Socio-demographic Patterns, Behavioural Patterns, and Predominant Causes of Smoking Tobacco among Construction Workers: A Case Study of Savar, Dhaka, Bangladesh

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ABSTRACT

The socio-demographic patterns, behavioural patterns, and predominant causes of smoking tobacco among construction workers were explored using data from Savar, Dhaka, Bangladesh construction sites. A mixed questionnaire based on the basic socio-demographic and behavioural patterns such as sex, age, education, marital status, average monthly income, family size etc. and predominant causes of smoking such as addiction/habit, peer pressure, personal/family/ occupational stress relief etc. was prepared and presented to the consenting study respondents (n=110) at Savar, Dhaka, Bangladesh. The patterns and causes were selected based on the previous literature review. Also, a Focus Group Discussion (FGD) was conducted with 11 consenting participants. The resultant data was then analysed using the OpenEpi v3.01 software (CDC, USA).Chi-square tests and logistic regression analysis (OR and 95% CI)were conducted using the software. Preliminary analysis revealed that the overall smoking prevalence in the study sample was 63.63% (n = 70).The two most significant causes of smoking in the study sample were an addiction to smoking (44.29%) and peer pressure (24.29%). Through a review of the findings of this study, it can be ascertained thatthere is a high prevalence of smoking among the construction workers of Savar, Dhaka, and behavioural patterns of smoking are associated with critical socio-demographic factors. Findings suggest the need for control on the easy availability oftobacco and intervention policies such as a ban on tobacco smoking in public places, especially construction sites, imposing of high tax and surcharge on tobacco products etc., aimed at reducing tobacco use among the construction workers of Savar, Dhaka.

KEYWORDS: Savar, Tobacco, Smoking-patterns, Causes, Construction Workers.

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INTRODUCTION

Tobacco smoking is a significant cause of concern for health and environment-related issues. Tobacco is related to over 8 million deaths per year worldwide, among which more than 7 million are directly related to tobacco consumption, while 1.2 million are related to passive (second-hand) smoking. More than 80% of the world's 1.3 billion tobacco consumers live in low and middle-income nations, where the issue of tobacco-related sickness and mortality is the greatest. Cigarette usage leads to poverty by shifting household expenditures away from necessities like food and housing and toward tobacco (WHO, 2022). Cigarette smoking is the most common method of tobacco consumption. Historically, blue-collar job holders, especially construction workers, have been prone to tobacco smoking worldwide (Stillman et al., 1986). Bangladesh is also no different in this regard (Rahaman & Rahaman, 2021).

Problem Statement

This research aims to investigate the socio-demographic patterns, behavioural patterns, and predominant causes of smoking tobacco among construction workers in Savar, Dhaka.

Research Objectives

1. To identify the patterns of smoking among construction workers based on their socio-demographic indicators;

2. To find out the predominant causes and factors leading to smoking among the construction workers

Research on smoking, in general, has been carried out in Bangladesh over the years. However, exclusive research on smoking among construction workers has yet to be carried out in Bangladesh, and this research will probably be the first one to address the issue.

Limitations

The time constraint of the researcher has been the single most challenging aspect of this study. As a participant of the 73rd FTC, the researcher needed more time to visit different construction sites across Savar and

collect data. Due to this reason, a standardised sample size based on statistics could not be formed and questioned. This study only focuses on the construction workers of Savar, Dhaka. Although Bangladesh is a homogeneous country in terms of socio-demographic patterns, the findings of this study cannot stand for all of Bangladesh for superficial reasons. Recall bias of the respondents is also a limitation of this research.

Scope

The scope of this research is limited to smoking tobacco, i.e., bidi and cigarette only. Smoking/consumption of weed, marijuana, gul, jarda etc., have not been considered in this research.

LITERATURE REVIEW

Tobacco has been linked as a primary cause of the non-communicable disease (NCD). Smoking is a known risk factor for several illnesses, including lung cancer, heart disease, and lung disease. Children's bronchial asthma and upper respiratory tract infections (URTIs) have been linked to passive smoking. Tobacco use is widespread worldwide, particularly in poorer nations like Bangladesh, despite the health dangers.

The overall prevalence of smoking among blue-collar workers was higher (48.4%) than the national average (39%) (Rachiotis & et al., 2009). The smoking prevalence among blue-collar workers was more remarkable than most other professionals(Gaudette et al., 1998). The rate is even higher for construction,transportation and mining (43%) workers. The ratio of smoking male and female workers was almost 1(29%):1(25%). Men (40%) were found to be heavy smokers more than women (26%). Male-dominated workplaces (49%) attributed significantly to the prevalence of smoking than female-dominated workplaces (26%). They also observed that the frequency and prevalence of smoking get lower with higher occupational status and promotion.

