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Awareness and Practice of Road Safety Measures of Pedestrians in Bangladesh

Nargis Akrami Lira [1]

ABSTRACT

Although Bangladesh has a higher risk of accidents involving pedestrians, safety culture is vital in reducing unintentional deaths and injuries, generally in developing countries. The promotion of a pedestrian safety culture has received little attention. This study looked into Bangladeshi pedestrians' present attitudes toward and understanding of safety and related activities. Using an online-based structured questionnaire with 16 items relevant to safety attitude, awareness, and actions, a cross-sectional survey of 320 randomly chosen Bangladeshi citizens was carried out. According to the study, pedestrians' safety attitudes, awareness, and behaviour levels are insufficient. It was revealed that safer pedestrian actions were connected with positive attitudes toward traffic safety. Males, younger respondents and respondents with less education reported engaging in riskier behaviours and having more risky views regarding traffic safety. In order to strengthen and promote a safety culture among Bangladeshi walkers, it is advised that various safety education courses, training, and awareness programs be implemented. The safety culture of road safetyof Bangladeshi people needs to be investigated.

KEYWORDS: Road Safety, Pedestrians, Bangladesh, Awareness and Traffic Law.

[1] Assistant Engineer, Roads & Highways Department, Bangladesh.
Email: nargis.lira@gmail.com (Corresponding Author)

INTRODUCTION

The techniques and precautions taken to avoid road users' death or serious injury are referred to as road traffic safety. Typical road users include vehicles, cyclists, pedestrians, and riders of on-road public transportation, primarily buses. One of the biggest issues with public health and injury prevention today is road accidents. To avoid accidents on the road, awareness of road safety is essential.

Road safety refers to practices and policies intended to lessen the chance that people using the road network would be engaged in an accident or incident that could result in significant injuries, property damage, or even death. The most vulnerable road user groups—pedestrians, cyclists, and motorcycle riders—account for over half of all fatalities from traffic collisions world wide. The walk mode plays a big part in Bangladesh because there is little motorisation. Indeed, walking is a key component of a sustainable transportation plan. Typically, motorists are given more priority and attention than pedestrians. Facilities that guarantee the validity, safety, and convenience of pedestrians are protection that they both deserve and require. As the most vulnerable user group not physically protected, pedestrians are given primary consideration in road safety strategies.Forty-nine percent of all recorded fatalities in the accident database were pedestrians. In metropolitan areas, 62 percent of fatal traffic accidents involve pedestrians. According to recent figures, the situation in the metropolitan area of Dhaka is getting worse, with the percentage of fatal traffic crashes involving pedestrians rising from 43% in 1986–1987 to 74% in 1998–2010. In rural areas, 52 percent of pedestrian fatalities happen while walking beside the road, compared to 50 percent of pedestrian fatalities in metropolitan areas that happen when crossing the street. Conversely, passengers are most likely to get severe and minor injuries (63 percent) (Ahsan, 2012).Understanding the underlying causes impacting pedestrian behaviour and attitudes toward road safety is necessary to address this problem.

It would have been incredibly useful if the information had been gathered from all types of people. However, due to time constraints, only Google forms were used to collect the data. As a result, the survey only accurately depicts a particular segment of Bangladesh's population—specifically, only those with a high level of education.

According to current accident data, there have been an alarming number of road accidents in our nation, many of which are due to motorcycle mishaps. Of course, pedestrians are a particularly vulnerable target in these incidents, and they need more precautions to prevent mishaps. Through this study, I have attempted to learn more about Bangladeshi pedestrians' safety habits and awareness. I hope that through this study, we'll learn the requirements to raise traffic safety awareness and cultivate a pedestrian-friendly culture.

The objectives of this study are

1) Assess the awareness about road safety measures of pedestrians of Bangladesh.
2) Finding out about the practice of road safety measures for pedestrians of Bangladesh.

LITERATURE REVIEW

There are many works of literature and research regarding the causes of accidents in Bangladesh and worldwide, but not much regarding self-awareness among pedestrians and other non-driving road users. A few recent studies have emphasised poor knowledge and awareness regarding traffic rules and road safety attitudes among pedestrians in Bangladesh. MrHossain and his colleagues tried to identify the characteristics of road traffic accidents (RTA) and the role of different socioeconomic and demographic factors in the knowledge and awareness about traffic rules among people in Bangladesh(Hossain et al., 2020). While (Hasanat-E-Rabbi et al., 2021) tried to identify the factor structure of a self-report questionnaire on pedestrian behaviours and road safety attitudes and explore the relationships between them. Both articles create the premise of study on awareness and practice of road safety measures of pedestrians, their psychological response to some critical situations, and what they feel regarding road safety improvement.

