

Road Traffic Accidents in Nigeria: Causes and Preventive Measures.

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Abstract

Road accidents have become a normal and re-occurring phenomenon in Nigeria which constitutes a menace in modern times. Although both the developed and developing nations of the world have suffered from varying degrees of road accidents, the developing countries clearly dominates with Nigeria having the second highest rate of road accidents among 193 ranked countries of the world. Deaths from reckless driving are the third leading cause of death in Nigeria. In 2012, at least 473 persons died from a total of 1,115 vehicular accidents nationwide. Already in 2013, April may go down as the worst month in terms of road accidents as according to reported cases, April 3, 2013: A luxury bus and a smaller bus crashed on the Abuja-Lokoja Road, 18 died. April 5, 2013: A petrol tanker set luxury bus and articulated vehicle ablaze at Ugbogui village on Ore-Benin Expressway, 80 people were burnt beyond recognition. April 6, 2013: At Dazigan, 11 kilometers from Potiskum, Yobe State, 20 died in an accident. April 11, 2013: 10 died on the Damaturu-Gashua Road also in Yobe State. April 14, 2013: Seven died on the Abuja-Lokoja Road, a car ran into an articulated vehicle. April 15, 2013: Five died on the Asaba-Onitsha Expressway. By the middle of April, 142 people had died from reported motor accidents, 30 per cent of the 473 deaths recorded in 2012 had been covered in only 15 days! There could be more unreported cases, and as often happens, some of the injured die without making the statistics. This paper examines road traffic accident problems in Nigeria. The causes of accidents and their general preventive measures are discussed. A review of literature on road traffic accidents and its impact was done. The articles were accessed from public libraries, as well as online through internet search engines and relevant information extracted. There is need to view road traffic accident as a very serious issue requiring urgent attention aimed at preventing untimely deaths, reducing the health, social and economic impacts it portends to the average Nigerian.

Keywords: Road traffic accident, Nigeria, Vehicle, Causes, Preventive measures.

1. Introduction

The world's first road traffic death involving a motor vehicle is alleged to have occurred on 31 August, 1869. (http://en.wikipedia.org/wiki/Traffic_collision#cite_note-53). Irish scientist Mary Ward died when she fell out of her cousins' steam car and was run over by it. Road traffic accident occurs when a vehicle collides with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree or utility pole. Road traffic Accident, updated 4 January. (2013). Road traffic accident may also be defined as anything which happens by chance, anything occurring unexpectedly and un-designed. Odugbemi, O.O (2010). Since road traffic accident would rarely give warning, although reckless drivers should anticipate the consequences of their recklessness; human recklessness, carelessness or negligence should be avoided at all cost by road users.

On a lot of Nigerian roads across the country deterioration often begins with the origin of cracks or pot holes on the road pavements either at the edges or along the drive way which differs by their shapes, configuration, amplitude of loading, movement of traffic and rate of deformation. Agbonkhese, O. et al. (2013). The presence of these pot holes aside from human and vehicle related factors are known to be major causes of road traffic accidents in Nigeria. The immediate cause of a road accident may also be attributable to mechanical factor and carelessness in the form of omission to check and maintain the vehicle at the appropriate time. Road traffic accident is therefore an unexpected phenomenon that occurs as a result of the operation of vehicles including bicycles and handcarts on the public highways and roads. Accidents may be fatal, resulting in deaths of the road users (passengers, drivers or pedestrians), or minor when it is not severe enough as to cause substantial hardship.

However, the dividing line between minor and serious accident is very blurred as defined already.

Road traffic accidents occur worldwide but the incidence is more in developing countries. Annually, about 1.24 million people die each year as a result of road traffic crashes. Road traffic injuries are the leading cause of death among young people, aged 15–29 years. 91% of the world's fatalities on the roads occur in low-income and middle-income countries, even though these countries have approximately half of the world's vehicles. Half of those dying on the world's roads are “vulnerable road users”: pedestrians, cyclists and motorcyclists. Without action, road traffic crashes are predicted to result in the deaths of around 1.9 million people annually by 2020. Only 28 countries, representing 416 million people (7% of the world's population) have adequate laws that address all five risk factors (speed, drink-driving, helmets, seat-belts and child restraints). WHO Road traffic injuries; fact sheet N° 358. (2013).

