

# Road Users' Comprehension about Traffic Laws and Traffic Control Devices

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**ABSTRACT:** Pedestrian safety issues are one of the fundamental concerns relating to road safety. The present high rate of severe road accidents can be minimized by comprehending the safety issues properly. For the perfect understanding of the road users about traffic laws and traffic control devices, a survey was conducted. In this study, the respondents' assessment of pedestrian involvement in traffic control devices and pedestrian related laws were focused. Responses from all types of road users were included in this research. Road users' personal experiences and demographic characteristics were reflected on the survey. Among the 260 respondents, the majority of road users believe that children should be taught about pedestrian safety at home and in school. Also a significant proportion of respondents do not understand the traffic control devices that are placed on roads. The road transport authority may emphasize on the proper understanding of general road users' knowledge of traffic safety.

**KEYWORDS:** Pedestrian safety, traffic laws, traffic control devices, traffic comprehension.

## I. INTRODUCTION

Traffic control devices are a vital element of the highway environment as they provide one of the primary means of communicating important information about the roadway to road users. The primary purpose of traffic control devices is to regulate, warn, and/or guide traffic in such manner as to promote the safe and uniform operation of motorized and non-motorized traffic using the roadway. Pedestrian safety issues are very important to the transportation authority because of the vulnerability of individuals. Traffic laws help the human traffic to move safely and comfortably. Human perception of the information on road signs is a critical factor in determining the safe use of both the vehicle and the interacting environment

[1]. Research conducted in Canada and USA by Dewar, Kline, & Swanson, (1994) using 480 volunteer licensed drivers evaluated age differences in comprehension of traffic sign symbols. The result shows that older drivers had poorer understanding than younger ones in 39% of the symbols examined [2]. Research concerning traffic sign comprehension dates back to 1966 and that early studies focused on evaluating user understanding levels of local traffic signs and most of the results indicated that the general comprehension performance was far from satisfactory [3]. Determination of the effectiveness of alternative pedestrian sign and signal messages was analyzed by some researcher such as Robertson [4] and Zegeer [5].

So far, little attention has focused on the comprehension of current pedestrian-related traffic control devices and laws. In 1980 and again in 1990, the Pedestrian Safety Committee of the Transportation Research Board identified "pedestrian comprehension of traffic control devices" as a priority issue [6].

In Our Dhaka City, there is a low level of comprehension of road signs by road users which in turn results to increase road accident. This study aims at to assess the level of comprehensibility of some traffic control devices and traffic laws by users in Dhaka city to increase the level of understanding of the traffic control devices.

## II. RESEARCH OBJECTIVES

The overall objective of this research project is to identify the road crossing pattern the pedestrian of the road users' comprehension about traffic laws & traffic control devices of Dhaka city. The specific objective is a follow.

- To identify specific traffic control devices that may be misunderstood by a number of pedestrians.

- To assess the road traffic knowledge or awareness and traffic laws related to pedestrian safety.
- To determine the pedestrians understanding of traffic pattern.

**III. RESEARCH METHODOLOGY**

users within Gulshan and Notun Bazar area. Two hundred and sixty people participated on the survey. The questionnaire survey section made up of two sections. In the first section, short questions were designed to know information about the pedestrians’ demographic characteristics such as the age, gender, and employment etc. The main section was made up what was the most likely reason why pedestrian understanding about traffic system comprising of traffic signs, traffic signal and road marking questions etc.

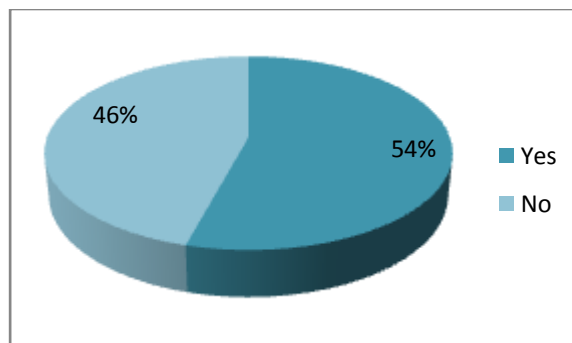
For this purpose, the following questions had been made.