Over 1.2 million people die on the world's roadways each year, according to the World Health Organization (Peden et al., 2004). According to the report traffic crashes on the world's roadways result in an estimated 1.2 million fatalities and 50 million injuries each year, and they are the top cause of mortality in children between the ages of 10 and 19. The research also mentioned that simple preventative measures

might cut the number of deaths in half and that developing countries were where the problem was most acute(2008)(BBC News 2008). In recent years, the importance of road safety has increased. Every nation has its road traffic safety service and programs, which include initiatives to reduce the severity of accidents' effects and prevent their causes. One of the main issues for a nation's development is road traffic accidents (RTA). Traffic accidents continue to result in significant fatalities and painful injuries worldwide, particularly in developing nations like Bangladesh, despite notable improvements in traffic safety. Bangladesh is ranked 106th out of 183 nations regarding the number of people killed in traffic accidents. Due to the widespread underreporting of fatal traffic accidents and an overestimation of licensed vehicles, as scrapped vehicles frequently aren't deleted from the vehicle registry, the problem of road safety in developing countries may be considerably worse than the official figures show (Jacobs & Baguley,1995).In developing nations, safety culture is vital in reducing unintentional deaths and injuries; yet, in Bangladesh, pedestrians and passengers on public transit are more at risk for accidents.

METHODOLOGY

Source of the Data

Anonline structured questionnaire with 17 items relating to road safety attitudes and awareness of pedestrians in Bangladesh was used to conduct a cross-sectional survey among 320 randomly chosen citizens of Bangladesh from May 23 to June 24, 2022.Therefore, I have collected primary data through a Questionnaire survey.

Survey Instrument

A questionnaire survey was employed to examine views toward road traffic safety and pedestrian behaviour and gather demographic data (age, gender, and education level). Sixteen items were utilised to gauge people's overall views toward road safety. The respondents were asked to score their agreement with various claims made on the use of unsafe on-road behaviours. I have used several questions that allude to prevalent practices in Bangladesh, such as not using footbridges or underpasses for crossing roads, not using footpaths, and not being cautious enough when crossing roads. Various demographic questions,

such as age, gender, occupation, and level of education, were also asked of the respondents.

Survey Administration

Bangla, the language of the Bangladeshi people, was used for the questionnaire's initial iteration. The survey was done online. To complete the entire questionnaire, it took about 4 to 5 minutes (including sections not covered in this article). Everyone who participated gave their complete, informed consent. Since Bangladesh has no laws or regulations requiring ethical approval, none was requested.

Participants

For analysis, 320 total valid responses were gathered. Figure 1 shows the sample's age and gender distribution. Figure 2 shows features related to education. Further categorising respondents into four broad educational categories included those with no formal education, an HSC degree or above, an SSC degree, and Primary school completion. Figure 4 displays the occupations of the participants. Figure 5 shows the proportion of participants using roads in terms of frequency.