In Nigeria today, hardly a day goes by without the occurrence of a road traffic accident leading to generally increasing incidence of morbidity and mortality rates as well as financial cost to both society and the individual involved. Information on some of these traffic accidents get to the news rooms of media houses and are aired while majority goes unreported. Nigeria has the highest road accidents rate as well as the largest number of death per 10,000 vehicles. Sheriff, M.A. (2009). One may be tempted to believe that the level of awareness on the causes of road traffic accidents is very low among Nigerians. Put differently, Nigerian roads have become killing fields without protection for their users. Travellers heave a sigh of relief if they make their destinations. Eze, B. (2012). Contrary to the general belief that Nigerians possess very low level of awareness on the causes of road traffic accidents, previous research has shown that Nigerians know quite a lot about what could cause road traffic accidents. Asalor, J.O. (2010).

Nigeria has the status of a developing country where road facilities are grossly inadequate to cater for the teeming population of road users. The discovery of oil in Nigeria came with its own problems. Prior to the ‘Oil boom’ in Nigeria, road accidents were rather rare. The oil boom brought along with it an increase in disposable income of the people which in turn increased vehicle ownership and brought about ‘rapid’ industrialization. This undoubtedly calls for improved road network accessibility. Roads were therefore built albeit without due attention to standard. These developments were not matched by adequate measures and control. Sheriff, M.A. (2009). Consequently, the roads grew to be a death trap for Nigerian citizens and road users. This is significant when the fact that majority of these injuries and deaths can be prevented. It becomes worrisome with the fact that the incidence is increasing. Eze, B. (2012). Effective interventions include designing safer infrastructure and incorporating road safety features into land-use and transport planning; improving the safety features of vehicles. To a very large extent, it is not entirely the poor deplorable condition of Nigerian roads that causes incessant road traffic accidents but a large proportion can be attributed to the carelessness and negligence of its road users.

The aim of this report is to investigate into the possible causes of road traffic accidents in Nigeria with the set objective of recommending general preventive measures.

2. Run-off

The causes of road traffic accidents depend on a list of factors which can be broadly divided into:

- (i). Vehicle operator or driver factors*
- (ii). Vehicle factors*
- (iii). Road pavement condition factors*
- (iv). Environmental factors.*

Road traffic accident can be caused by a single factor or a combination of these factors. Most safety studies come to the conclusion that vehicle operator or driver factors (or human error) are the main cause of accidents. Nevertheless, such a conclusion has not proved to be efficient in its capacity to offer adequate means to fight

against this error. In a purpose of better qualifying accident causation, TRACE, Traffic Accident Causation in Europe, after conducting substantive research works on Human Functional Failures (HFF) in road accident which it defined as the failures of the human functions which usually allow the road user to adapt to the difficulties of the driving task. It further described the HFF as the consequence of a gap between the requirements of a task and the capacities of an operator to face it, this gap resulting from the combined influence, and mostly inseparable, of the internal conditions characterizing this operator and external conditions to which he is confronted in the realization of his activity. TRACE was able to arrive at a conclusion as it puts it that: "it should be reminded that not all rupture or emergency situations lead to a traffic accident, human functions showing most of the time the ability to overcome the difficulties encountered, notably as a result of experience gained by the road users through practice. To improve safety, the conception of the driving system as a whole should take these human adaptive functions as the element to help and assist by any means, one of them being electronic devices. Toward this objective, an essential role of safety research is to well understand and precisely characterize the conditions under which such or such human functions may fail and the combinations of factors which contribute to these failures. This knowledge will allow determining the road users' needs in safety devices, and the constraints that these devices should comply with in order to be well suited to real life human functioning. In other words, this knowledge is a basis upon which could be defined an Ergonomics of Safety. Such a frame would remind that the purpose of any system offered to a human use should be conceived and built in a way of not being dangerous for its users. So should be the driving system. The road user is the core of the system, and human performance the measure of its effectiveness."

2.1. Driver factors

Driver factors in road traffic accidents are all factors related to drivers and other road users. However, unlike the findings of TRACE, in Nigeria, studies and road traffic accident records have clearly shown that the attitude of the Nigerian driver to driving code and etiquette is the single most important contributing factor as driver factors solely contributes to about 57 per cent of road traffic accidents and 93 per cent either alone or in combination with other factors.

