Smoking Behavior and Road Traffic Accidents: An Assessment of the Effectiveness of Tobacco Control Law in Bangladesh

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Abstract: (1) Background: As a common problem, Road Traffic Accidents (RTAs) is vastly experiencing by the present world and which is severe in Bangladesh. Nowadays the road traffic accidents have occurred by the tobacco consumption habits where mostly tobacco control law is avoided in Bangladesh. The study aims to investigate the effects of tobacco control law on road traffic accidents in Bangladesh. (2) Methods: This cross-sectional study included 424 questionnaire surveys with drivers (bus and truck) and 10 KIIs. Chi-squared tests were used to measure differences between various parameters (related to tobacco control law and RTAs), while logistic regression models were used to determine the relationship among tobacco control law, RTA risk factors and socio-demographic features. (3) Results: This study result shows 75.9% of respondents are tobacco users where 76.4% have knowledge about tobacco control law. About 93.4% know that smoking in public transports is strongly prohibited by the law where 80.7% of them abide by the tobacco control law daily. Therefore, about 64.6% of respondents were involved in RTAs. A statistically significant association was found between RTAs and knowledge of drivers about tobacco control law (p>0.013) and having knowledge on "smoking in public transports is prohibited by the law" (OR=2.945, p=0.016) is also strongly associated with road traffic accidents. (4) Conclusion: A vast majority of the heavy vehicle drivers are well known about tobacco control law and they are obliged to the law in public transports with satisfactory level.

Keywords: Tobacco, Consumption, Control Law, Road Traffic Accidents, Bangladesh

1. Introduction

Tobacco use remains a public health problem, with 8.3 million deaths worldwide due to tobacco-related causes expected in 2030 [1]. It also imposes a significant financial burden on those who consume it as well as the health-care system [2]. On February 27, 2005, Bangladesh signed the WHO Framework Convention on Tobacco Control.

According to the law, "public transportation" includes vehicles, buses, trains, trams, ships, launches, and other types of mechanized public transportation, aircraft, and any other mode of transportation that the government determines or declares by announcement in the Government Gazette. According to the rule, certain means of transportation shall have to be smoke-free [3]. However, smoking in public transportation has recently increased and has become unbearable to a certain extent. The drivers and their associates deliberately smoke cigarettes while traveling, causing problems for the passengers. This is a common occurrence in the capital's public transportation systems. Smoking is now banned in both public spaces and public transportation as a result of the revised tobacco control bill. The prohibition was put into effect just for public health. However, in the overwhelming majority of cases, the law is ignored. In recent years, smoking in public transportation has been a widespread problem [4].

In Bangladesh, road traffic deaths and serious injuries are a frequent occurrence. Bangladesh has a very high fatality rate from traffic accidents, with official estimates showing that more than 60 people are killed for every 10,000 motor vehicles. Every day, approximately eight people are killed in traffic crashes. True fatality rates are expected to be much higher [5]. According to one survey, human action is responsible for 60% of all traffic deaths (23% due to excessive speed, 12% wrong passing, 15% drivers inattention, 8% sudden defects, 14% blown tire, 9% due to the loss of control, 1% vehicle rollover, 9% two-vehicle collisions, 1% due to weather condition and 2% for other reasons) [6]. They have a greater accident rate than any other age group, which includes not just minor collisions but also collisions that result in injury or death [7]. The high crash rates of young and beginner drivers were largely due to immaturity, a lack of training, and lifestyles aligned with their age and gender. Then, as now, smoking is the leading preventable cause of death worldwide [8]. The prevalence of smoking among the adult male in Bangladesh was 46.36% in 2009 where a slight increase was observed from 43.3% in 2011 to 60.0% in 2013 [9-11]. Bangladesh is one of the ten countries that account for two-thirds of the world's smokers, with nearly 43.0% of adults smoking [12].