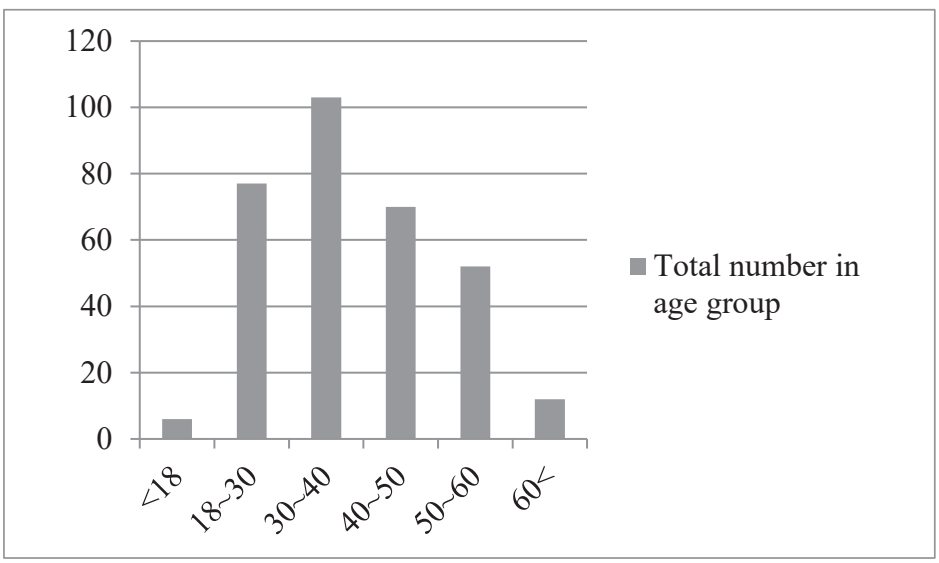

Figure 1: *Age of the Respondents*

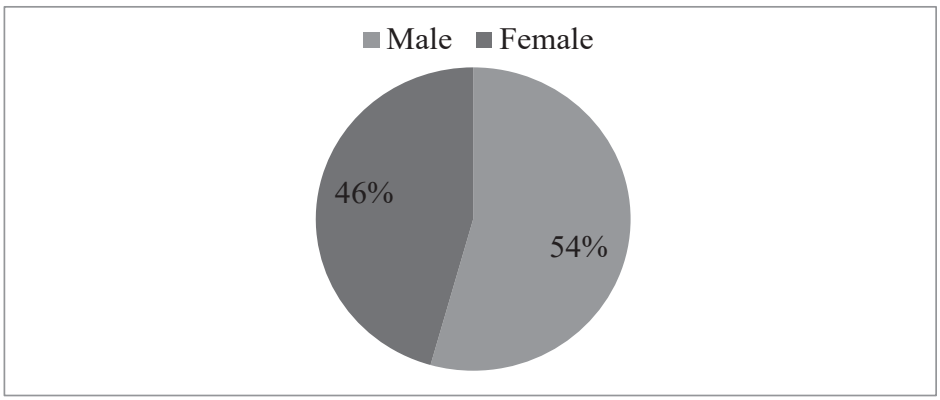

Figure 2: *Gender Distributions among the Respondents*

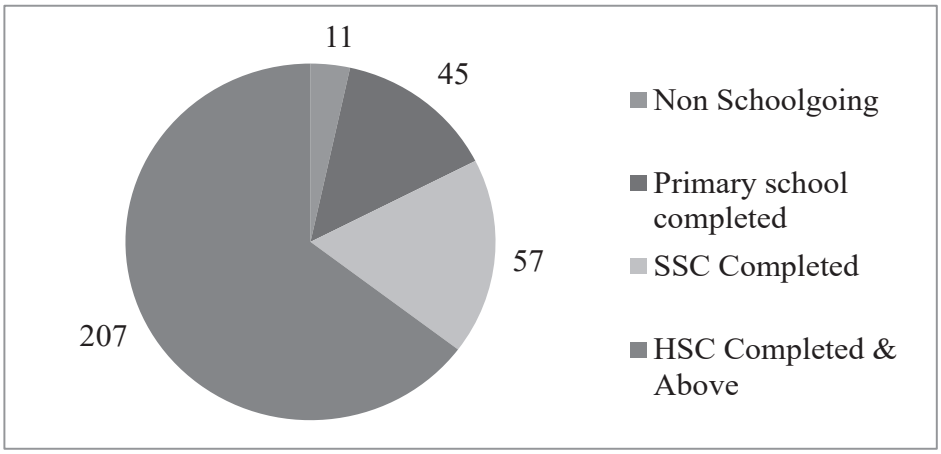

Figure 3: *Educational Qualification*

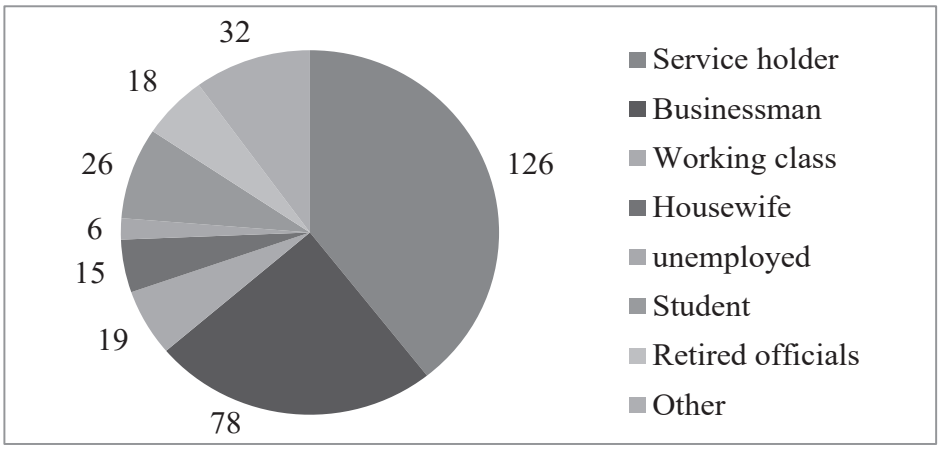

Figure 4: *Occupations of the Respondents*

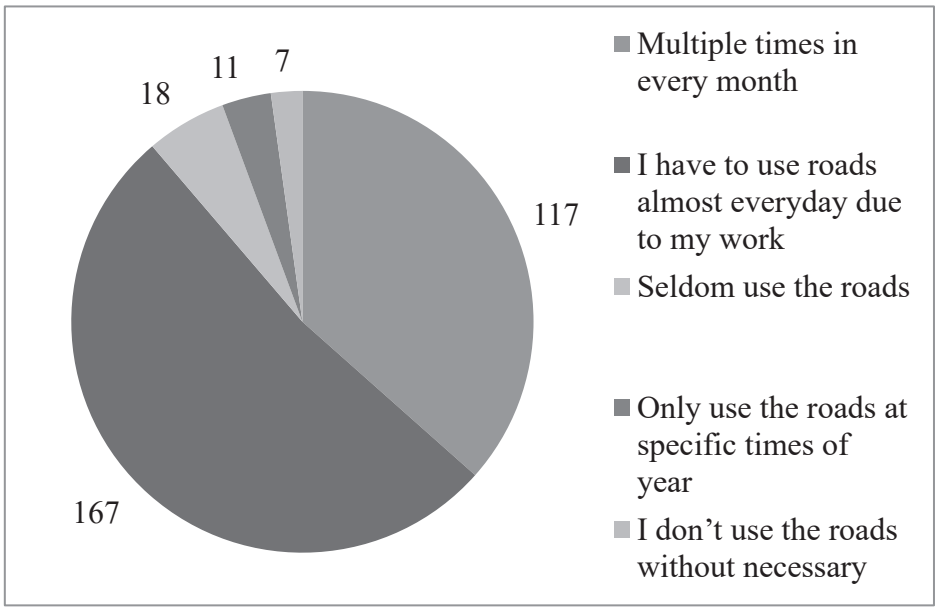

Figure 5: *How Frequent the Participants Use Roads?*

Age

The participants in the questionnaire form reported the age of the respondent. A respondent's age was measured in terms of years on the basis of his/her response.

Educational Qualification

The education was measured based on the years of schooling, which was determined by the respondent's reply to the questionnaire. For simplicity, four categories were incorporated in the questionnaire form; from non-school going to higher secondary certificated or above. The survey tried to reach all types of educated and non-educated people.

Occupation

Occupation is an important metric for this particular study, as occupation dictates the frequency of road use of the participants. For example, service holders move in routine directions, and housewives barely use roads.

Frequency of Road Use

The questionnaire aimed to know how often the participants used roads.

Statistical Analysis

All the gathered data were double-checked before transferring them to the master table sheets. The data were collected, coded, tabulated, and then evaluated for this study following the goal; where appropriate, qualitative data were transformed into quantitative data using a suitable scoring method. Statistics include distributions of the variables' numbers and percentages. Additionally, data was presented in a chart to aid with understanding.