Driver-related issues include:

(a). Speed and indiscriminate use of Sirens

An increase in average speed is directly related both to the likelihood of a crash occurring and to the severity of the consequences of the crash. Travelling too fast for prevailing conditions or above the speed limit contributes to road traffic accidents. The risk of being injured increases exponentially with speed much faster than the average speed. The severity of accident depends on the vehicle speed change at impact and transfer of kinetic energy. Though vehicles travelling slower than average speed are also at increased risk of road traffic accidents, most involved speed too fast for the conditions.

The indiscriminate use of Sirens coupled with very high speed rates by private or political public office holders such as bank vehicles' drivers' or government vehicles' drivers' has been reported to cause a lot of road traffic accidents in Nigeria. Recently, on 12th November, 2013 around 10.30am, a convoy of the Kogi state governor and a Toyota bus conveying key members of the Academic Staff Union of Universities, ASUU to a meeting in Kano was involved in a fatal accident in Lokoja. The traffic accident resulted in the death of a formal ASUU national president, Professor Festus Iyayi. Going by the nature of damage to the vehicles involved and the lost of life not to mention other passengers who sustained serious injuries, it is visibly noticed that both the Toyota bus and vehicles of the convoy were on top speed in spite of the deplorable nature of the road surface.

(b). Drink-driving and use of drugs

Drinking and driving increases both the risk of a traffic accident and the likelihood that death or serious injury will result. The risk of being involved in a traffic accident increases significantly above a blood alcohol concentration (BAC) of 0.04 g/dl. Doctors often advise patients to abstain from driving vehicles or operation of machineries while under certain drugs as these drugs are known to cause side effects of sleepiness and fatigue

thus leading to possible occurrence of accident.

(c). Distracted driving

There are many types of distractions that can lead to impaired driving, but recently there has been a marked increase around the world in the use of mobile phones by drivers that is becoming a growing concern for road safety. The distraction caused by mobile phones can impair driving performance in a number of ways, e.g. longer reaction times (notably braking reaction time, but also reaction to traffic signals), impaired ability to keep in the correct lane, and shorter following distances. Text messaging also results in considerably reduced driving performance, with young drivers at particular risk of the effects of distraction resulting from this use. Drivers using a mobile phone are approximately four times more likely to be involved in a traffic accident than when a driver does not use a phone. Hands-free phones are not much safer than hand-held phone sets as they too have been recorded to result in traffic accidents when shocking news is received while driving.

(d). Inexperience and unqualified drivers

Majority of Nigerian drivers do not possess the right authorization from government authorized agencies like the Federal Road Safety Commission, FRSC and are unqualified before driving cars on road pavements. This is the major reason most Nigerian drivers are ignorant of highway codes or traffic orders. They put their lives and those of other road users at the risk of traffic accidents. As a result of their inexperience, since they were never given any tutorial or taught how to use their vehicles on highways by government accredited driving schools, their decision making ability and reaction speed to traffic is bad.

(e). Non use of safety device and negligence of duty by government established agencies

Seat belts are safety device provided to safeguard a driver in the course of an accident. The use of vehicle seat belts also helps to ensure that the driver is in an upright and comfortable position thus enabling him/her to properly operate the vehicle. However, this provided safety device has been grossly abused thus increasing the risk of fatality among front-seat and of rear-seat passengers. Also majority of motorcyclists or their passenger do not wear helmets while plying the road thus exposing themselves and indeed other road users to road traffic accident.

Officials of government agencies such as the FRSC and Vehicle Inspection Office, VIO do not help matters as they have been seen to take their duties for granted by just being mere spectators each time they come across a driver or passenger not wearing seat belt, a driver using mobile phone while driving or a motorcyclist and passenger not wearing helmets.

2.2. Vehicle factors

The vehicle itself is a key factor when analyzing the remote causes of a traffic accident and it is incorporated with gadgets like, the horn, side mirrors, wipers, braking system, trafficators, headlights and break-lights (to mention just a few) so as to avoid road accident. Malfunction of any vehicle parts such as tyres, engines, braking systems, light systems can cause road traffic accidents. The reliability of the vehicle is itself a function of the condition of vehicle at every given time. Vehicle components and vehicle maintenance are the two main conditions which affect vehicle factors as it relates to causes of road traffic accidents.