1. Have you ever been involved in an accident, either as pedestrian or as a driver?
2. Have you ever been received any advice about pedestrian safety either in school, on TV or in Newspaper?
3. Who should teach children about safe pedestrian safety?
4. Do you believe that children are being taught about pedestrian safety in school?
5. Do you think, A “Walk” signal at an intersection means you may cross the road safely because on traffic will drive through?

• **Question-01:**

**Table 1:** Have you ever been involved in an accident, either as pedestrian or as a driver?

Yes	No
141 persons	119 persons



**Figure 1:** Have you ever been involved in an accident, either as pedestrian or as a driver?

6. What is the most likely reason why pedestrian accidents happen?
7. How much do pedestrian account for about of all traffic related deaths?
8. In the major arterial roads, can you legally cross a street only at a traffic signal or zebra crossing?
9. If there is no sidewalk, you should always walk on the right hand side of the road surface?
10. If you wear white clothing along a roadway at night, drivers will be able to see you from a safe distance?
11. When you are driving a school speed zone, you may resume your speed as soon as you end speed zone?
12. As a road user, do you understand the basic traffic signs that are placed on the roads?
13. The following sing is placed approximately 200 feet in advance of a crosswalk
14. In which figure, as a driver you are allowed to change the lane on road?

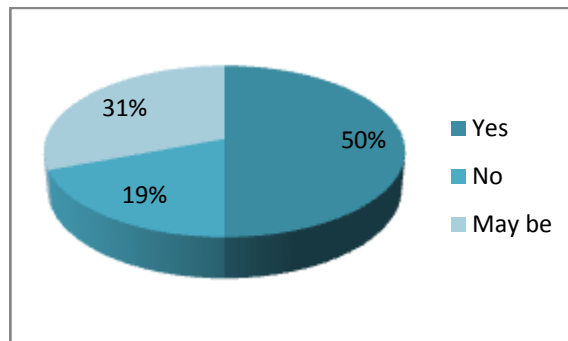
**IV. DATA ANALYSIS AND RESULTS**

After completion of data collection from the field locations, the results obtained from the road users were classified. A total number of 260 road users’ opinions were considered to analysis their basic understanding of traffic laws and traffic control devices. The detailed analysis of the results was summarized in the following.

• **Question-02:**

**Table 2:** Have you ever been received any advice about pedestrian safety either in school, on TV or in Newspaper?

Yes	No	May be
130 persons	50 persons	80 persons

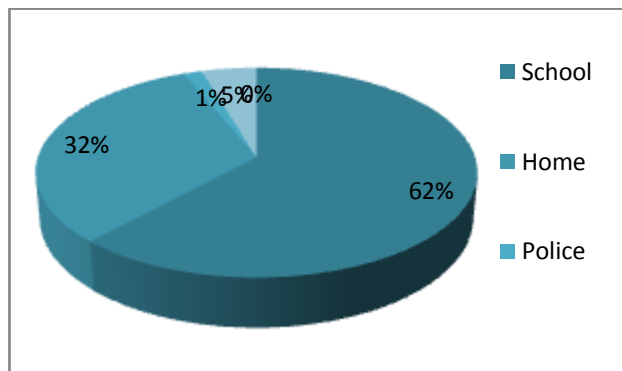


**Figure 2:** Have you ever been received any advice about pedestrian safety either in school, on TV or in Newspaper?

• **Question-03:**

**Table 3:** Who should teach children about safe pedestrian safety?

School	Home	Police	Religious Institutions	Private Tutor
161 persons	83 persons	4 persons	12 persons	0 person

