energy 'boost' mental 'strength' to deal with

tough situations, curing boredom and relaxation. Vulnerability to smoking dependence is a function of a high initial sensitivity to nicotine, which produces reinforcing consequences that lead to chronic use. Men who work long hours or in high stress jobs are more likely to smoke. The bus drivers who smoke always keep part of their daily income aside for smoking. Sometimes, they maintain budget at the cost of his/her personal losses, family losses that lead to social losses as a whole. The objective of our study was to evaluate the smoking pattern and prevalence among Bangladeshi bus drivers living a live below standard, considering socio-economic impact on national growth and prosperity.

**Methodology**

A cross-sectional study was carried out from March 15, 2013 to March 26, 2013; among bus drivers attaining their duty from Mohammodpur to Arambag route, Dhaka city, Bangladesh. Total 100 number of bus drivers aged between 18-50 was randomly selected from Tajmohol road, Japan Garden city and Mohammodpur bus stand. Bus drivers of different local buses were requested to cooperate with us to get the interview. All of them (N=100) were interested in taking part in interview. A semi-structured pre-tested questionnaire was formed to collect information on bus driver's socio-economic status including their age, working hour, daily income, smoking habit, expenditure on smoking, agents used by daily consumption, associated disease pattern, cause and effective triggering factors behind their smoking. Data was collected through each interview section. All of the collected data were analyzed by using SPSS v-15.0 program.

**Result and Data Analysis**

This paper represents prevalence, pattern, socio-economic and financial losses of smoking among Dhaka city's bus drivers. After surveying on 100 bus drivers of Dhaka city, Bangladesh and comparing various data we found the following results.

Table 1: Distribution of respondents by smoking habit

| Categories | Frequencies | Percentage (%) |
|---|---|---|
| Smoker | 93 | 93 |
| Nonsmoker | 7 | 7 |
| Total | 100 | 100 |

Table 1 shows the Distribution of respondents by smoking habit. 93% were smoker where only 7% reported to being nonsmoker.

Table 2: Distribution of respondents by age

| Age group | Smoker | Percentage (%) | Non smoker | Percentage (%) |
|---|---|---|---|---|
| 18-25 | 34 | 36.56 | 6 | 85.71 |
| 26-35 | 41 | 44.08 | 1 | 14.28 |
| 36-42 | 10 | 10.75 | 0 | 0 |
| 43-50 | 8 | 8.6 | 0 | 0 |
| Total | 93 | 100 | 7 | 100 |

Table 2 shows the distribution of respondents by age group. The age group of 26-35 years showed the highest frequency of smoking among the current smokers. About 44% smokers were under the age of 26-35. 36.56%, 10.75% and 8.65 were under the age of 18-25, 36-42 and 43-50 respectively. The age group of 18-25 years showed the highest frequency of non-smoking pattern. About 85.71% non-smokers were under the age of 18-25.

Table 3: Distribution of respondents by educational level

| Educational level | smoker | Percentage (%) | Nonsmoker | Percentage (%) |
|---|---|---|---|---|
| Primary | 33 | 35.48 | 2 | 28.57 |
| Secondary | 18 | 19.35 | 5 | 71.42 |
| Illiterate | 42 | 45.16 | 0 | 0 |
| Total | 93 | 100 | 7 | 100 |

Table 3 shows the distribution of respondents by educational level. In the survey, we found that most of the drivers were illiterates, where completion of primary and secondary educational level was reported by 35.5% & 19.35% respectively. 45.16% smokers were illiterate where 35.48% and 19.35% reported to complete their primary and secondary level of education respectively. About 72% nonsmokers reported to complete their secondary level of education. Among nonsmokers group, no one reported as illiterate. It indicates that smoking is more prevalent among illiterate people. Education can promote the awareness among general mass to keep them away from smoking.