RESULTS

Knowledge and Awareness of Different Road Safety Issues

The participants responded in questionnaire form on their actions for different regulatory features and measures –like traffic signboards, footpaths, zebra crossing, overpass, underpass, and examining the right and left sides before crossing roads. Most of them cross the road by eye, examining either side of the road, they follow the instructions on traffic signboards, but a lack of use of zebra crossing, overpass or underpass is observed. The survey result is tabulated below. Knowledge of road markings is also important in the road safety analysis.

Table 1: *Self-Assessment of Activities Regarding Different Regulatory Road Features*

Situations	Frequency of use by the respondents				
	Always	Most of the time	Sometimes	Never	
Cross the roads after eye examining the right and left sides	85.5%	14%	0.5%	0%	
Follow the instructions displayed on traffic signboards	51.5%	33%	14.7%	0.8%	
Use of footpath	52.9%	39.7%	7.4%	0%	
Use of Zebra crossing, overpass or underpass	17.6%	35.3%	11.8%	0%	Only use it if there is one near to me 35.3%

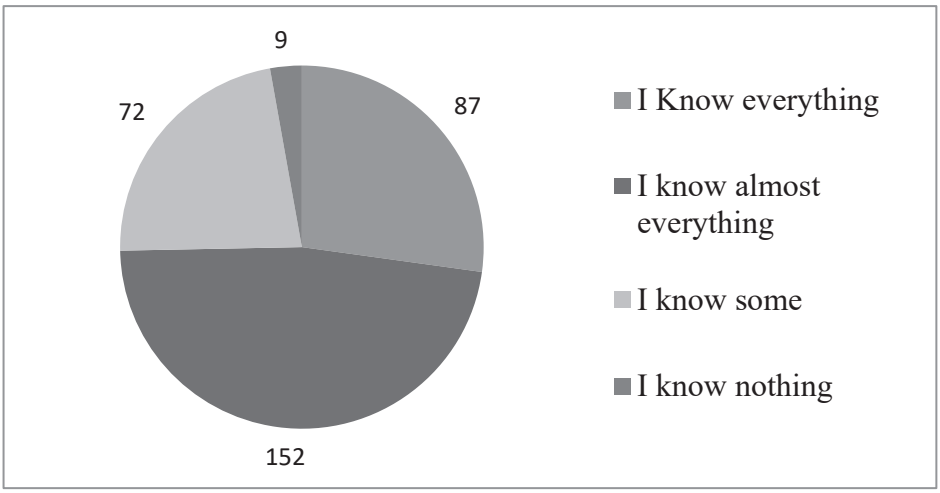

Figure 6: *Knowledge of Road Markings*

Opinion on Some Critical Issues Regarding Road Safety in Bangladesh

A few burning issues, like the three-wheeler and motorcycle movement on national highways, were focused on in the survey. The survey questions were opinion related regarding circumstances. The results are depicted in figures 7 and 8 below. Another opinion was asked about negligence in using foot over-bridges; the result is shown in figure 9.