According to (Nizami et al., 2011), theaddictive nature of nicotine, peer pressure, domestic stress relief, occupational stress relief, availability, social acceptance of smoking, media influence, price etc., are the primary causes of smoking among the general population.

The World Health Organisation (WHO) has conducted several comprehensive types of research on tobacco consumption from 2007 onwards worldwide through the publication of the Global Adult Tobacco Survey (GATS), Global Youth Tobacco Survey (GYTS, Global Tobacco Surveillance System (GTSS) and other reports. In Bangladesh, the most recent publication was 2017 the GATS report. According to the report(WHO, 2017), 35.3% of the total population used tobacco; 46% were men, and 25.2% were women. 18% of the total population smoked tobacco (cigarette and bidi).Almost 39% of the adult population were exposed to second-hand smoke at home, 42.7% at enclosed (indoor) workplaces, and 44% at public transport. The national average monthly expenditure on a cigarette was BDT 1077.7 and bidi BDT 341.9.In these reports, Bangladesh's prevalence and socio-demographic smoking patterns have been objectively identified. Nevertheless, specific research focused only on blue-collar/construction workers had not been carried out by them.

METHODOLOGY

The location area of the research comprises different ongoing construction sites at Savar, Dhaka. The primary data has been collected from the workers residing at the construction sites. Due to the nature of the research topic, both quantitative and qualitative data have been collected. For this purpose, astructured questionnaire in Bengali has been compiled, keepingquantitative and qualitative question data sets (annexure-1).The majority of the questions were quantitative to find out the patterns and causes of smoking and the rest were qualitative to find out the reasons behind not being able to quit smoking and possible actions that can be taken to counter the issue. The collected data has been analysed to deduce the socio-demographic patterns and predominant causes of smoking.Due to time constraints, the sample size was kept at 110, and the random sampling method has been applied.

A Focus Group Discussion (FGD) was conducted with 11 active participants. The author worked as the moderator, and a volunteer from the engineer's office was asked to take the role of note-taker. The participation of the respondents was spontaneous. A few aspects left out from the questionnaire were discussed here, like the 'culture/positive

environment' of smoking in construction sites, the use of cigarettes and the decline of bidi in the urban areas of Bangladesh in recent years. Beyond these, the; economic and financial cost of smoking, the environmental impacts of smoking especially discarded cigarette filters etc.

The questionnaire was developed into two parts, i.e., Part I, which contained the respondent's personal information like name, father's name, mother smothers name, present address, and permanent address. Here the respondents were duly notified that their personal information would be kept confidential and not used for any other purpose except research. Part II containedthe socio-demographic patterns, behavioural patterns, and predominant causes of smoking tobacco-related questions.The socio-demographic patterns included sex, age, education, marital status, specific field/speciality of occupation, average monthly income, family size etc. Then some general questions related to smoking were included, like, average smoking frequency, spending on smoking, smokers inside the family, initiation age of smoking etc. Lastly, the specific question on the general and predominant causes of smoking was included.Provision for some open-ended questions was also kept.

FINDINGS/RESULTS

Out of the 125 approached individuals, 112 gave their consent to participate in the questionnaire survey. The response rate was 89.6%. Two of those 112 responses were discarded due to incomplete data; hence, only 110 were reported in this study. Table 1 represents the socio-demographic patterns of the study sample (n=110). The mean age for the study respondents was 26.57 years (SD = 11.49). Table 2 represents the behavioural patterns of the study sample (n=70). Table 3 represents the predominant causes of smoking in the study sample (n=70).

Table 1: *Socio-DemographicPatterns of Smoking Tobacco among Construction Workers in Savar, Dhaka, Bangladesh (n=110)*