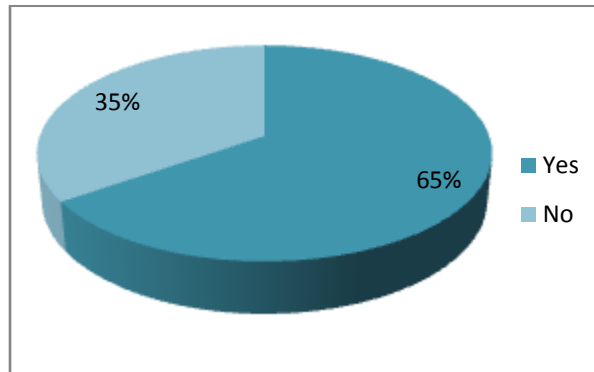


**Figure 3:** Who should teach children about safe pedestrian safety?

• **Question-04:**

**Table 4:** Do you believe that children are being taught about pedestrian safety in school?

Yes	No
170 persons	90 persons

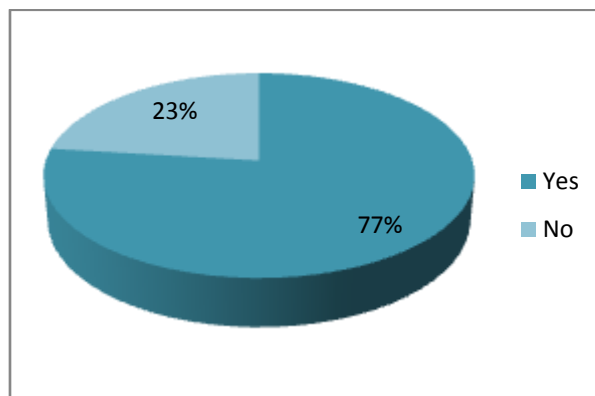


**Figure 4:** Do you believe that children are being taught about pedestrian safety in school?

• **Question-05:**

**Table 5:** Do you think, A “Walk” signal at an intersection means you may cross the road safely because on traffic will drive through?

Yes	No
200 persons	60 persons

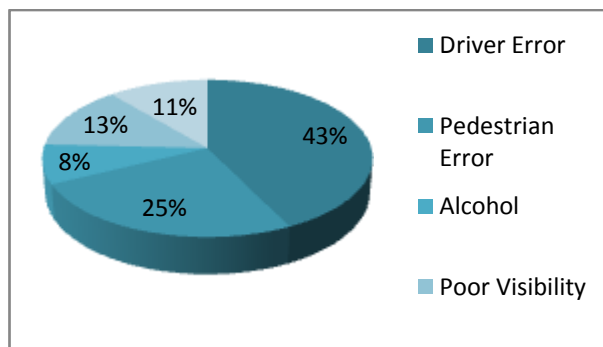


**Figure 5:** Do you think. A “Walk” signal at an intersection means you may cross the road safely because on traffic will drive through?

• **Question-06:**

**Table 6:** What is the most likely reason why pedestrian accidents happen?

Driver Error	Pedestrian Error	Alcohol	Poor Visibility	Others
111 persons	65 persons	21 persons	34 persons	29 persons

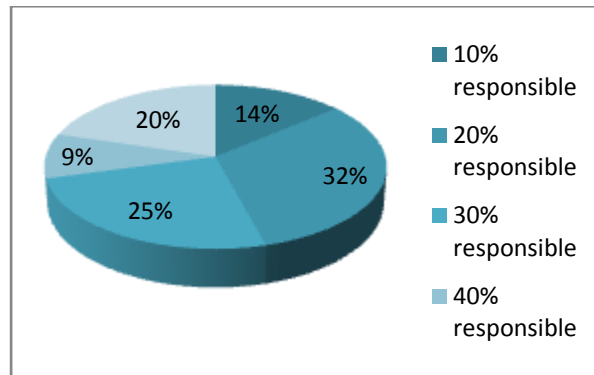


**Figure 6:** What is the most likely reason why pedestrian accidents happen?

• **Question-07:**

**Table 7:** How much do pedestrian account for about of all traffic related deaths?

10% responsible	20% responsible	30% responsible	40% responsible	50% responsible
36 persons	83 persons	65 persons	23 persons	53 persons

