

ROAD TRAFFIC ACCIDENTS IN NIGERIA: UNDERSTANDING THE RISK AND PREVENTIVE FACTORS

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Abstract

Road traffic accidents (RTA) is a common phenomenon and an emerging public health threat globally including Nigeria. In Nigeria, RTA is a serious menace plaguing the country thus, requiring a holistic and urgent attention. This paper reviewed and discussed extensively risk and protective factors of RTA both in Nigeria and outside the country. The risk factors associated with RTA include socioeconomic factors, behavioural factors, environmental factors, psychological factors and vehicular factors. The paper further highlighted and reviewed protective factors that can aid the prevention of RTA. Based on the revelation from the reviewed literature, it was recommended that urgent, deliberate and purposeful training and retraining of drivers should be done, traffic infrastructure has to be updated as those that need repairs have to be done. Moreover, government at all levels should consider providing sponsorship and grants to assist in licensing drivers and as well ensure free driving schools to encourage individual's enrollment in driving schools.

Introduction

Road traffic accidents (RTA) is a public health threat globally especially in developing countries including Nigeria (Onyemaechi, 2016). In Nigeria, injuries are sustained and many lives are lost daily as a result of RTA. This ugly trend has been on the increase, ranking the third-leading causes of death and disability in Nigeria (Onyemaechi, Ofoma 2016; Odinforo, and Olawole, 2024). Road Traffic Accident (RTA) has been viewed as an unexpected and unpleasant event that causes loss of life or injuries especially among passengers, vehicles and other mobile or immobile facilities on the road (Onokala, 2015). RTA is further conceptualized as a fatal or non-fatal incident sustained as a result of a collision or event involving at least one road vehicle in motion on a public or private road resulting in a causality or death (Shantajit et al.2018).

Research has reported that motor vehicle collisions cause more than 1.2 million deaths across the world, and non-fatal injuries are estimated to be greater each year (World Health Organization, 2015). In Nigeria, RTA and associated death tolls occur at an alarming rate. For instance, within 6 months, from October 2017 to March 2018, an estimated 2,600 Nigerians died in road traffic accidents (Eneh, Okosun, Egbenta, 2023). More so, between January and March 2022, Nigeria lost a total of 1,834 lives to road traffic crashes. Of this number, 77.8% were male adults while female adults accounted for 15.2% (Inah, et al. 2025).

Studies has further revealed that twenty thousand (20,000) vehicles were involved in road traffic accidents every day, leading to a loss of more than 27 lives or more than 4 families daily to road traffic accidents(Sivan, et al. 2019; Eneh, et al. 2023). Research has

estimated that by 2030, car accidents will be the fifth leading cause of death in the world, if this trend were to continue (Global Status Report, 2013; Onyemaechi, Ofoma 2016; Eneh, Okosun, Egbenta 2023). The causes of vehicle collisions are complex; however, studies have broadly attributed it to characteristics of drivers (Rolison, et al. 2018). For instance, the skill level of drivers (McGwin and Brown, 1999), inexperience (McCartt et al., 2003), and risk-taking behaviours (Rolison et al., 2014) have been implicated in the collisions of young drivers compared to drivers in other age ranges. Other studies on road traffic accidents have also implicated factors like excessive speed of the drivers, driver driving recklessly, traffic violations of road traffic rules, drugs and alcohol use/abuse (Gonzales et al., 2005; Lam, 2003; Bingham et al., 2008). This is evident in a study by Braitman et al. (2008), that interviewed 16-year-old novice drivers who had been involved in a collision within eight months of receiving their driver license. The findings indicated excessive speed, loss of control, and failure to detect another vehicle or traffic control as the primary causes of their collisions (Braitman et al., 2008). On the other hand, urbanization, industrialization, as well as the increase in the number of vehicles on the roads were also reported as the predictors of RTA (Bekibele, et al. 2007; Odinfo, and Olawole, 2024).

A cross-sectional survey research conducted in 2023 across Nigeria on factors associated with road traffic carnage has further revealed that risky driving behaviour (Iyanda, Moronkola and Iyanda), road quality (Eneh, et al. 2023) as well as vehicle quality, are major contributing factors to RTA which in turn increases the number of road traffic crashes and the attendant death tolls (Eneh, et al. 2023). The study estimated that for every 1% decrease in road quality, death tolls from road traffic crashes in Nigeria increased by 0.00642% at 5% significance, and for every decrease in vehicle quality, death tolls from road traffic crashes in Nigeria increased by 0.327% at 5% significance (Eneh, et al. 2023). The rising incidence of RTA in Nigeria and associated deaths on the Africa's most populous country is alarming (Asogwa 1978; Onyemaechi and Ofoma 2016; Odinfo, and Olawole, 2024). According to the WHO, the country has 1042 deaths a year for every 100,000 vehicles, one of the highest rates of road fatalities in the world (Ekere, et al. 2004; Solagberu, et al. 2003; Akinpelu et al., 2006; Nwadinigwe, 2005; Onyemaechi and Ofoma 2016; Siyan, et al. 2019). Although transportation has liberated man and makes him/her more mobile and efficient in all the activities, however, the increasing RTA on the Nigeria road is a source of worry and concerns which calls for research. Research has revealed that road traffic accident is an issue of great international concern as it has emerged as the single greatest source of death all over the world (Zainafree, et al., 2022). Despite this however, there is yet to be a comprehensive and integrated approach to combat this ugly menace. Therefore, for effective interventions on RTA, there is need for research review to critically understand the actual cause of RTA in Nigeria. These are the reasons that underscore the need for the current review on road traffic accident in Nigeria with the associated risks and preventive factors.