It was discovered that the average prevalence of smoking among bus drivers was 93%, and that 20% of their daily earnings were spent on smoking. Though the majority (32.3%) of drivers began smoking prior to entering the driving trade, heavy smoking was exacerbated by occupational and environmental stress associated with a hectic work schedule [13]. In Bangladesh, bus drivers who smoke still set aside a portion of their regular earnings for smoking. Occasionally, they manage budgets at the expense of their own expenses, family losses, and member deaths. About 50.0% of deaths from RTI occur in young adults aged 15 to 44 years. [14]. A study explored the impact of distraction caused by smoking activities while using a car and compared it to the findings of a study on driving distraction caused by cell phones without voice equipment. The average amount of time smokers spend distracted while driving is about 12 seconds. This equates to covering a distance of 160 meters at a pace of 50 kilometers per hour. This finding implies that cigarette smoking poses a greater danger to road safety than cell phone use [15].

Mainly this study is about the heavy vehicle drivers' perception, knowledge, and attitudes towards road traffic accidents and effects of tobacco control law on road traffic accidents in Bangladesh. Although RTI is a major health problem in itself, combined with tobacco consumption appears to be more alarming from a preventive standpoint. Despite its implication in disabilities and deaths, the prevalence of smoking consumption is on the increase and the trend is worrying among adults. Its relationship with accidents; a major cause of morbidity and death, has received little attention. Therefore, the current study aims to investigate the main effects of tobacco control law on heavy vehicle road traffic accidents in order to provide a holistic picture of the relationship between driver tobacco consumption habits, obligation to tobacco control law and road traffic accidents in Bangladesh.

2. Materials and Methods

2.1. Study Design, Area and Period

The cross-sectional study was conducted by using a variety of methods to ascertain the effects of tobacco control law on RTAs involving heavy vehicle drivers over nine months in different terminals (Bus Terminal: *Mohakhali, Gabtoli*, and *Jatrabari*; Truck Terminals: *Tejgaon, Aminbazar*, and *Doyagonj*) of the Dhaka city in Bangladesh.

2.2. Study Population

All the heavy vehicle drivers (bus and truck), leaders and representatives of various associations, i.e. bus-truck owners' associations, laborer's associations, transport officials and media personalities at the time of the survey and interview were enrolled.

2.3. Sample Size and Sampling Technique

For the quantitative survey, the sample size was determined by using the following formula.

$$n=z^2pq/d^2$$

Where,
n=desired sample size
z=1.96 (95% confidence interval)
p=Prevalence of tobacco control law related to RTAs, which assumed unknown and considered as 0.50
q=1-p
d=5%=0.05
$=(1.96)^2 (0.5) (0.5)/ (0.05)^2$
=384+10% non-response=424
A total 424 samples were equally selected from different bus-truck terminals (bus drivers 212 and truck drivers 212). A systemic sampling technique was used to reach the target

samples and covered as samples (424 respondents) under the total questionnaire survey in face-to-face interviews.

2.4. Data Collection

To get a complete picture of the smoking behavior of the heavy vehicle drivers, two data collection methods (semi-structured questionnaire survey and key informant interviews (KII) were adopted. The 10 KIIs were conducted with bus drivers (2), truck drivers (2), NGO workers (2), media persons (2), and policy activists (2). A total of 424 semi-structured questionnaire surveys were conducted with heavy vehicle bus and truck drivers to get clear understanding the relationship between smoking behavior and RTAs in Bangladesh. The face-to-face interview technique was used to collect information from the respondents.

2.5. Validation

A total of 20% of interviews were checked by co-listening to the interview in progress, and interviews were terminated if a person appeared to answer at random or announced they were not involved or too exhausted to proceed with the interview. Only questionnaires that were fully filled out were used in the study. Both questionnaires were reviewed until a completely authenticated dataset was passed on to our team for interpretation and distribution of findings.

