

Awareness and Implication of Road Traffic Signs among Pedestrians in Warri Metropolis

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Abstract: Road traffic signs and road markings are silent speakers to the road users. This study was designed to find out the awareness and implications of road traffic signs among pedestrians in Warri metropolis of Delta State. The study employed the descriptive survey research design method. A sample size of 300 pedestrians randomly selected from five areas in Warri metropolis were employed to participate in the study. Simple random sampling technique was used. Structured questionnaire which included the different road traffic signs was used to collect data. Data collected were analyzed using percentage method, mean and t-test analysis. Finding from the study showed that pedestrians in Warri metropolis have the awareness of road traffic signs but they don't have good knowledge of their meaning. It further revealed that the application and obedience to the different road traffic signs will help to reduce the rate of accidents and road congestion. Significantly, male pedestrians were found to be more aware and knowledgeable on road traffic signs ($P > 0.05$). Conclusion was drawn and recommendation were made based on the findings that the overall awareness and application of road safety signs among pedestrians should be given a priority by all stakeholders; Road safety officers should help to carry out awareness campaign and orientation regularly to all pedestrians through the media to create awareness of road traffic signs and their application.

Key Words: Road traffic signs; awareness; pedestrians; implications; gender.

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I. Introduction

Sign language is vital to the safety and survival of man on the road, air or water. Every safety-minded society in meeting emerging challenges has evolved certain codes to serve as a road map in certain environments and situations. Hence, Nigeria has designed a Road Traffic Code as a guide for road users, motorists and pedestrians. The Code includes road signs, road markings, computerized traffic lights, traffic control signals, among others, with communicative symbols where necessary or applicable. Accordingly, the language of a road traffic code is signs-dependent, and is designed in a manner that could be easily understood by all categories of road users (Uwem, Nsikan & Promise, 2015).

The road users are people using the road either by any means.

They include pedestrians, cyclists, motorists, their passengers, and passengers of on-road public transport, mainly buses and trains. The Federal Road Safety Commission, Nigeria identifies eight categories of road users in Nigeria. These are the motorist, the pedestrian, the cyclist, the motorcyclist, the child, the animal, the hawkler and the trader. The motorist refers to the class of road user enclosed in motor vehicles. The pedestrian is a person who is walking on the road, especially in an area also used by motorists (McGregor, 2009). A pedestrian is a person traveling on foot, whether walking or running. In some communities, those traveling using tiny wheels such as roller skates, skateboards, and scooters, as well as wheelchair users are also included as pedestrians. In modern times, the term usually refers to someone walking on a road or pavement (Uwem, Nsikan & Promise, 2015).

These signs, with or without inscriptions, could be symbolic, iconic, indexical or any combination of these, and are placed on or by the road for safety purposes, with the expectation that road users' understanding could affect a corresponding compliance which, to a larger extent, would reduce the rate of road accidents (Lester, 2011; Ibrahim, Day, Hirshon, El-Setouhy, 2012). There are many possible precautionary safety measures that can be taken to reduce road accidents, one of which is the provision of safety signs. Safety signs are intended to identify and warn road users against specific hazards without the use of words (Uwem, Nsikan and Promise, 2015). They may also describe safety precautions, advise users on the actions to take, or provide other directions that can eliminate or reduce hazards. Safety signs provide good communication to users, as failure to effectively convey warning information can lead to injury or death. This is because if safety signs are not readily identifiable, then their communicative value is suspect (Finegan, 2008; Iyorza, 2008).