2.2.1. Vehicle Components

The assembled components of a vehicle working effectively uniformly or abnormally as a unit will determine the occurrence of a traffic accident.

(a). Vehicle Design

The specific maximum load designed for a vehicle in its entire ramification goes a long way towards determining its stability on the road surface. When vehicles are subjected to stress over and above the provisions of the design specifications as is the case of a lot of vehicles plying the Nigerian roads, deterioration for the condition

of the vehicle in accelerated wear and tear sets in. Design defects affect the subsequent condition of the vehicle once it is put on the road and operated either normally or otherwise which may result to possible road traffic accidents.

(b). Vehicle Brake System

Brakes are generally applied to rotating axles or wheels. Vehicles use a combination of braking mechanisms which works jointly with the accelerator as the main synchronizer of the speeds of vehicles. Any malfunctioning of the brake sub-system should be taken very seriously as a potential source of unavoidable accident.

(c). Vehicle Body and Tyres

The firmness of the structure of a vehicle though less prominent attributes to some measure in causing road traffic accidents.

One of the dominant factor in determining the stability and safety of vehicles on the road is the tyres. Tyres designed and specified for cold regions are not those specified for temperate regions like Nigeria. However, this is not the case of most tyres used in Nigeria as vehicle owners do not take the specification of tyres into consideration when buying and fixing tyres onto their vehicles and this has been known to cause tyre raptures thus leading to traffic accidents. Some other tyre related causes of road accidents could be due to one or a combination of overinflated tyres, underinflated tyres, thread of tyres are thoroughly worn out.

(d). Vehicle Lights

The failure of vehicle light is a major factor in road traffic accident. Failure of vehicle lights has a tendency to misinform and mislead other road users thereby providing a good opportunity for an accident to occur.

Vehicle lights are very useful at all times during the daylight, in darkness and in poor/bad weather. For example, a failed trafficator light of a vehicle ahead will not normally provide the usual warning to other vehicles behind that it is about to undertake a turning manoeuvre and if for instance the driver of the vehicle behind has not allowed for a sufficient stopping sight distance or the vehicle has a faulty brake sub-system, this could result in an accident occurring.

(e). Vehicle Engine

The power house and heart of the vehicle is the engine sub-system which is responsible for bringing other parts of the vehicle into motion and one whose sudden failure on a highway is more likely to cause an accident if the volume of traffic is sufficiently high at that point in time. Even when the traffic is reasonably low, mismanagement of the failure by an experienced driver could cause road traffic accident.

2.2.2. Vehicle Maintenance

Acquiring a well designed vehicle and putting it onto road use is not enough to prevent the vehicle from causing road traffic accident. Actually not performing routine maintenance and checks on the vehicle can lead to deterioration of the vehicle sub-systems and thus expose the vehicle to causing road traffic accident as a well maintained vehicle is less likely to be involved in accidents. For example, if the brakes and tires are good and the suspension well-adjusted, the vehicle is more controllable in an emergency and thus, better equipped to avoid accidents.

2.3. Road pavement condition factors

Nigerian highways are arguably one of the worst and most dangerous in the world as they are often poorly designed, necessary important road facilities like drains are not adequately provided for and to top it up, they are rarely rehabilitated and are in dilapidated states. The deplorable states of the Nigerian highways create a scenario that makes vehicles and other road users susceptible to road traffic accidents. This further confirms that road traffic accidents are not just caused by human error or drivers' negligence.

2.4. Environmental factors

Environmental related conditions such as fog, sunrays, mist and rain in no small measure contributes greatly to the rate of road traffic accident in Nigeria today. Having stated earlier that most vehicles on Nigerian roads are poorly maintained, a poorly maintained vehicle for example on a rainy day is most likely to cause road traffic accident if the wipers are faulty and not functioning as the driver will be unable to see ahead.