2.6. Questionnaire

The questionnaire had 25 questions (both closed-ended and open-ended) and took about 30 minutes per participant to complete. As seen in Table 1, it was divided into four parts.

Table 1. Description of the Study's Questionnaire.

Section	Theme	Participants
1	Socio-economic background, driving status, period and hours	Bus and Truck drivers
2	Tobacco consumption status by the drivers	Bus and Truck drivers
3	Road traffic accidents, risk factors for occurring accidents and driving behavior, knowledge and perception on the traffic law	All participants with a focus on bus and truck drivers
4	Association among road traffic accidents with smoking while driving and knowledge of divers on the traffic law	All participants

2.7. Statistical Analysis

After completing the data collection, a data entry operator was engaged to perform the data entry and was trained to inform all about the coded answers, multiple response answers, etc. After taking the data file from the data entry team all the data were rechecked to ensure the accuracy of the data entry. Analysis was performed using the calculated weights as the frequency variable. For categorical variables, differences between different parameters (related to tobacco control law and RTAs) were assessed with Non-parametric Pearson's Chi-square (χ^2) test. The Spearman correlation coefficient was used to evaluate associations between behavioral variables. Results are focused on differences between parameters (related to tobacco control law and RTAs) and demographic characteristics are presented as frequencies or percentages for categorical variables. Logistic regression models were performed looking into association between tobacco control law, RTAs and socio-demographic characteristics. The initial models included association among road traffic accidents with smoking while driving and knowledge of divers on the traffic law as well as all variables deemed statistically significant in the univariate analyses. Statistical significance was set at $p<0.05$. Analysis was performed by available latest version of Statistical Package for Social Sciences (SPSS version 25.0; IBM Corp., Armonk, NY: USA) and MS Excel.

2.8. Ethical Implications

During interviews, a rapport was built up with the interviewee and assurance were given to them that the collected information would be kept secret and used only for research purpose. Ethical permission to carry out the study was taken from ethical clearance from Bangladesh Medical Research Council.

3. Results

3.1. Quantitative Findings

It is evident from Table 2 that on average (±SD) respondents are 35.6 (±9.7) years of age. Exactly 50% were in 30-40 and above 40 age groups (23.1%). The religious affiliation of the respondents reveals that 96.7% of respondents are Muslim. It also shows the educational levels of the respondents where 39.2% had education up to primary level, 30% up to School Secondary Certificate (SSC), 8.7% SSC, and above while 17.5% had no formal education. The overwhelming majority 85.4% was married followed by unmarried 14.2% and widows are 0.5%. Here, 53.1% of respondents were from nuclear families and had ≥5 family members 55.4%. The average (±SD) number of family members per family was found as 4.8 (±1.4). It also demonstrates the respondents' personal and family incomes. Around 55.7% of respondents had BDT 10001-20000 monthly income and the mean (±SD) monthly personal income and family income were BD 21,625.0 (±8,744.8) and 26,322.0 (±14462.5) respectively.

Table 2. *Socio-economic Background of the Respondents.*

Variable	Number n=424	Percentage
Age group		
<30	114	26.9
30-40	212	50.0
40+	98	23.1
Mean±SD	35.6±9.7	
Religion		
Islam	410	96.7
Hindu	14	3.3
Education level		
No formal education	74	17.5
Up to Primary	166	39.2
Up to SSC	147	34.7
SSC & above	37	8.7
Marital status		
Married	362	85.3
Unmarried	60	14.2
Widower	2	0.5
Family Type		
Nuclear Family	225	53.1
Joint Family	199	46.9
Family Member		
≤4	189	44.6
≥5	235	55.4
Mean±SD	4.8±1.4	
Personal income (monthly) (BDT)		
≤ 10,000	28	6.6
10,001 - 20,000	236	55.7
20,001 - 30,000	127	30.0
30,000+	33	7.8
Mean±SD	21,625.0±8,744.8	
Total family income (monthly) (BDT)		
≤ 10,000	26	6.1
10,001 - 20,000	191	45.0
20,001 - 30,000	115	27.1
30,000+	92	21.7
Mean±SD	26,322.0±14,462.5	