Characteristic	Frequency N	Present Smokers n	(%)	Non-smokers n	(%)	Odds Ratio (OR)	95% C.I.	Chi-square value (χ2), Degree of freedom (df), Value of P (P)
Gender								χ2: 28.98, df=1, P<0.001
Male (ref)	93	69	74.19	24	25.81	1.00	---	
Female	17	1	5.88	16	94.12	0.022**	0.002-0.174	
Marital Status								χ2: 7.541, df=2, P<0.05
Married (ref)	54	41	75.93	13	24.07	1.00	---	
Unmarried	38	21	55.26	17	44.74	0.39*	0.32-0.46	
Others	18	8	44.44	10	55.56	0.25*	0.21-0.29	
Age								χ2: 5.008, df=2, P>0.05
<18 (ref)	14	6	42.86	8	57.14	1.00	---	
18~30	52	38	73.08	14	26.92	3.62***	1.93-6.79	
>30	44	26	59.09	18	40.91	1.93***	1.62-2.30	
Educational Level								χ2: 2.799, df=3, P>0.05
No education (ref)	32	23	71.88	9	28.13	1.00	---	
Primary	48	31	64.58	17	35.42	0.71***	0.38-1.33	
Secondary	19	11	57.89	8	42.11	0.54***	0.45-0.64	
Higher Secondary and above	11	5	45.45	6	54.55	0.33***	0.18-0.62	
Gross Avg. Monthly Income (BDT)								χ2: 2.960, df=2, P>0.05
<10000 (ref)	32	23	71.88	9	28.13	1.00	---	
10000~20000	61	39	63.93	22	36.07	0.69***	0.37-1.29	
>20000	17	8	47.06	9	52.94	0.35***	0.29-0.42	
No. of Family Members								χ2: 16.25, df=2, P<0.001
<4 (ref)	37	14	37.84	23	62.16	1.00	---	
4~6	51	40	78.43	11	21.57	5.97*	3.18-11.20	
>6	22	16	72.73	6	27.27	4.38*	3.68-5.22	

*P<0.05;   **P<0.001;   ***P>0.05;   ref: reference

Table 2: *Behavioural Patterns of Smoking Tobacco among Construction Workers in Savar, Dhaka, Bangladesh (n=70)*

Characteristic	Present Smokers n	(%)
Smoking instrument		
Bidi	6	8.57
Cigarette	64	91.43
Age at initiation of tobacco use (years)		
<18	38	54.29
18~20	24	34.29
>20	8	11.43
Daily tobacco intake per person (n)		
<10	39	55.71
10~20	22	31.43
>20	9	12.86

Characteristic	Present Smokers	
	n	(%)
Daily avg. Spending on smoking per intake per person (BDT)		
<10	53	75.71
10~15	13	18.57
>15	4	5.71
Monthly avg. Spending on smoking per intake per person (BDT)		
<1000	39	55.71
1000~1500	24	34.29
>1500	7	10.00
Previous smoker in the family		
Yes	29	41.43
No	41	58.57
Occurrences of smoking in public places (knowingly/unknowingly)		
Yes	70	100.00
No	0	0.00
Occurrences of fines/penalties for smoking in a public place		
Yes	0	0.00
No	70	100.00
Preferred/favourable place for smoking		
Home	23	32.86
Workplace (construction site)	38	54.29
Other	9	12.86
Knowledge about second-hand/passive smoking		
Yes	17	24.29
No	53	75.71
Perception about the impact of smoking on health, environment etc.		
Positive impact	0	0.00
Negative impact	68	97.14
Zero impact	0	0.00
Not sure about the impact	2	2.86
Knowledge about the specific impacts		
High blood pressure	5	7.14
Metabolism	11	15.71
Heart diseases	17	24.29
Stroke	3	4.29
Cancer	16	22.86
Kidney diseases	6	8.57
Pulmonary diseases	11	15.71
Environmental pollution	1	1.43
Interest in quitting smoking		
Yes	52	74.29
No	3	4.29
Not Sure	15	21.43
Interest in quitting smoking		
Yes	52	74.29
No	3	4.29
Not Sure	15	21.43

Characteristic	Present Smokers	
	n	(%)
The previous occurrence of quitting smoking		
Yes	37	52.86
No	33	47.14
Reasons behind coming back to smoking again		
Addiction/habit	32	45.71
Peer pressure (family/friend/colleague)	12	17.14
Personal/family stress relief	8	11.43
Occupational stress relief	5	7.14
Positive atmosphere for smoking at construction sites	11	15.71
Others	2	2.86

Table 3: *Predominant Causes of Smoking Tobacco among Construction Workers in Savar, Dhaka, Bangladesh (n=70)*

Characteristic	Present Smokers	
	n	(%)
The factor behind first-time smoking		
Self-interest/curiosity	43	58.33
Peer pressure (family/friend/colleague etc.)	34	41.67
Others		
Significant causes of present smoking		
Addiction/habit	31	44.29
Peer pressure (family/friend/colleague)	17	24.29
Personal/family stress relief	5	7.14
Occupational stress relief	6	8.57
Positive atmosphere for smoking at construction sites	8	11.43
Others	3	4.29

DISCUSSION

The socio-demographic patterns of the study sample (n=110), as represented in the table-1, revealed that, unequivocally, female participants were the least predominant smokers of the sample group (5.88%, OR=0.022, 95% CI=0.002-0.174). Lower educational levels indicated a higher prevalence in the smoking group. Participants with an education level of higher secondary level and above were the least dominant smokers (71.88%, OR=0.33, 95% CI=0.18-0.62). The smoking prevalence was unrelated to the study sample's age ($\chi2$: 5.008, df=2, P>0.05).The prevalence of smoking was not found to be related to the average monthly income of the participants of the study sample ($\chi2$: 2.960, df=2, P>0.05).Participants with a family size of 4~6 (78.43%,

OR=5.97, 95% CI=3.18-11.20) and with a family size >6 (72.73%, OR=4.38, 95% CI=3.68-5.22) were the least dominant smokers among the study sample.