3. Urban mobility menace, Gridlocks, Security breakdown and Criminal activities in relation to road traffic accidents in Nigeria

Monday, 7 October 2013 was World Habitat Day. It was marked in Lagos, Nigeria with a seminar having it's theme as Urban Mobility. Citing Lagos as a case study in Nigeria's urban mobility menace, Lagos is arguably one of the fastest growing cities in the world and it is not immune to the attendant problems of urbanization such as road traffic accidents, gridlocks, mobility, migration and security. As often is the case in Lagos anytime there is traffic gridlock (as shown in the figure below), there is always notably breakdown of law and order with drivers' of vehicles driving against traffic thus often at times resulting into road traffic accidents with resultant effects of morbidity and mortality rates as well as financial cost to both society and the individual involved. Aside from the breakdown of law and order, there is also a huge breakdown of security as criminals often take turns to rob commuters of their valuables and often at times lead to death or serious injuries to road traffic users who undoubtedly are the victims.



A typical road traffic gridlock in Lagos, Nigeria

Over the past two decades, urbanization trend has been fastest in developing countries. As an all inclusive generalization, the faster the rate of economic growth the more rapid its movement towards urbanization. Urban population is expected to grow steadily with an estimation showing that by 2050, 70 per cent of the world's population would live in urban areas. Lagos has the smallest land mass in Nigeria with about 356,861 hectares of

land. Of this, about 75,755 hectares are wetlands and its incredible population density, which is over 50 per cent of the national estimate, puts the state as the third largest megacity in two years. A United Nations (UN) estimate puts the present growth of Lagos at 3.2 per cent, while the metropolitan part of the metropolis, an area of about 37 per cent land mass, is abode for over 85 per cent of the population. The effectiveness of a country lies within the realm of good infrastructural facilities such as road networks. Adequate road transportation system and good attitude of the end users of the road transport system can ensure a safe passage of lives and goods as spatial interactions are fostered but rapid growth of cities and limited or uncoordinated road transport system will definitely lead to occurrence of road traffic accidents as a result of the high population density.

The increase in the number of vehicles on most roads has brought with it attendant problems of traffic congestion. In urban areas of less developed countries like Nigeria, car ownership rate has been on the increase. Nigeria has continued to experience traffic congestion and road traffic accidents because many car owners find it more convenient to travel by their cars rather than public transport in congested conditions. This increase use of personalized motor vehicles is choking already congested roads. The environmental and social impacts are significantly and directly related to quality of life and productivity. Longer hours spent on commuting, inadequate public transport and environmental impacts and energy consumption of drivers', in which case, pollution of various types become serious impediments which often leads to road traffic accidents in Nigeria.

To mitigate these challenges leading to road traffic accidents in Nigeria, roads must be widened and well maintained with traffic free zones created; inter-sections and road signals must be improved upon; there must be freeway bottlenecks removal initiatives; there must also be special event management strategies in place; while traffic signals, lightings and signage must be improved; parking policy, park and ride facilities and peak hour congestion management strategies must be developed and put in place.

4. Road Traffic Accident Preventive Measures

Guarding against the causes of road traffic accident is a collective affair as it affects everyone directly or indirectly. Haven identified some of the remote and immediate causes of road traffic accidents in Nigeria, here are some of the suggested preventive measures if well adopted and practiced, will go a long way towards reducing and curtailing road traffic accidents in Nigeria.

(a). Sanitation of motor parks from alcohol sales and consumption

Shops where alcoholic beverages are sold are visibly present in most if not all Nigerian motor parks today without recourse to the very negative effects of drunk drinking by drivers who are the main consumers. The resultant effect is reckless driving on our Highways. There needs to be proper enactment of legislations to address this issue and thorough enforcement of legislations already put in place forbidding the sales of alcoholic drinks or beverages in our motor parks. Hawkers of traditional liquid mixtures which consist of alcoholic contents should also be chased out of and restricted from our motor parks as it has been noticed that most drivers who are also their major customers also do take these "concoctions" or drinks before embarking on their journey. On the part of the citizens, drivers should not take alcohol when they are about to, or when they are driving as this will in no small measure help to eliminate drunk driving and the resultant road traffic accident that is most likely to occur.

(b). Sobriety checkpoints

Even when and if the sales and consumption of alcoholic beverages are eliminated from our motor parks, drivers who are addicted to drink driving will still find a way of consuming alcoholic beverages before embarking on driving exercises. A very effective solution to checking this group of hardened drivers is to enact and establish Body Alcoholic contents, BACs laws and constituting sobriety checkpoints to enforce this law.