Table 3. *Respondent's Driving Status, Period and Hours.*

Variable	Number n=424	Percentage
Duty period of driving		
Day shift	154	36.3
Night shift	47	11.1
Both shift	177	41.7
No specific shift	46	10.8
Duration of driving hours per day (in hours)		
≤8	116	27.4
9-12	196	46.2
12+	112	26.4
Mean±SD	11.3±3.3	
Driving without proper rest break (in hours)		
≤5	131	30.9
4	216	50.9
≥5	77	18.2
Mean±SD	3.9±0.8	
Driving with sickness		
Yes	52	12.3
No	372	87.7

Table 3 shows that the respondents' driving periods and the duration of their driving. Here 41.7% of respondents drive in both day and night shifts and 46.2% of respondents drive 9-12 hours and the mean (±SD) driving hour is 11.3 (±3.3) hours. The distribution of driving based on driving with sickness and without proper rest breaks is illustrated here. Around 50.9% of respondents drive 4 hours without proper rest breaks, and the average (±SD) duration of driving without proper rest breaks was found as 3.9 (±0.8) hours. The study also reveals that 87.7% of respondents did not drive with their sickness.

Table 4. *Tobacco Consumption by the Drivers.*

Variable	Number n=424	Percentage
Tobacco using status		
Yes	322	75.9
No	102	24.1
Tobacco using pattern (n=318)		
Smoking	261	82.0
Smokeless	20	6.2
Both	37	11.8
Number of smoking stick (cigarette/bidi/hukkah) (n=302)		
≤5	85	28.1
6-10	110	36.4
≥11	107	35.5
Mean±SD	11.2±7.6	
Frequent smoking place of the respondent		
At home	9	14.9
At vehicle	19	32.8
At bus/truck terminal	28	48.3
Any other place	2	4.0

Tobacco using status of the respondents is depicted in Table 4. About 75.9% of respondents reported them as tobacco users, and the rest 24.1% of them found as non-tobacco users. The types of tobacco use among the respondents are demonstrated here where among the tobacco users the vast majority 82.0% were smokers. Therefore, 11.8% of respondents were both smokers and smokeless tobacco consumers. It is evidence of smokeless (SLT) tobacco consumption among the respondents. Here, 44.8% of respondents use tobacco ≤5 times in a day. The mean age (±SD) of the number of stick initiation was found as 11.2 (±7.6). It also demonstrates the smoking place of the respondents, 48.3% of respondents smoked at bus/truck terminals, and 32.8% of respondents smoke in the vehicles while driving.

Table 5. *Drivers' Tobacco Consumption on the Day of Accidents.*

Variable	Number N=274	Percentage
Consume tobacco at the day of accident		
Yes	90	32.8
No	184	67.2
Type of tobacco consume at the day of accident (n=90)		
Smoking tobacco	79	87.8
Smokeless tobacco	5	5.6
Both	6	6.7
Time of tobacco consumption on the day of accidents		
Before the accident	84	93.3
At the time of accident	6	6.7
Accidents due to mental distress (n=274)		
Yes	11	4.0
No	263	96.0
Occurrence of last accident status of the drivers (n=274)		
1-3	138	50.4
4-6	56	20.4
7-9	25	9.1
10-12	30	10.9
12+	25	9.2
Mean±SD	5.50±5.71	

Table 5 illustrates the tobacco consumption at the time of occurrence of the accident. Here 93.3% consumed tobacco before the accidents and 6.7% of respondents were smoking at the time of occurrence of accidents. Self-reported mental distress of the drivers before the occurrence of accidents is indicated in this table. Almost all 96.0% of respondents were not upset due to quarrels or conflict with others. However, a small of the drivers 4.0% was found mentally upset due to quarrels and conflict with others. It also demonstrates the status of the last road traffic accident period of the drivers. Therefore, 50.4% of last accidents had occurred in between the last 1 to 3 years. The average (±SD) period of the last

occurrence of the accident was found as 5.50 (±5.71) years.