Traffic signs or road signs are signs erected at the side of or above roads to give instructions or provide information to road users. The earliest signs were simple wooden or stone milestones. Later, signs with directional arms were introduced, for example, the fingerposts in the United Kingdom and their wooden counterparts in Saxony. Traffic signs and road markings are silent speakers to the road users. Road signs provide information on speed limits and road conditions. They inform motorists on what to do, what to watch out for and where to drive. Simpson (2009) lays emphasis on the legibility and visibility of road signs in the day and night. Every road user should know the marking and signs on the road and the meaning there of (Colin & Partners, 2009). Many different traffic signs are to be seen on the roads. They give advance information about road conditions ahead. Road traffic signs could be mandatory, regulatory, prohibitory, or informative. White, yellow, blue, red and black colours are used for road signs and the letterings, while the shapes vary depending on the messages they convey as indicated below:

Mandatory Signs: These signs are used to inform road users of certain laws and regulations to provide safety and free flow of traffic. These include all signs which give notice of special obligation, prohibition or restrictions with which the road users must comply. The violation of these signs is a legal offence (Redhwan & Karim, 2010; Ibrahim, Day, Hirshon, El-Setouhy, 2012). Some of the signs, which fall under this category, are provided as follows.



Source: FRSC's Nigeria Highway Code, 2008

Cautionary Signs:

These signs are used to warn the road users of the existence of certain hazardous condition either on or adjacent to the roadway, so that the motorists are cautious and take the desired action (FRSC, 2008).

Source:



FRSC's Nigeria Highway Code, 2008

Accident on the road is one of the most prominent causes of injury, incapacitation and death in the world. For quite a long time, Africans, and indeed Nigerians, have been deluded to believe that road accident is an integral element of human fate. It is also believed to be the outcome of spiritual manipulation by wicked forces. This belief tends to inspire considerable indifference to the prevalence of road accident, since injury or death resulting from traffic crash is accepted as part of human destiny (Department for Transport, 2008).

There is no doubt that technological innovations have been brought to bear in vehicles and the roads on which the vehicles and pedestrians ply. Of equal importance is the fact that urbanization and population expansion also affect the manner of driving on the highways, the result being that ill-informed drivers cannot help but get themselves and other motorists into avoidable road traffic crashes with fatal consequences.

It is assumed that traffic signs which are clear, simple and understandable could be effective in reducing road accidents. This being so, is it possible that effective traffic signs can reduce the incidents of road carnage in Warri metropolis of Delta State, the main city of Warri South Local Government Area of Delta State of Nigeria? Therefore, this study attempts to assess the awareness and implication of road traffic signs among pedestrians in Warri metropolis of Delta State.

In the city of Warri, as in other cities of the world, there are road signs, markings, and signals, amongst others, which are meant to guide road users and ensure their safety. Most of the road signs alert motorists and other road users on significant road conditions such as a sharp bend ahead, failed or narrow bridge etc. Also, road markings show lane divisions and lane discipline, stop lines and pedestrian crossing. Computerized traffic lights indicate when and when not to move, while traffic control signals are displayed by traffic officers to ensure free-flow of vehicular and human traffic. The essence is to reduce the rate of road traffic crashes. In spite of these, unfortunately, accidents continue to occur, and somehow tend to be on the increase. Could it be that many road users are ignorant of the meanings of the signs, or do road users intentionally violate the traffic rules? Could the situation be blamed on the illegibility of these signs? Or are the signs not communicative enough? These questions necessitated the study.

II. Statement of the Problem

The capacity to respond to pedestrian safety is an important component of efforts to prevent road traffic accidents and injuries. Pedestrian collisions, like other road traffic crashes, should not be accepted as inevitable because they are both predictable and preventable. Each year, more than 270 000 pedestrians lose their lives on the world's roads. Many leave their homes as they would on any given day never to return (Department for Transport, 2008, WHO, 2009). Globally, pedestrians constitute 22% of all road traffic fatalities, and in some countries this proportion is as high as two thirds of all road traffic deaths (Uwem, Nsikan and Promise, 2015).

Millions of pedestrians are non-fatally injured – some of whom are left with permanent disabilities. These incidents cause much suffering and grief as well as economic hardship in spite of the availability of road traffic signs which ought to prevent road traffic congestion and accidents among all categories of road users which include the pedestrians. It was based on the above stated situation that the problem to the study arouses and stated as thus what is the awareness level and implication of the road traffic signs to pedestrians in Warri metropolis of Delta State?

The purpose of this study was to find out the awareness level and implication of road traffic signs among pedestrians in Warri metropolis.