Laws that establish BACs of 0.05g/dl or below are effective at reducing the number of alcohol-related crashes. Enforcing sobriety checkpoints and random breath testing can lead to reductions in alcohol-related crashes of about 20% and have shown to be very cost-effective. This has already been experimented and practiced by developed countries of the world like the United States of America where it has proved to be 100% effective.

(c). Routine maintenance and rehabilitation of road pavements. Comprehensive vehicle maintenance and repair

Bad road pavement conditions in Nigeria are one of the principal causes of road accidents. These roads are poorly constructed and rarely managed or rehabilitated. When these roads are not maintained and rehabilitated, they tend to deteriorate. This deterioration often begins with the origin of cracks and potholes either at the sides of the road pavements or along the drive way. Therefore a remote way of ensuring accident reduction/prevention is for the government, which is charged with the responsibility for good maintenance to draw up and implement to the later on regular basis, budgets that match the demands of the road network and its infrastructure.

As regards the vehicles which are a major factor in road traffic accidents, privately owned and mass transit operators should, as a matter of high priority, introduce and operate comprehensive maintenance and repair programme for their vehicles.

(d). Curbing menace of tankers and articulated vehicles

Efforts must be made to curb the menace of tankers and articulated vehicles on our roads. The carnage and indiscriminate parking of these tankers and articulated vehicles on roads has to be stopped. Public parks should be provided for these tankers and articulated vehicles rather than using the highways as parks thus resulting to serious traffic flow obstructions and menace to other road users thus resulting to traffic accidents as it has been in past cases. Most of these tankers and articulated vehicles should ensure that they have adequate lightings and reflectors at their rare so as to alert on coming vehicle of their presence on the road.

(e). Total prohibiting the use of mobile phones while driving

While there is little concrete evidence yet on how to reduce mobile phone use while driving, the Nigerian government needs to be proactive. Actions that can be taken to address this ill tradition by Nigerians include enacting, adopting and fully enforcing legislative measures prohibiting the use of mobile phones while driving. Launching regular public awareness campaigns to address this problem with a view of presenting before the general public the grave dangers of driving and using the mobile phone. As the saying goes “life has no duplicate”. There should be regularly collection of data on road traffic accidents as a result of distracted driving while using the mobile phone to better understand the nature of this problem and to holistically address it.

(f). Training and retraining/public enlightenment

The road traffic system itself is dynamic in nature. Hence training and retraining of drivers constitute a formidable means of effectively dealing with the issue of road traffic accident reduction. In Nigeria today, major road traffic accident scenes have been noticed to involve commercial transporters/vehicles. To this end, there is urgent need for public transport operators to ensure that their drivers are trained and retrained in collaboration with the Federal Road Safety Commission, FRSC. As such, public enlightenments should be intensified by the various agencies that work together towards ensuring safer roads and thus the road users. Also, elementary training or education should start through a child’s formal education so that from the formation stage of ones life, one is already aware and exposed to the causes of road traffic accidents.

(g). Diligence of duty by government established agencies

Government should ensure that all established agencies such as Federal Road Safety Commission, FRSC and Vehicle Inspection Offices, VIOs must carry out their jobs effectively and thoroughly; checking the conditions of vehicles that ply on our road, without extorting money or collecting bribes from drivers. Majority of the vehicles that ply our roads are badly-maintained and most people buy cars that have already been used and scrapped and they believe their unlearned and unskilled mechanic will rehabilitate the over used car to function well. This often over used cars thereby increases the frequency of road traffic accidents. The FRSC and VIO must thoroughly check and examine every vehicle including tankers and articulated vehicles that would ply the roads in order to ensure that they are road worthy at all times.

(h). Obeying traffic signs, rules and regulations

There is need for all road users to properly understand traffic signs and strictly in vive the habit of obeying all traffic rules and regulations so as to make the road safe for use by all. Drivers should at all cost avoid dangerous over-taking on our roads.

(i). Speed regulations and prohibiting the use of sirens

In areas where vulnerable road users are common; such as residential areas, market areas and around schools, the speed of vehicles should be limited to 30km/hr as this will go a long way towards reducing the risk of road traffic accident occurring as pedestrians have a greater chance of surviving a road traffic accident at 30 km/h or below.