Table 6. *Knowledge and Perception on the Traffic Law.*

Variable		Number N=424	Percentage
Knowledge about the traffic law			
Have knowledge		10	97.6
Have not knowledge		414	2.4
Source of perception about this law			
Official training		259	61.1
Personal efforts		165	38.9
Frequency of abiding by the tobacco control law			
Daily		342	80.7
Sometimes		82	19.3
Heard about tobacco control law (n=335)			
Yes		256	76.4
No		79	23.6
Source of idea about this law (n=256)			
Official training		105	41.0
Personal efforts		151	59.0
Smoking in public places is prohibited by the law (n=335)			
Yes		297	88.7
No		38	11.3
Punishment for smoking tobacco in public place / transport (n=335)			
Yes		251	74.9
No		84	25.1
Perception about tobacco control law			
Have idea		265	79.0
Have no idea		70	21.0
Respondents' perception regarding tobacco control law (n=424)			
Perceptions of the respondents	Mode*	Number	Percentage
Prohibition of smoking in public places and in public transports are rational.	5	202	47.6
Pictorial warning on the packet of Cigarette should be strengthening.	5	180	42.5
Tobacco products should not be sold to minor	5	297	70.0
Tobacco control law should be implemented properly.	5	202	47.6
Smoking among bus/truck drivers is one of the obstacles in the effective implementation of the tobacco control law.	3	124	29.2
Bus/truck drivers should not smoke for keeping their health and fitness and thereby for better performance.	4	151	35.6
Smokers should abstain from smoking in bus/truck stations if the authority launches a smoke-free initiative.	4	157	37.0
Smoke free bus/truck station initiative is possible.	4	115	27.1
Orientation or training program on tobacco control law should be arranged for bus/truck drivers.	4	183	43.2
Drivers abiding by tobacco control law (n=335)			
Daily		160	47.8
Sometimes		134	40.0
Never		41	12.2

*1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree.

Perception of the drivers towards the road traffic law is indicated in Table 6. Here, 61.1% of respondents got an idea about this traffic law from official law and the rest 38.9% of the on come to know this law by personal effort. Among the respondents, 80.7% of them abide by the tobacco control law daily, and the rest of them 19.3% sometimes abide by the law. In tobacco control laws, 76.4% of respondent's drivers have knowledge about the tobacco law; and 59.0% of respondents have come to know about this law by their own efforts. About 88.7% of respondents know that smoking in public places is strongly prohibited by the law. It also shows the drivers' perception, knowledge, and attitudes towards 93.4% of respondents know that smoking in public transports is strongly prohibited by the law and 6.6% of drivers don't know about this law. Besides, 74.9% of the respondent's drivers know about the

punishments of smoking in public places/transports. It shows that the majority 79.0% of respondents doesn't have any idea about tobacco control law in Bangladesh and 21.0% of respondents had an idea about tobacco control law. Therefore, 47.6% respondents strongly agree that prohibition of smoking in public places and in public transports are rational, 42.5% respondents strongly agree that pictorial warning on the packets of cigarettes should be strengthened, 70.0% respondents strongly agree that tobacco products should not be sold to the minor and 47.6% respondents strongly agree that tobacco control law should be implemented properly. It also shows that 47.8% of drivers abided by the tobacco control law daily. In addition to that, 40.0% opined that they sometimes abide by tobacco control law. Simultaneously, 12.2% had never abided by the law.