Table 4: Smoking initiation by age

| Smoking initiation by age | Frequencies | Percentage |
|---|---|---|
| 13-18 | 40 | 43.01 |
| 19-22 | 36 | 38.71 |
| 23-26 | 17 | 18.28 |
| Total | 93 | 100 |

Table 4 shows the distribution of respondent's smoking initiation by age. All of the cases started their smoking between the age of 13-26(mean 19.24; SD 3.1). Most of the smokers started their smoking age between 13-18. It indicates that most of smokers started their smoking before reaching their adulthood. 38.71% and 18.28% started their smoking age between 19-22 and 23-26 respectively.

Table 5: Distribution of smoking agents used by smokers

| Smoking agent by number | Frequencies | Percentage |
|---|---|---|
| 5-10 | 14 | 15.05 |
| 11-20 | 62 | 66.67 |
| 21-40 | 17 | 18.28 |
| Total | 93 | 100 |

Table 5 shows the distribution of smoking agents used by smokers. Most of the respondents were chain smoker using 20 cigarettes (SD 9.5) per day (5-40) where only one cigarette can cause cancer and other degenerative diseases. 66.67% used around 11-20 cigarettes per day where 5-10 and 21-40 cigarettes were used by 15.05% and 18.28% smokers respectively.

Table 6: Distribution of reasons behind smoking

| Cause of smoking | Frequencies | Percentage |
|---|---|---|
| Habit/pleasure | 41 | 44.1 |
| Relief from tension | 31 | 33.3 |
| Environmental influence | 21 | 22.6 |
| Total | 93 | 100 |

Table 6 shows the distribution of reasons behind smoking by smokers. Most of the smokers smoke due to pleasure or habit (44.1%), on the other hand

33.3 and 22.6% to get relief from tension and influenced by others respectively. Most of the smokers were habituated to smoking therefore were quite unable to quit the habit.

Table 7: Distribution of stressful conditions promoting excessive smoking

| Stressful condition | Frequencies | Percentage |
|---|---|---|
| Traffic jam | 34 | 36.6 |
| Occupational stress | 28 | 30.1 |
| Financial stress | 14 | 15.1 |
| Family crisis | 5 | 5.4 |
| Others | 3 | 3.2 |
| No stress | 9 | 9.7 |
| Total | 93 | 100 |

Table 7 shows the Distribution of stressful conditions promoting excessive smoking. Among all of the stressful condition each of the respondents faces, Traffic jam (36.6%) was being reported as the most stressful event where drivers were supposed to smoke more. In Dhaka city, traffic jam is one of the most common phenomenon which have been faced by bus drivers during their working period. 30.1%, 15.1%, 5.4% were reported to promote excessive smoking due to occupational stress, financial condition and family crisis respectively. Around 9.7% reported to have no stressful conditions promoting their excessive smoking.

Table 8: Distribution of diseases among smokers

| Diseases | Frequencies | Percentage |
|---|---|---|
| Chest pain | 21 | 22.6 |
| Gastric | 22 | 23.7 |
| Heart disease | 25 | 26.9 |
| Pulmonary disease | 4 | 4.3 |
| Others | 3 | 3.2 |
| No disease | 18 | 19.4 |
| Total | 93 | 100 |

Table 8 shows the distribution of diseases among smokers. Prevalence of

heart diseases among smoker was highest with 26.9%, where 22.6% and 22.7 were reported having chest pain and gastric respectively. Around 20% reported to have no diseases caused by smoking.

Table 9: Distribution of respondents by knowledge about negative health effects of smoking (N=100)

| Adverse effect of smoking | Percentage (%) |
|---|---|
| Cancer | 50 |
| Cardio Vascular Disease | 18 |
| Pulmonary Disease | 21 |
| Ulcer | 5 |
| Others | 6 |
| Total | 100 |

Table 9 shows the Distribution of respondents by knowledge about negative health effects of smoking. 50% smokers reported that lung cancer and other form of cancer are associated with smoking, 18% and 21% reported also that CVD and pulmonary diseases are caused by smoking.