It is already an established fact that there is grouse abuse of siren usage either by private or political public office holders' drivers' on Nigerian roads coupled with indiscriminate driving at outrageous speed limits which often than not results to nuisance, noise pollution and road traffic accidents. The use of sirens by private or political public office holders on Nigerian roads should be totally banned with only ambulances on emergencies allowed to use this facility and it should only be used when on life saving missions so that the importance of this facility (sirens) will be better appreciated by other road users towards ensuring that these ambulances gain the much needed assistance and considerations from other road users when on emergency missions.

(j). Effective and efficient usage of safety devices

When vehicle seat-belt laws and motorcycle helmet laws are enforced effectively in Nigeria, helmet wearing rates can increase to over 90%.

Requiring helmets to meet recognized safety standards is important to ensure that helmets can effectively reduce the impact of a collision to the head in the event of a road traffic accident. Wearing a motorcycle helmet correctly can reduce the risk of death by almost 40% and the risk of severe injury by over 70%.

In a similar way, wearing a seat-belt reduces the risk of a fatality among front-seat passengers by 40–50% and of rear-seat passengers by between 25–75%.

Mandatory seat-belt laws and subsequent enforcement will be very effective at increasing seat-belt wearing rates amongst drivers on Nigerian roads. Seat-belts as well as child restraints if correctly installed and used will reduce deaths among infants by approximately 70% and deaths among small children by between 54% and 80%.

(k). Ensuring proper vehicular morning parades

Vehicle drivers should adequately ensure that they check every part in their vehicles to ensure that they are in good condition before putting them into use on Nigerian roads. Before driving a vehicle for the first time everyday, adequate efforts should be made to check the radiator water level, brake hydraulic fluids and that of clutch for manual vehicles, level of oil in engine, fan blades, engine belts, tyre gauge, etc every morning while the vehicle is put on and allowed to run idle for a few minutes.

(l). Developing and utilizing other means of land transportation

Nigeria's transport system solely depends on road transport in conveying goods and people from one end to another. This is responsible for very high volume of traffic on the road transport system and also a drastic reduction in the service life of roads before failures start to sets in. The failed road pavement and high volume of road traffic will mean more travel time and more stress which is likely to result in road traffic accidents.

To this end, the Nigerian government needs to urgently develop and utilize other means of land transportation systems like railways and also do same in that of water transportation. The resultant effect of developing and

utilizing other means of land transportation is that it will drastically reduce volume of road traffic, increase the service lifespan of roads and subsequently reduce the occurrence of road traffic accidents.

(m). Regulating maximum travel time of commercial drivers per day

Laws regulating travel time of commercial drivers per day should be enacted and fully enforced by the Nigerian government through the FRSC in collaboration with union bodies like the Nigerian Union of Road Transport Workers, NURTW. This law should seek to mandate the maximum travel time an individual driver should engage in driving/travelling per day. This is in view of the fact that most transport company owners/operators do not put into consideration fatigues incurred by drivers and their vehicles as a result of driving for too many hours a day but rather concentrate more on their profits rather than human lives. Vehicle and driver fatigue has been known to be a cause of road traffic accidents in Nigeria. Being that the driver is the main actor in control of the factors responsible for road traffic accidents, it is absolutely that he be both physically and mentally alert when operating the vehicle.

5. Recommendation

Factors, consisting of the vehicle, the driver, the road pavement condition and the environmental condition at a given point in time which often than not causes road traffic accidents have been examined. The much needed preventive measures at reducing the unacceptable carnage and very high occurrence of road traffic accidents on Nigerian roads have also been suggested. It is our belief that if the preventive measures highlighted herein are carefully implemented, Nigeria highways will be safe for all and devoid of frequent road traffic accidents.

6. Conclusion

Road traffic accident in Nigeria is a very serious issue requiring a holistic attention and approach towards curbing its occurrence considering the magnitude of the problem it presents to every Nigerian road users.

As a people, having a 'Safe road' and curbing road traffic accidents in Nigeria is ensuring that road traffic accident preventive measures are effectively and efficiently practiced at all times.

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