Table 7. *Road Traffic Accident.*

Variable	Number n=274	Percentage
Occurrence of road accidents during driving life		
Involved	177	64.6
Not involved	97	35.4
Duration of driving at a stretch (in hours) before accident (n=274)		
1-3	139	50.7
4-6	74	27.0
6+	61	22.3
Mean±SD	4.5±3.2	
Following shifting duty before accident		
Yes	148	54.0
No	126	46.0

The involvement of the drivers in the occurrence of road accidents in their driving life is illustrated in Table 7. About 64.6% of respondents are found to be involved in the occurrence of road traffic accidents in their driving careers. The duration of driving at a stretch and the shifting duty of the drivers before the accidents is depicted here. About 50.7% of respondents had the experience of occurring accidents after driving 1 to 3 hours at a stretch and the average (±SD) of' at a stretch' driving was found as 4.5 (±3.2) hours. The study also reveals that 54.0% of respondents followed their shifting duty before occurring accidents.

3.1.1. Univariate Analyses

Table 8. *Road Traffic Accidents with Smoking While Driving and Knowledge of Divers on the Traffic Law.*

Variable	Ever Involved in road accident		χ^2	P value
	Yes N (%)	No N (%)		
Smoking while driving				
Yes	127 (72.6)	48 (27.4)	9.05	0.003
No	71 (55.9)	56 (44.1)		
Frequency of SLT use per-day				
≤5	15 (44.1)	11 (45.9)		
6-10	15 (44.1))	6 (25.0)	8.67	0.034
≥11	4 (11.8)	7 (29.1)		
Knowledge of drivers related to law of smoking ban at all public transports				
Yes	210 (67.1)	103 (32.9)	6.22	0.013
No	9 (40.9)	13 (59.1)		
Knowledge of divers on the traffic law				
Yes	268 (64.7)	146 (35.3)	0.096	0.757
No	6 (60.0)	4 (40.0)		

Table 9. *Association of Road Traffic Accident and Socio-Demographic Characteristics.*

Co-variates	OR	P value
Duration of driving (in year)		
≤5	.607	.126
6-10	.927	.820
11-15	.484	.024*
16-20	1.341	.420
20+	Ref	
Duration of driving hours per-day (in hours)		
≤8	.908	.908
9-12	.570	.570
12+	Ref	
Having license	.359	.042*
Driving with sickness	2.916	.005*
The drivers who smoke daily	2.000	.014*
Smoking during driving	2.087	.003*
Having knowledge on smoking in public transports is prohibited by the law	2.945	.016*

*significance.

Table 8 is evidence of an association between ever involvement of road traffic accidents and smoking by the drivers. Statistically, a significant association was found between road traffic accidents and smoking while driving (p<0.003). It also shows the relationship between ever involvement of the drivers with the occurrence of road traffic

accidents and per day frequency of SLT consumption. Statistically, significant association was found between ever involvement of the drivers with the occurrence of road traffic accidents and per day frequency of SLT consumption (p<0.034). The relationship of ever involvement of the drivers with the occurrence of road traffic accidents with knowledge of the drivers on smoking and traffic law is demonstrated here. A statistically significant association was found between ever involvement of the drivers with the occurrence of road traffic accidents; knowledge of the drivers related to the law of smoking ban at all public transports (p>0.013). An insignificant association was found between accidents and any knowledge of the divers on the traffic law (p<0.757).

3.1.2. Multivariate Analyses

Table 9 shows that co-variants are significantly associated with ever involvement in road accidents. Duration of driving from 11 to 15 hours (OR=0.484, p=0.024) is associated with RTA. Having a license (OR=0359, p=0.042) is also associated with RTA, and driving with sickness (OR=2.916, p=0.005) is strongly associated with RTA. The drivers who smoking daily (OR=2.000, 0.014) are strongly associated with RTA. Smoking during driving (OR=2.087, p=0.003) is also strongly associated with RTA, and having knowledge on smoking in public transports is prohibited by the law (OR=2.945, p=0.016) is also associated with road traffic accidents.