The behavioural patterns of smoking of the study sample (n=70), as represented in table-2, revealed that91.43% of the present smokers preferred cigarettes over bidi (8.57%).

The average age of initiation of smoking was found to be 17.84 years (SD= 3.29). Most smokers (75.71%) smoked less than ten cigarettes per day. The average expenditure on smoking was BDT 978.62 (SD= 114.78), which is lower than the national average. 41.43% of the study sample responded that they had smokers within their family. Unsurprisingly, 100% of the participants acknowledged smoking in public places, and none (0%) of them were fined by the authority. Several participants preferred their workplace (construction site) (54.29%) and other places, e.g., tea stalls, open spaces, roads etc. (12.86%), to their homes (32.86) as the favourite place for smoking. This data supports the perception of a positive environment for smoking in public. Most participants (75.71%) were unaware of passive smoking and its adverse impact on the environment and non-smokers. About 97.14% of respondents were aware of the negative impact of smoking on health and the environment. There was a mixed response from the respondents about the specific impacts of smoking, e.g. high blood pressure, metabolism, heart diseases, stroke, cancer, kidney diseases, pulmonary diseases, environmental pollution etc. The majority of the participants (74.29%) showed their interest in quitting smoking. 52.86% of the present smokers have tried to quit smoking in the past. The three most significant reasons for coming back to smoking among the quitters were addiction/habit to smoking (45.71%), peer pressure (17.14%), and a positive atmosphere for smoking at construction sites (15.71%).

The predominant causes of smoking in the study sample (n=70), as represented in table-3, revealed that the two most contributing factors influencing persistent smoking among the study sample, according to a review of this research, are addiction/habit to smoking (44.29%), and peer pressure (24.29%). Most smokers start when they are young and keep smoking after that. Middle-aged smokers may attribute their habit to

domestic/occupational stress or the addictive nature of nicotine, but curiosity (58.33%) and peer pressure (41.67%) were the primary motivating factors for them to start smoking.

The FGD participants shared their opinion regarding the 'culture/positive environment' of smoking in construction sites, the rise of cigarette and decline of bidi usage in the urban areas of Bangladesh in recent years, the economic and financial cost of smoking, the environmental impacts of smoking especially discarded cigarette filters, the general factors responsible for the promotion of smoking, and possible countermeasures to tackle the prevailing issue. It was revealed that the easy availability of cigarettes and bidi in most places of Bangladesh. Almost zero restrictions on smoking in public places and construction areas, and social acceptance of smoking in public places, especially construction sites. The general perception of construction workers that smoking is much less risky to their health than their workplace hazards were the significant factors responsible for promoting smoking among construction workers. These factors help to create a 'culture/positive environment' of smoking in construction sites. in the urban areas of Bangladesh, such as Savar, therise of cigarettes and decline of bidi usage can be seen in table 2. The FGD participants attributed this phenomenon to the fact that smoking cigarette is much more socially appealing as it represents the higher financial status of the smoker.

Most of the FGD participants are not aware of the negative environmental impacts of smoking. Most of them are unaware of the term 'second-hand/passive smoking and its adverse effects on non-smokers. Their perception of cigarette filters is that they are made up of paper and rigid foam only, which are not detrimental to the environment. Almost 60% of the FGD participants expressed their intention to quit smoking.

CONCLUSION

The easy availability of tobacco products is a critical obstacle to controlling tobacco smoking. A robust and systematic ban on the selling of cigarettes in public places is a must to control smoking. Also, high taxes and surcharges should be applied to tobacco products. Ban on smoking in public places and especially workplaces must be ensured. The adverse impact of cigarettes, especially cigarette filters and leftovers, must also be considered and addressed. An awareness campaign can be a solution to the issue. Future research with a higher sample sizecan be

done to check the consistency of the presented data, and possible links between tobacco smoking and health hazards can be investigated.

Ethical Consideration

The respondents have been duly informed about the research, and their consent has been taken prior to acquiring the responses. They have also been informed and ensured that personal information is not used for purposes other than research. Also, respect for the anonymity, confidentiality, and privacy of the respondents/participants has been ensured (annexure-1).

ACKNOWLEDGEMENT

CONFLICT OF INTEREST

There is no conflict of interest.

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