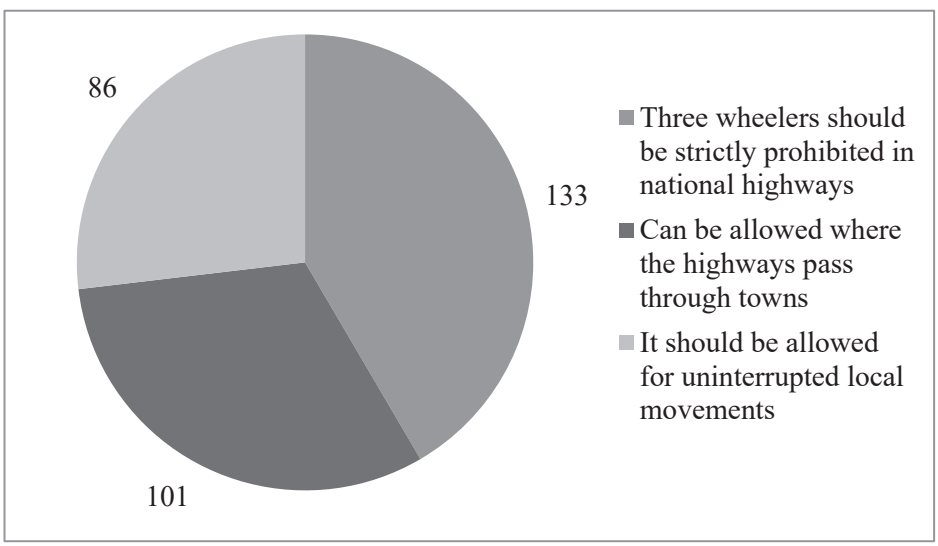

Figure 7: *Opinion on Three-Wheeler Movements on National Highway*

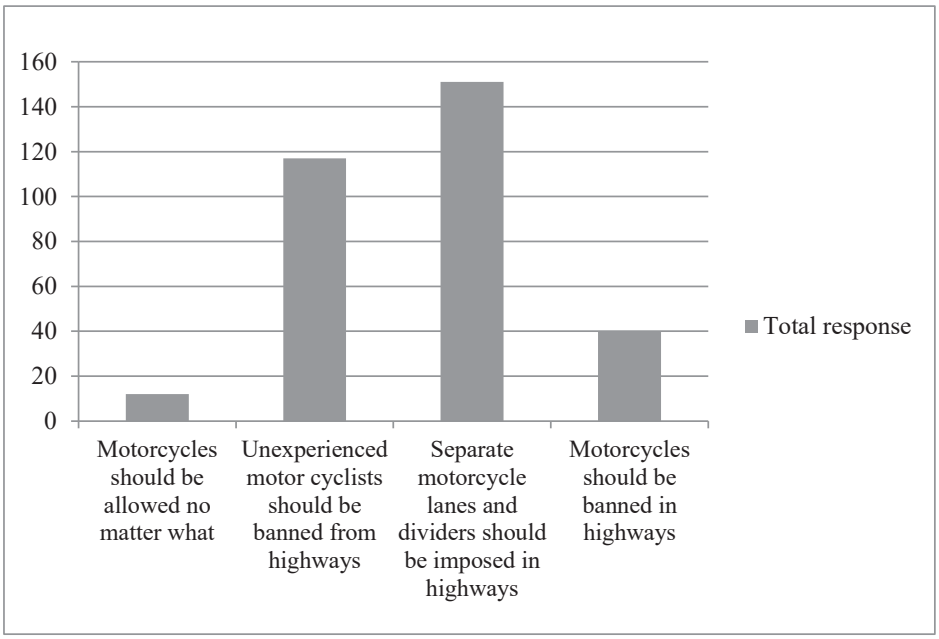

Figure 8: *Opinion on Motorcycle Movement in National Highways.*

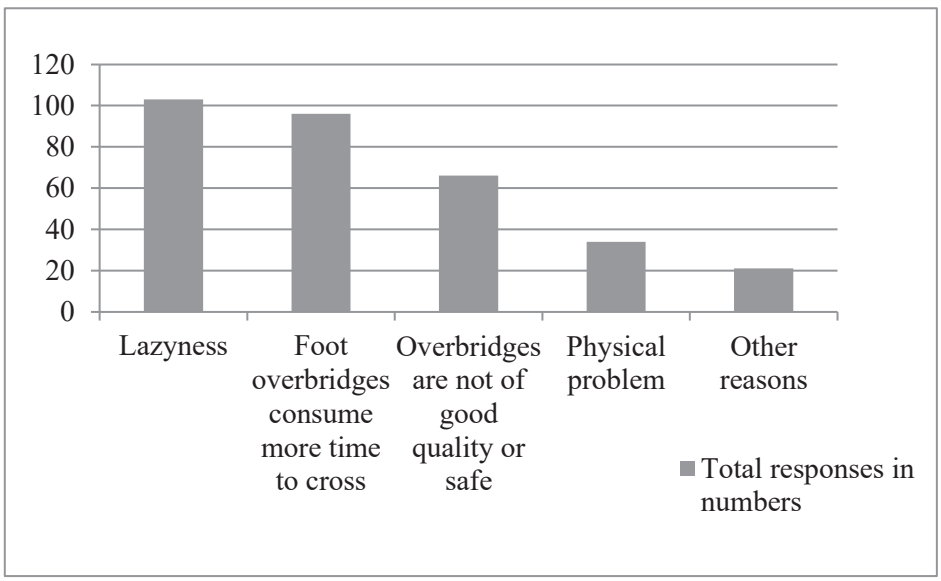

Figure 9: *Opinion on Reason behind Negligence in Using Foot over bridges*

A psychological test

The participants were asked what to do when the bus moved relatively slowly. Most of the participants emphasised the time wasted on the journey; thus, they would try to increase the bus speed by requesting the driver to drive faster or at least check if the driver is feeling sleepy. They completely ignore that drivers drive at their respective comfortable speeds on highways. An attempt to change or alter or disrupt it could cause fatal accidents.

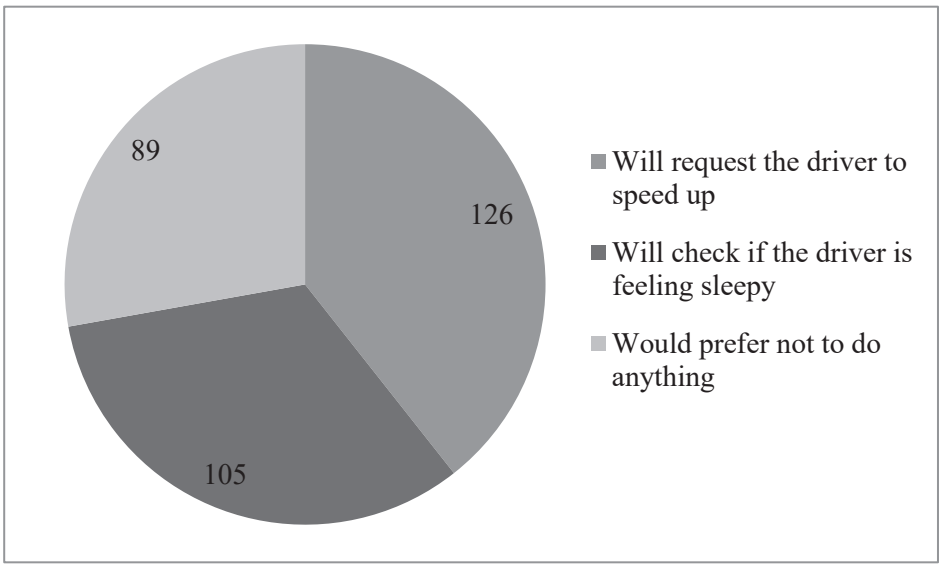

Figure 10: *Reactions of Bus Passengers While the Driver is driving excessively Slow*

Self-assessment

At the very end of the questionnaire forms, participants were asked to score their safety awareness knowledge. A scale of 1 to 5 was placed, while 1 was for least aware or unaware and 5 for completely aware. Almost 59% of the participants score 4, meaning they believe their knowledge of road safety issues and safety awareness is pretty good.

Table 2: *Self-Assessment Score on Safety Awareness*

Scale	1	2	3	4	5
	Unaware				Completely aware
Percentage of response	0%	0%	14.7%	58.8%	26.5%

DISCUSSIONS

A Bangladeshi sample was used in this study to examine the factor structures behind measures of attitudes regarding pedestrian safety and behaviour, as well as the associations between those attitudes, self-reported behaviours, and demographic characteristics.In line with our findings, a few earlier studies have determined that ignorance of and disregard for traffic rules and signals is Bangladesh's primary cause of road traffic accidents (RTA). Violation of traffic rules frequently results from a lack of understanding of these rules, which has a significant negative impact on RTA.