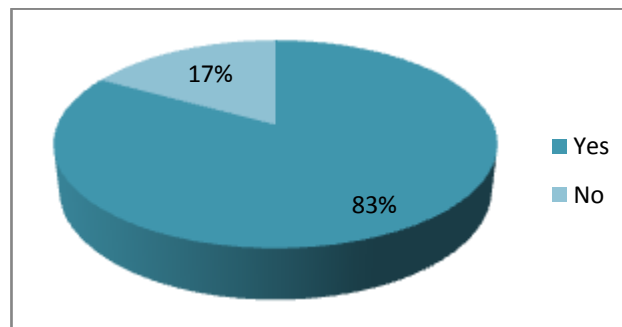


**Figure 7:** How much do pedestrian account for about of all traffic related deaths?

• **Question-08:**

**Table 8:** In the major arterial roads, can you legally cross a street only at a traffic signal or zebra crossing?

Yes	No
216 persons	44 persons

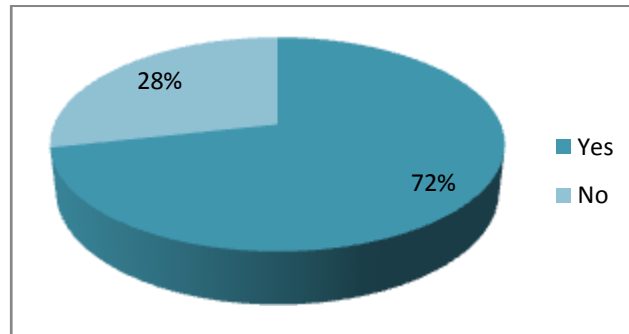


**Figure 8:** In the major arterial roads, can you legally cross a street only at a traffic signal or zebra crossing?

• **Question-09:**

**Table 9:** If there is no sidewalk, you should always walk on the right hand side of the road surface?

Yes	No
186 persons	74 persons

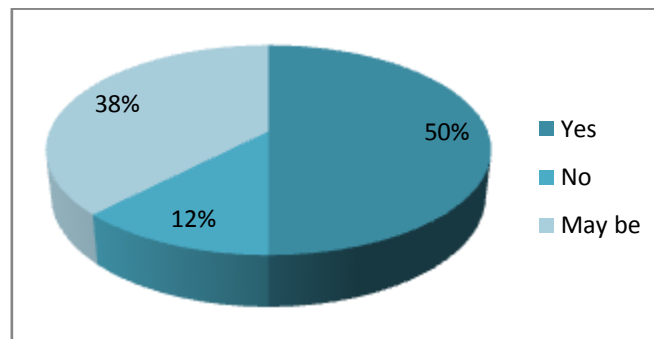


**Figure 9:** If there is no sidewalk, you should always walk on the right hand side of the road surface?

• **Question-10:**

**Table 10:** If you wear white clothing along a roadway at night, drivers will be able to see you from a safe distance?

Yes	No	May be
130 persons	32 persons	98 persons

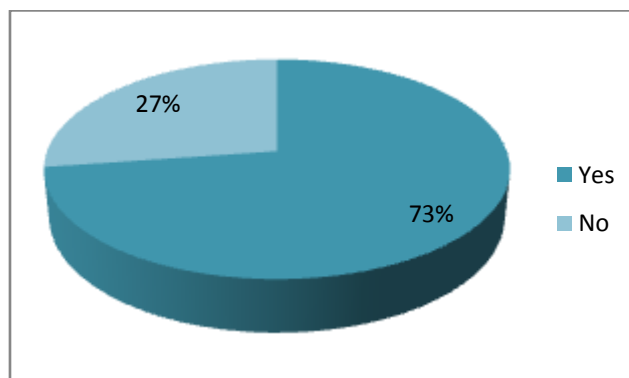


**Figure 10:** If you wear white clothing along a roadway at night, drivers will be able to see you from a safe distance?