Research Questions

1. What is the awareness level of pedestrians on road traffic signs in Warri metropolis?
2. Do pedestrians in Warri metropolis have the knowledge of the different road traffic signs?
3. Do pedestrians in Warri metropolis obey the road traffic signs while using the road?

The importance of this study cannot be over emphasized it will help to determine the awareness level of pedestrians in Warri metropolis on the use of road traffic signs. The study will help to reveal the level of knowledge of pedestrian on the different road traffic signs and their uses.

Findings from the study will help to serve as a source of comparison to other researchers' result. It may also serve as a source of literature to subsequent researchers who may carry out further study in this area of knowledge.

The scope of this study was delimited to pedestrians in Warri metropolis of Delta State in regards to their awareness and implication of the knowledge safety performance on the road.

III. Methodology

This study is an empirical paper which adopted the descriptive survey designed to find out the level of awareness and implication of road traffic signs among pedestrians in Warri metropolis of Delta State. The population of the study comprised of all pedestrians in Warri metropolis of Delta State. The population of

pedestrians in Warri metropolis is thirtythousand (30,000) (Delta State Ministry of Transport, Warri South, 2018).

The sample size of the study consisted of threehundred (300)(150 males and 150 females) pedestriansrandomly selected from five areas in Warri metropolis of Delta State. The selected areas were Edjeba, Deco, Ogunu, Okere, Ajamimogha areas of Warri.The sampling technique used was the simple sampling technique. The ballot and the first contact methods of the simple sampling method were adopted. The sampled areas were selected through the ballot method while the respondents were selected through the first contact method.

The instrument used for data collection in the study was questionnaire. The questionnaire consisted of two sections. Section “A” consisted of respondents’ personal data while section “B” comprised of statement items designed to obtained responses from respondents.

The research instrument (questionnaire) used in the study went through face and content validity. The face and content validity of the instrument was done by two research experts in the department of Health, Safety and Environmental Education, University of Benin, Benin City. The reliability of the instrument was established at 0.83 coefficients level using the Pearson Product Moment Correlation Coefficient through test retest method.

Data in the study was collected by the researchers and two research assistants. The administered instrument was collected immediately from the respondents after they were duly responded to. In all, there was 100% retrieval rate.Data collected were analyzed through percentage method.

IV. Findings

Research Question One:

What is the awareness level of pedestrians on road traffic signs in Warri metropolis?

Table: Analysis of the awareness level of pedestrians on road traffic signs in Warri metropolis

S/N	Pedestrian’s Awareness of road traffic signs	Yes (%)	No (%)
1	Are you aware that there are road traffic signs?	272 (90.7%)	28 (9.3%)
2	Do you know any road traffic sign?	204 (68%)	96 (32%)
3	Have you seen any road traffic signs on the road while walking?	286 (95.3%)	14 (4.7%)
4	Are you aware that the road traffic signs apply to both pedestrians (trekkers) and motorists on the road?	112 (37.3%)	188 (62.7%)
5	Do you know that there are some road traffic signs designed mainly for pedestrians using the road?	136 (45.3%)	164 (54.7%)

The analysis in the Table 1 above,it was found that the percentage of respondents who responded yes to question item 1-3 was higher than the percentage of them that responded No to them. This means that the respondents have the awareness that there are road traffic signs (90.7%), know some of the road traffic signs (68%), and have seen road traffic signs on the road while walking on the road. On the other hand, it was found that most of the pedestrians (62.7%) are not aware that the road traffic signs applied to both motorists and pedestrians (trekkers) using the road; also, 54.7%of the respondents are not aware that some of the road signs are designed mainly for pedestrians using the road.

Research Question Two

Does a pedestrian in Warri metropolis have the knowledge of the different road traffic signs?