3.2. The Qualitative Findings

As mentioned earlier, qualitative data were collected through the Key Informants' Interviews (KII). In total 10 (ten) key informants were interviewed where the mean age of the participants was found to the as 43.9 years. All of them were males (100 percent), and a little higher than half of the informants had up to SSC level education (5 participants). Four heavy vehicle drivers, two NGO officials, two journalists, and two policy activists participated in the interviews as key informants.

Tobacco Control Laws and Road Traffic Accidents
The key informants said that all the drivers knew at least something about the tobacco control laws. Although they wanted to obey the law, most of the drivers did not obey these laws due to lack of enforcement. The enforcement of the laws should be done strictly. The government should take necessary steps to enforce the laws. One important key informant replied as follows,

> "There is a monetary fine for smoking in a public place like a transport. They don't follow the rules inside the vehicle in Bangladesh; so should be penalized the law breakers."

Many of the key informants also mentioned that the number of accidents was getting higher day by day. By enforcing strict rules and following those we could reduce accidents. The arrangement of punishment and fine would raise alertness among the drivers. If the rules were strictly followed by the drivers, we could reduce accidents. Enforcement of fine might be a good and effective idea. A key informant of this study shared his experience as follows:

> "I think some laws should be followed while driving; if the drivers don't follow the rules then they should be punished. In every sector, people have to follow some rules. Some drivers drive in their own, they don't follow any traffic rules. Some of them don't have even their valid licenses. Those who are in-charge of defending the laws, they also break the laws. So, why the common drivers should follow those."

Almost all the key informants agreed that there were many challenges and obstacles in proper implementation of the Tobacco Act. While driving if someone consumes tobacco, the police do not enforce the law properly. When the police and concerned authority are not aware about the laws, then the enforcement will not be implemented properly. There are many kinds of barriers in applying some anti-tobacco consumption rules. The government should be more proactive to implement the rules strictly. One important respondent opined,

> "We can control any crime anytime by the rule of laws. If the police do their duty properly, tobacco use can be controlled. The police should not take bribes from the drivers if they do any wrong deeds. They should be punished for their illegal deeds. But the police take some amounts of money and let them go unpunished. That's not right. For this reason, the drivers don't get afraid about punishment. By changing behavior of the police, we can chalk out any kind of law."

4. Discussion

This study provided us a comprehensive picture of the heavy vehicle drivers' perception, knowledge, and attitudes towards road traffic accidents and the relationship among tobacco consumption, tobacco control law, and road traffic accidents in Bangladesh. The relationship between heavy vehicle driver's tobacco consumption habits and road traffic accidents in Bangladesh is also depicted here. In the study, the prevalence of smoking was discovered to be 75.9%, whereas, only 24.1% were reported to be non-smokers. It is more or less similar to the findings of other studies done earlier. Other relevant studies revealed that the prevalence of tobacco use was 59.0% among Bangladeshi adult men which is comparable with our study, as the current study included the drivers as adult men [16]. However, another study conducted by the same author in 2009 documented a lower male prevalence of smoking (53.6%) [16].

Our results show the perception of the drivers towards the road traffic law. In tobacco control laws, 76.4% of respondent's drivers have knowledge about the tobacco law; and 59.0% of respondents have come to know about this law by their own efforts. Here, 61.1% of respondents got an idea about this traffic law from official law and the rest 38.9% of the on come to know this law by personal effort. A study noticed that majority (89.6%) of the respondents were aware of the existing National Tobacco Control Law. But one third (33.0%) of the respondents did not have any detailed idea on NTCL. Those having an idea on NTCL, half of them knew by

personal efforts, the rest (46.1%) by departmental training (46.1%) [17]. The respondents, 80.7% of them abide by the tobacco control law daily, and the rest of them 19.3% sometimes abide by the law. About 88.7% of respondents know that smoking in public places is strongly prohibited by the law. It also shows the drivers' perception, knowledge, and attitudes towards 93.4% of respondents know that smoking in public transports is strongly prohibited by the law and 6.6% of drivers don't know about this law. Other study findings depicted most of the respondents (98.6%) showed a positive attitude regarding the rationality of prohibition of smoking in public places and public transports [17].