Most of the drivers reported to possess in driving profession for more than 8 years (mean value 8.96; SD 7.2). Their smoking habit was parallel with their driving profession. It was observed that involving in driving profession facilitates the smoking initiation as well as continuation. The mean income value was reported as 477.50 BDT (300-700; SD 104.5) & mean working hours per day was 17.95 (17-19; SD .56). Due to have long work schedule, most of the time they used to smoke as stress reliever. 20% of their income was spending for smoking purposes showed economic burden on low-income driver society. The bus drivers who smoke always keep their daily income aside for smoking. Sometimes, they maintain budget at the cost of his/her personal losses, family losses that lead social losses as a whole. All the bus drivers were not only well known about the risk for the diseases caused by smoking but also understood a greater amount of social and financial losses for buying cigarettes. Many of them (68.8%) wanted to stop smoking. But the cruel truth is that they do not know how to stop this.

**Discussion**

Multiple levels of influence from intra-individual factors, such as genetics, demographics, temperament and comorbidities, to social influences, such as families and peers , societal/cultural levels of influence, including advertising and tobacco-related policies, causing influence on adolescent smoking. In our survey on 100 bus drivers of Dhaka city, we found that 93% were smokers where only 7% reported to being nonsmoker. It was reported by most of the drivers that they started their smoking before the age of 15(13-26). It indicates most of them started their smoking before reaching adulthood. The age group of 26-35 years showed the highest frequency of smoking among the current smoker. Most of the drivers (45.2%) were illiterates, where completion of primary and secondary educational level was reported by 35.5% and 19.35% respectively. It shows that lack of education can facilitate smoking habit among drivers. They started smoking either for pleasure or environmental influence, but with time it has been turned into a habit. Some reported to have smoking wish to reduce tension or work pressure. Most of the drivers reported to use 20 cigarettes per day on an average where only one cigarette can cause several diseases. It was observed that involving in driving profession facilitates the smoking initiation as well as continuation. Most of the driver started their smoking with the time period of their driving profession. 20% of their income was spending for smoking purposes showed economic burden on low-income driver society. The typical male cigarette smoker spends over five times as much on cigarettes as the per capita expenditure on house rent, 18 times as much as for health, and 20 times as much as for Education. It facilitates the poverty among low income society. Stress due to unavoidable traffic jam in Dhaka city and other occupational pressure, promotes excessive smoking behavior among drivers though the day long. Most of the drivers reported to have different types of diseases caused by smoking where heart disease and chest pain were prevalent. It is hard on the heart, but the fact is, smoking creates multitude diseases that ultimately lead to disability or death. Most of the drivers were well known about the detrimental health effect of smoking where most of them wanted to quit smoking, but they did not find any suitable strategy.

**Recommendations**

1. Smoking is more prevalent among illiterate people. So education among general mass should be distributed by both government and non government enforce.

2. Peer influence is considered as a predictor for the smoking initiation. So parents should be careful about the environment in which their child posses.
3. Tax should be enforced on smoking agents for both importation and purchase.
4. Government should take some steps to stop smoking among public place especially on public vehicles.

## Conclusion

Cigarette smoking is the leading cause of preventable death and a major public health concern reducing life expectancy by seven to eight years. Regular smoking halts the onset of withdrawal symptoms, creating a psychological link between cigarettes and feeling good thus people are supposed to stick on smoking. Expenditure on tobacco, particularly cigarettes, represents a major burden for impoverished Bangladeshis. Arguably having greater stresses, financial incompetence, lack of educational potentiality, people of lower class are more addicted to cigarette smoking compared to rich. Most of the bus drivers in our country are not able to support their children's education, living costs, shelter and nutrition though they maintain their smoking costs trapped in a vicious circle of poverty. By monitoring tobacco use and prevention policies, protecting people from tobacco use, offering help to quit tobacco use, warning about the dangers of tobacco, enforcing bans on tobacco advertising, promotion and sponsorship, raising taxes on tobacco, prevalence of smoking would be controlled.

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