It was discovered that demographic traits were associated with views regarding pedestrian conduct and traffic safety. Older adults claimed to have safer attitudes and safer behaviours. It was discovered that men reported engaging in riskier actions and having more risky attitudes than women. There is a clear relationship between educational status and attitudes and behaviours; those with greater levels of education had more protective attitudes and behaviours. Relationships between demographic factors (such as age, gender, and educational attainment), attitudes toward traffic safety, and pedestrian behaviour are consistent with the findings of previous studies using pedestrian behaviour questionnaires.

With the data obtained from the study, it is fair to say that people are well concerned with the features that ensure road safety; at least, they know what to do to stay safe. People know they must use foot over-bridges, zebra crossings or underpasses to cross the roads. They have to examine their right and left to cross the road by Foot in the absence of any foot over-bridges or underpass. They know they must use a footpath to walk along the road and follow the instructions on traffic signboards. However, a sheer lack of willingness to use foot over-bridges is found in the study, as depicted in figure 9 above. At least 62% of the participants feel that foot over-bridges are not worth using due to laziness or wasting time. And again, 20.6% of the participants feel that the over-bridges are not of

either good quality or safe to use. Foot over-bridges usually deteriorate upon long-time use. It can pose a significant health risk if not maintained regularly. Moreover, homeless people usually sleep on the deck of foot over-bridges during the night. While staying there, they usually remain addicted and commit petty crimes in the dark. Lone female pedestrians often get attacked by them. Consequently, female pedestrians usually try to avoid less used over-bridges during the night.

Foot over-bridges with comfortable boarding and departure mechanisms may mitigate the laziness and time-consuming issues of foot over-bridges. The over-bridges can become very comfortable if the traditional stationary stairs are replaced with escalators. Then again, escalators must be regularly maintained and, as sophisticated electrical equipment, must be kept safe from the weather. Hence, foot over-bridges with escalators are not a solution for low pedestrian flow regions. The investment would be high, but the service would not be that fulfilling. Moreover, there will be chances of theft of escalator types of equipment in low pedestrian flow bridges. In such scenarios, zebra crossings with in-situ traffic officials can be a good alternative.

Most participants have expressed that they crossed the road after examining it at right and left (Table 1). This is a question that participants cannot always answer correctly, so the survey result for this particular question cannot be taken for granted. This is the case where people know the custom and know how to apply the custom, but their activity in their subconscious mind often leads to accidents. For example, concentration deteriorates when people talk for a long time over cellular devices while walking on a street with heavy traffic. People barely examine the road if it is required to cross the road with a cellular device hoisted on-ear. So, serious accidents may occur while a group of people try to cross the road while discussing anything serious.

Footpaths are barely seen outside metropolitan cities. Usually, suburban roads are so narrow that local authorities cannot accommodate footpaths on either side of the road. In metropolitan cities, footpaths are often consumed by street hawkers. This comfortable walking manoeuvre cannot be achieved. The pavement of the footpath is often so irregular that people find it very difficult for morning or evening walks. Low-earning people are seen going to the office on Foot; while walking, they have to use the road because of poor footpath pavement.

The movement of motorcycles and motorised or non-motorised three-wheelers is another well-established reason for traffic accidents on national highways. Almost 42% of the participants expressed that three-wheelers must be prohibited from national highways (Figure 7). But the others, with conditions, voted for three-wheelers on highways. Three-wheelers are common short-route local transports for the towns where national highways pass through it. Thus, prohibiting three-wheelers there would significantly hamper the daily life of the townspeople. Accordingly, prohibiting three-wheelers from national highways couldn't be implemented entirely, despite being one of the top reasons for highway accidents. Separate slow-moving vehicular transport (SMVT) lanes with permanent lane dividers can be constructed on national highways to mitigate accidents. Separate lanes with dividers will ensure no slow-moving- high-moving vehicle collision.

Participants did not give the same verdict on motorcycles as on three-wheelers, despite motorcycles on highways being the number one occupant in highway road accidents. Only 40 out of 320 (12.5%) participants expressed that motorcycles must be banned from national highways (figure 8). 47% of the participants voted for a separate motorcycle lane with dividers, while many others expressed concerns over the bikers' experience. Unlike three-wheelers, motorcycles have become a popular low-space-quick move transport. Unlike three-wheelers, registered motorcycles can move all over Bangladesh. Hence, barring motorcycles from national highways will not be implementable. And again, the ride-sharing earning method has yielded huge motorcycles inroads in recent years. So, there is no chance of discouraging motorcycles from the roads. Therefore, we have to implement necessary safety and precautionary measures to reduce or eliminate motor cycle-caused road accidents.