This study explored that about 64.6% of respondents are found to be involved in the occurrence of road traffic accidents in their driving careers. Another research found that 86% of male drivers, compared to 41% of female drivers, were involved in traffic accidents at the same age [18]. It shows the association between ever involvement in road traffic accidents and smoking by the drivers. Statistically, a significant association was found between road traffic accidents and smoking while driving (p<0.003). Another study illustrated that cell phone calls (p < 0.001), smoking (< 0.001) while driving were observed more in professional compared to the private car and motorbike drivers [19].

Another research discovered that smoking while driving correlates with the smoking prevalence in Greece by age, sex, social status, and urbanization. According to the 2019 smoking prevalence in Greece (36% male /22% female smokers), more men, younger (34 years old), lower social status, and urban residency, as well as more personal than private drivers, smoke while walking [19, 20]. Prior to the enforcement of the in-car smoking ban law; a Canadian study discovered that smokers have a greater crash rate than nonsmokers [21].

Although smoking is a recognized distraction and a risk factor for traffic collisions, it is not commonly viewed as such by drivers who may be unaware or dependent on inaccurate assumptions and stereotypes [22]. It also shows the relationship between ever involvement of the drivers with the occurrence of road traffic accidents and the per day frequency of SLT consumption. Statistically, a significant association was found between ever involvement of the drivers with the occurrence of road traffic accidents and the per day frequency of SLT consumption (p<0.034). Another existing literature also showed that statistical analysis which slightly inconsistent with this study. That study findings notice that drivers 35–54 years old were 2 times more likely to smoke while driving than 17–34 year old (p=0.009) while 17–34-year-olds were 6 times more likely to smoke compared to 75+ year-olds (p=0.006). Private car drivers were 3.6 times more likely to smoke than motorbike drivers (p=0.002) while professional drivers were 9.5 times more likely to smoke (p<0.001). Drivers of a lower social class had 3.7 times higher odds of smoking compared to drivers of an upper social class (p < 0.001) [19].

The key informants informed about the drivers' habit of smoking. This is the reason why they don't follow the highway traffic rules. As a result, serious accidents occur. There are different rules and regulations provided by the government in the anti-tobacco Acts, but the drivers hardly follow those rules. Because of breaking of the rules, serious accidents take place, and the drivers get little punishment for the smoking habit. The key informants suggest that there is a tobacco control law. Proper implementation of the tobacco control Act is always challenging and there are many obstacles in enforcing it.

5. Conclusion

This study reveals that the use of tobacco products is rampant among heavy vehicle drivers and its negative association with Road Traffic Accidents (RTA). After reviewing all the findings and outcomes, the study concludes that the vast majority of heavy vehicle bus-truck drivers are not aware that smoking and SLT use is a big risk factor for fatal road traffic accidents in Bangladesh. This study showed that the majority number of respondents is tobacco users and a very less number of drivers have knowledge about the tobacco law. But most of the drivers know that smoking in public transports is strongly prohibited by the law. Again, there is a lack of knowledge among the drivers regarding the possibility of the occurrence of road traffic accidents due to tobacco consumption. So, encouragement of healthy attitudes and behavior is a bigger challenge.

6. Recommendations

To reduce smoking habits among the drivers, there should be necessary measures at the gross root levels. At first the drivers should be make themselves aware about eradicate tobacco use or smoking habits. Afterwards, laws should be enforced to make the drivers aware about avoiding smoking while driving. Appoint the drivers by promising to avoid smoking while driving, otherwise they should be punished, or their appointment should be canceled. Publish related photos and posters on the impacts of smoking to raise awareness among the drivers and implement laws properly for punishment due to tobacco consumers.

and effective.

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