Table 2: Analysis of the knowledge of different road traffic signs among pedestrians in Warri metropolis

S/N	Items	Yes (%)	No (%)
1	Do you know most of the compulsory road traffic signs such as U-turn prohibited, left and right turn, compulsory ahead right and left turn; compulsory horn; U-turn right and left prohibited; one way; no way both direction, give way, stop; overtaking prohibited; etc.	123 (41%)	177 (59%)
2	Do you know most of the cautionary road signs such as left and right curve, right and left pin bend; narrow road ahead, road widen ahead; slippery road; loose gravel; pedestrian crossing; unguided level crossing; major road ahead; round about; staggered intersection; T-intersection; guarded level crossing; Y-intersection; Man at work; cross road; steep ascent and decent; side road right and left, etc.	94 (31.3%)	206 (68.7%)

From the analysis in Table 2above, it was found that the respondents (pedestrians) do not have good knowledge of most of the road traffic signs used on the roads for different purpose since the percentage of respondents (41% & 31.3%) who responded Yes to the question that they know most of the road traffic signs is less than the percentage (59% & 68.7%) of them that responded No to the question.It was revealed that the

respondents awareness level of the compulsory road traffic signs 41%) are higher somehow than that of the cautionary road traffic signs (31.3%).

It was found from oral interview of the respondents that the common compulsory road traffic signs that most of the pedestrians are aware of are U-turn prohibited, left and right turn, one way and stop. Whereas the ones they are not aware of are compulsory ahead right and left turn; compulsory horn; U-turn right and left prohibited; no way both directions, give way and overtaking prohibited.

On cautionary road traffic signs it was found that they are aware of and as well have the knowledge of left and right curve, narrow road ahead, pedestrian crossing, roundabout; T-intersection and Y-intersection. However the ones they ticked they are not aware of are right and left pin bend; road widen ahead; slippery road; loose gravel; unguided level crossing; major road ahead; staggered intersection; guarded level crossing; Man at work; cross road; steep ascent and decent; side road right and left

Research Question Three

Do pedestrians in Warri metropolis obey the road traffic signs while using the road?

Table 3: Analysis of respondent's application and obedience of the road traffic signs

S/n	Items	Yes (%)	No (%)
1	Do you use the road according to the road traffic sign?	132 (44%)	168 (56%)
2	Do you often get to pedestrian (zebra) crossing before crossing the road?	78 (26%)	222 (74%)
3	Do you think most pedestrians obey the road traffic signs in town?	62 (20.7%)	238 (79.3%)
4	Do you think road accidents and congestion will be reduced if every road users apply and obey the road traffic signs?	198 (66%)	102 (34%)

Table 3 above reveals the pedestrians obedience and implication of the road traffic signs in Warri metropolis of Delta State. From the responses and analysis, it was found in item 1 that 44% of the respondents said they used the road according the road traffic signs while 56% said they don't usually use the road according to the road traffic signs.

Only 26% said they often get to the pedestrian (zebra) crossing before they cross the road while 74% said they don't usually get to pedestrians (zebra crossing) before crossing the road. 20.7% acknowledged that most pedestrians obey the road traffic signs while 79.3% said No the question. In item 4, it was found that the application and obedience of pedestrians to road traffic signs will help to reduce the occurrence of road accidents and traffic congestion as most respondents (66%) responded Yes to the question as against 34% respondents who responded No to the question.

From the above analysis, it can be conclude that pedestrians do not obey and applied the road traffic signs even though they are aware that the obedience and application by road users will help to reduce the occurrence of road traffic accidents.

H⁰1: there is no significant difference in the level of awareness of road traffic signs between male and female pedestrians in Warri Metropolis of Delta State.

Table 4: t-test Analysis of Significant difference between male and female Pedestrians' Level of awareness of road traffic Signs.

Variables	No	Mean	SD	t-cal	t-Crit	Df	P	Decision
Male	150	8.45	11.56					
Female	150	8.19	11.58	0.20	1.96	298	0.05	Rejected

P > 0.20

From the t-test analysis in Table 4 above, it was found out that the t-calculated value (0.20) was less than the t-critical value (1.96) at 0.05 significant under degree freedom 298. Thus, the null hypothesis stated was rejected. This indicates that there is significant difference in the level of awareness of road traffic signs between male and female pedestrians in Warri Metropolis of Delta State.

H⁰2: There is no significant difference in the level of knowledge of road traffic signs between male and female pedestrians in Warri Metropolis of Delta State.