• **Question-11:**

**Table 11:** When you are driving a school speed zone, you may resume your speed as soon as you end speed zone?

Yes	No
189 persons	71 persons

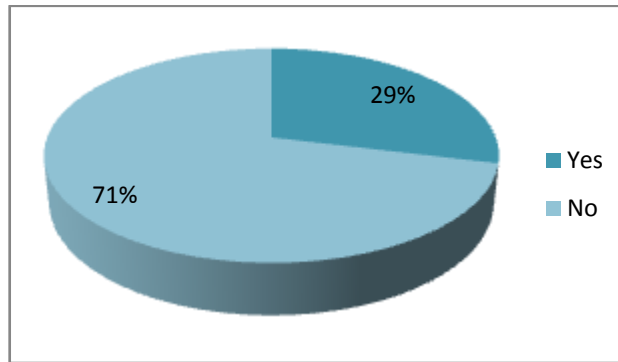


**Figure 11:** When you are driving a school speed zone, you may resume your speed as soon as you end speed zone?

• **Question-12:**

**Table 12:** As a road user, do you understand the basic traffic signs that are placed on the roads?

Yes	No
75 persons	185 persons



**Figure 12:** As a road user, do you understand the basic traffic signs that are placed on the roads?

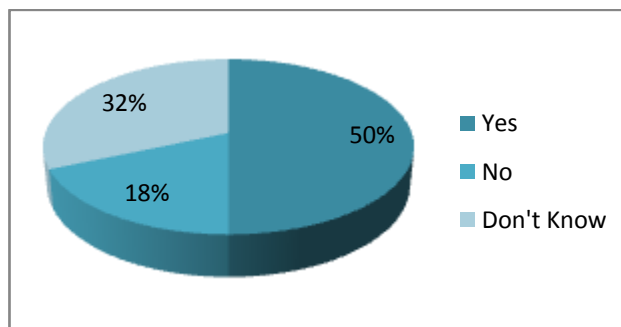
• **Question-13: The following sign is placed approximately 200 feet in advance of a crosswalk?**



Figure 13: Walk Sign

**Table 13:** The following sign is placed approximately 200 feet in advance of a crosswalk?

Yes	No	Don't know
130 persons	48 persons	82 persons



**Figure 14:** The following sign is placed approximately 200 feet in advance of a crosswalk?

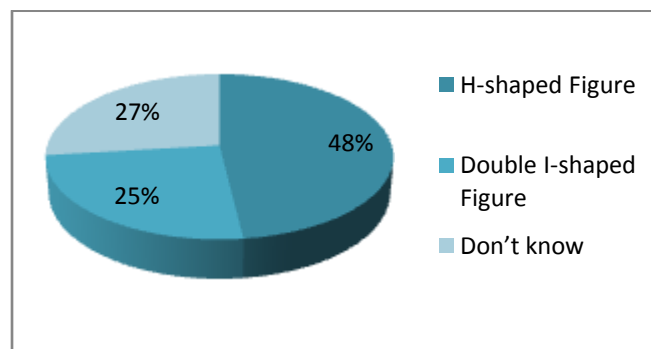
- **Question-14: In which figure, as a driver you are allowed to change the lane on road?**



**Figure 15:** Road lane change

**Table 14:** In which figure, as a driver you are allowed to change the lane on road?

H-shaped Figure	Double I-shaped Figure	Don't know
125 persons	65 persons	70 persons



**Figure 16:** In which figure, as a driver you are allowed to change the lane on road?

## V. CONCLUSIONS

The comprehension of traffic control devices by road users is very important factor in enhancing maximum safety on the roads. After assessing the results of the questionnaires, the research team reached the following conclusions.

- The results from this study showed that pedestrian generally had poor understanding of traffic control devices.
- The road users claimed that half of the accidents occurred by drivers and one-third accidents occurred by pedestrians.
- The level of first-hand knowledge or experience in a pedestrian accident was relatively low.
- The majority of road users believed children should be taught about pedestrian safety at home and in school.
- The majority of road users underestimated the true ratio of pedestrian fatalities to all traffic fatalities.
- A significant proportion of respondents did not understand the flashing 'DON'T WALK' signal.

- The advance crossing and school crossing signs are misunderstood by the majority of respondents.
- A significant number of respondents did not know to walk against traffic when no sidewalk provided.
- A significant number believed that a 'WALK' signal means no turning vehicles would cross their path.
- Only half of the drivers had understanding about the lane changing rule.

## VI. RECOMMENDATIONS

Based on the above conclusions the research team developed several recommendations. The relationship between a pedestrian level of comprehension and involvement in a traffic accident which has not been considered in this research should be studied in the future. Future research should also focus on obtaining the correlation between response time and comprehension level among various road users in Dhaka City. The comprehension level among the road users can be improved by sanitizing the license issue procedure in such a way that, all prospective drivers must undergo training through



which they will learn a lot and be familiarized with all necessary traffic signs before been issued with a driving license. A more comprehensive and systematic approach is required to fully understand the role of information layout and organization on driver and pedestrians comprehension and interpretation of guide signs. Also enough pedestrian safety programs should be introduced to the road and law enforcement activities should be strictly maintained.

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