There was a psychological question regarding bus speed in the questionnaire survey. The participants were asked what they would do if the bus was being run at a relatively low speed while participants remained in serious time constraints. According to the survey, almost 40% (126 out of 320) of the participants would ask the driver to increase the driving speed. 32% would inquire about the driver, and the other would remain silent (figure 10). Though at the end of the questionnaire, 58.8% of them scored 4 on an awareness scale from 1 to 5 (Table 2). Both responses contradict themselves.

While a long-route bus driver drives a bus on the national highway, he drives it at a speed that suits his physical and mental conditions, vehicle conditions and weather. That is the speed he feels most comfortable driving with. Trying or forcing them to change speed - either increase or reduce- may derail him from his comfort zone, and thus he may commit serious errors if the situation arrives. The long route vehicle drivers should be allowed to drive at the speed he is comfortable with, even if the passengers feel aggrieved that they are on course for delay for their destinations. With 40% of the participants preferring to ask the driver to increase the speed of the vehicle, it can be deduced that they are inconsiderate and incapable of measuring the depth of the situation and its significance. In short, they are not aware of road and travel safety. In reality, road safety awareness is much more than foot over-bridge uses, traffic rules awareness, zebra crossing uses or three-wheelers concerns on the road. It's all about considerate movement- of all types and forms- on roads and keeping clear and concise regarding our activities on the road.

This study does have some drawbacks.The first drawback is the nature of the data: in self-report studies, there is always a chance of bias in the responses, motivated, for instance, by the desire to make the best impression.It was a brief online survey. Because of this, it does not accurately reflect Bangladesh's total level of awareness regarding pedestrian safety on the roads.Bigger sample size would enhance the likelihood of accurately representing the findings. In addition, a higher percentage of rural and illiterate people have no knowledge or awareness of traffic rules. This is because, in a rural area, there is no such program related to increasing knowledge and awareness of traffic rules. Hence, the initiatives are badly needed to improve the situation to make people aware of traffic rules.

CONCLUSION

The current study aims to investigate the dimensions underpinning pedestrian behaviour and attitudes about traffic safety in Bangladesh and to evaluate their interrelationships as well as the influences of age, gender, and education on those constructs.According to the study's data, it is acceptable to state that people care about the elements that assure road safety; if nothing else, they know what to do to keep safe. But more needs to be done to improve traffic safety.

Raising public awareness about traffic laws is essential for reducing RTA (Road Traffic Accidents). Through education, various forms of training, and awareness campaigns, particularly in rural regions, people can learn about the country's traffic laws and become more aware of them. It would be more advantageous if it were included in the core textbook. Additionally, it is imperative to rigorously adhere to and follow traffic laws. Unfit automobiles should not be allowed on the road, and inexperienced drivers should not be given licenses.Different sources to spread information regarding traffic rules have been found in Bangladesh. Among these, the radio is less efficient in raising knowledge and awareness of traffic rules than the TV, Internet, mobile, etc. Hopefully, by airing various knowledge- and awareness-related programs about traffic rules on TV and disseminating them online, particularly with the aid of social media, the Bangladeshi people will be more aware of the rules that govern the country's roads.Newspapers are another excellent resource for spreading knowledge and awareness of traffic regulations.

Due to urbanisation and population growth, Bangladesh needs a sustainable transportation infrastructure that can accommodate both current and future demand and is well-versed in traffic laws and regulations. Furthermore, "road safety" needs to be a social movement. This situation suggests the need for a quick response from the public health perspective or a program to raise awareness of the issue.

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CONFLICT OF INTEREST

There is no conflict of interest.

REFERENCES

Ahsan, D. H. 2012, ‘Road safety in Bangladesh’, *Forum, The Daily Star*, pp. Volume-6, Issue-7, July.

Hasanat-E-Rabbi, S. *et al.* (2021) “Exploring the relationships between demographics, road safety attitudes, and self-reported pedestrian behaviours in Bangladesh,” *Sustainability,* 13(19), p. 10640. Available at: https://doi.org/10.3390/su131910640.

Hossain, M.M. *et al.* (2020) "Road traffic accidents in Bangladesh: Why people have poor knowledge and awareness about traffic rules?" *International Journal of Critical Illness and Injury Science*, 10(2), p. 70. Available at: https://doi.org/10.4103/ijciis.ijciis_65_19.

Jacobs, G.D. and Baguley, C.J. (1995) "Towards a strategy for improving road safety in developing countries." United Kingdom: Crowthorne Berkshire.

Peden, M. *et al.* (eds) (2004) *World report on road traffic injury prevention*. publication. Geneva: World Health Organization. Available at: http://apps.who.int/iris/bitstream/handle/10665/42871/9241562609.pdf;jsessionid=D0325411F92C07AADCD93FC798A574AA?sequence=1.

UN raises child accidents alarm (2008) *BBC News*. BBC. Available at: http://news.bbc.co.uk/2/hi/in_depth/7776127.stm (Accessed: July 20, 2022).