Table 5: t-test analysis of significant difference between male and female pedestrians' level of knowledge of road traffic signs.

Variables	No.	Mean	SD	t-cal	t-Crit	Df	Sig	Decision
Male	150	2.87	12.01					
Female	150	2.57	12.04	0.22	1.96	298	0.05	Rejected

P> 0.22

From the t-test analysis in Table 5 above, it was found out that the t-calculated value (0.22) was less than the t-critical value (1.96) at 0.05 significant under degree freedom 298. Thus, the null hypothesis stated was rejected. This indicates that there is significant difference in the level of knowledge of road traffic signs between male and female pedestrians in Warri Metropolis of Delta State.

V. Discussion of Findings

The findings from the study revealed that pedestrians in Warri metropolis have the awareness that there are road traffic signs but majority of them don't understand the meaning of most of the road traffic signs. This may be due to several factors such as the inadequacy of the different road traffic signs in the area, in addition to educational background of the pedestrians. The results of the finding shows that pedestrians have the awareness of the road traffic signs is in line with the result of Uwem, Nsikan and Promise (2015) who indicated that the majority of the respondents in their study understand the meanings of road signs. This according to them implies that the road signs are communicative to the extent that the road users can interpret them. This according to them also, can be attributed to many factors including the fact that many of the road users are familiar with the traffic signs, and, overtime, they are able to interpret them. Secondly, it is believed that the signs are clear enough for the road users to comprehend within their short contact with the signs.

But the result of their poor understanding is contradicting the above result. Every road user is assumed to have a prior knowledge of recognizing the signs as information aided by visual competence. Uwen (2011) has stated that the realistic interpretation capacity enables road users to show the expected response on approaching such a road traffic sign. The background knowledge of the users on the road traffic signs eases comprehension and makes it less time-consuming.

From the t-test analysis, it was found that there is significant difference on the awareness and knowledge of road traffic signs between male and female pedestrians in Warri Metropolis of Delta State. The male pedestrians were found to be higher (8.45; 2.87) in terms of their mean scores in both awareness and knowledge of road traffic signs than the female pedestrians (8.19; 2.57) respectively. This difference could be attributed to the level of activeness of the male pedestrians in road activities than the female counterparts.

Implications of the Study

This study has demonstrated that though pedestrian have the awareness of some of the road signs but they do not have the knowledge (meaning and applications) of the road traffic signs. The implication of the above is that, there may be increase in the rate of road traffic accidents among pedestrians especially among the females whose knowledge is lower compared to their male counterparts. Again, it may significantly lead to increase in loss of lives and thus affect the work and nation's economic since pedestrians constitute a large number of the a nation's workforce.

Based on this, it is therefore necessary that comprehensive safety education on road traffic signs and its application be carried out earnestly with involvement of both gender from all aspects of the community works of life or economic background.

VI. Conclusion

In our effort to curb the incessant road traffic accidents, undertaking proper road safety measures are the best available interventions. The finding from this study had shown that pedestrians in Warri metropolis have the awareness that there are road traffic signs but majority of them don't have good knowledge of the meaning of the different road traffic signs, though they are of the view that application and obedient to the different road traffic signs will help to reduce the rate of accidents and road congestion. Based on this, it is the researchers' plight that the overall awareness and application of road safety signs among pedestrians should be given a priority.

VII. Recommendations

Based on the finding of this study and the conclusion drawn, the following recommendations were made.

1. Road safety officers should help to carry out awareness campaign and orientation regularly to all pedestrians through the media, churches and mosques to create awareness of road traffic signs and their application.

2. The relevant agencies, in particular the Nigeria Police and the Federal Road Safety Commission, should intensify enlightenment campaigns on the meaning of road signs and the importance of compliance by road users.
3. They should also be out on the road to physically enforce compliance with the road signs.
4. The agencies should commission a study to ascertain why road users flout road traffic signs.
5. Road safety issues should be discussed among pedestrians; this could be carried out through periodic trainings.
6. Government should make an effort to increase road safety measures through sign boards, posters.
7. Mass media should be strengthened to reduce the morbidity and mortality in relation to road traffic accidents.

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