Risk factors of road traffic accidents in Nigeria

Many risk factors have been attributed to RTA. According to Eze (2012), and Kiwango, Katopola, Francis et al. (2024), these risk factors can be categorized into socio-economic

factors, behavioural factors, environmental factors, psychological factors, vehicular factors, and were represented in the schematic framework (Fig.1) and discussed in the succeeding subheadings.

Socio-economic factors and the risk of road traffic accidents

The term socio-economic refers to the interactions between individual or group of people and their socioeconomic status or their financial situation. This factor has been consistently linked to higher RTA risks (Getachew, Lakew, Yirsaw, *et al.* 2024). For instance, the financial limitations of an individual or drivers hinder access to vehicle maintenance and safety measures. Drivers with limited resources may engage in riskier driving behaviors due to pressures associated with financial constraints. This is evidence from research from low- and middle-income countries where drivers are poorly paid and welfare not seriously put in considerations (Vecino-Ortiz *et al.*, 2022; Getachew, Lakew, Yirsaw, *et al.* 2024). Studies has documented that the socioeconomic impact of RTAs is particularly severe for low-income drivers, due to poor vehicle maintenance and lack of access to formal driving schools (Vecino-Ortiz *et al.*, 2022). Other studies on socioeconomic status and RTA have revealed that driver behavior, and lack of educational opportunities are key determinants of RTA risk factors (Bazilinsky *et al.*, 2018). Reports from countries like India and Nigeria, has affirmed low socioeconomic status with higher accident rates (Getachew, Lakew, Yirsaw, *et al.* 2024). This emphasizes the need for targeted interventions on the areas of improved education among drivers and awareness programs to enhance safer driving practices among the drivers.

Behavioural factors of road traffic accidents

Behavioural factor refers to the actions, attitude, habits and responses of an individual that exerts an influence on the decision-making process. The behavioural factors like smoking habits, alcohol, drugs, poor diet, and poor sexual health can trigger depression which may lead to RTA or car crash among drivers. Studies have associated human factors, otherwise known as human errors a significant contributor to the occurrence of road traffic accidents (Mekonnen, Tesfaye *et al.* 2016). Studies has estimated that about 95% of all the traffic accidents are due to driver-related dangerous behaviors (Mekonnen, Tesfaye *et al.* 2016). Research has further reported that the major cause of car crash in Nigeria was due to rudeness of most drivers on Nigeria road. Thus, most drivers are very rude, discourteous and have scant regard for human life (Afolabi, Kolawole, 2017). Afolabi and colleagues maintained that these attitudes of the drivers are the major cause of the avoidable carnage on Nigeria roads with many losses of lives (Afolabi, Kolawole, 2017). They further attributed their observations and concerns thus, (i) disregard of road traffic signs by road users; (ii) Lack of proper training of drivers; (iii) Irresponsible driving habit particularly among teenage drivers; (iv) Inexperience and incompetent drivers; (v) Over speeding, dangerous driving and total disrespect of traffic regulations especially concerning speed limits; (vi) Drink driving and/ or driving under the influence of drugs including herbal concoctions laced with spirit; (vii) Lack of respect / consideration for other road users; (viii) Impatience and negligence and (iv) Overloading of vehicles.

Environmental factors of road traffic accidents

Environmental factors are the physical and social elements or situation that affect an individual, or group of individuals. Environmental risk factors have been regarded as one of the most affecting factors of road traffic accidents (Jalilian, Safarpour et al. 2019). These environmental factors in relation to RTA can be divided into weather and time when the accidents are prone to occur (Siti, Norashikin, Mehran, 2019). In terms of weather condition, accident usually occurs during rainy weather. Researcher has indicated that during rainy weather, it reduced the drivers' visibility thereby increasing accident occurrence (Siti, Norashikin, Mehran, 2019). It is also reported that during snowy, cloudy, windy and foggy weathers accident is bound to occur (Siti, Norashikin, Mehran, 2019).

Therefore, there is need to focus on other factors, particularly the human and environmental factors contributing to this ugly menace (Afolabi, Kolawole, 2017). The researchers further outlined the environmental factor contributing to RTA for more research. This includes (i) Bad Road (ii) Weather conditions (iii) Dangerous bend (iv) Broken down/ abandon vehicle (v) Animals not under control (vii) Obstruction on the road.

Psychological factors of road traffic accidents

Psychological factors are important determinant of road traffic accidents (RTA). Psychological factors contribute to road traffic accidents according to studies are fatigue while driving, job strain, poor remuneration and payments based on performance, lack of job control, inflexible work hours, work overload, long driving hours, lonely driving, irregular job schedules, work-family conflicts, job insecurity and lack of safety motivation (Amoadu, Ansah, Sarfo, 2023). Research has reported that emotional demands, poor sleep quality, tiredness and sleepiness, job stress and long driving hours were significant predictors of driver fatigue leading to car crash involvement (Amoadu, Ansah, Sarfo, 2023). Other psychological problems, such as anxiety, driving phobia, and post-traumatic stress were as well attributed to road traffic accidents among injured survivors (Useche, et al., 2018).

Vehicular factors of road traffic accidents

Vehicular factor is the aspects of a vehicle issues that can contribute to the road traffic accidents. The vehicular issues such as malfunctioning engine, poor steering, a burst tire, brake, failure, or defective lighting system can contribute to RTA (Fisa, Musukuma, Sampa, et al.2022). It is noteworthy that accidents do not just happen, but they are caused due to the mentioned mechanical issues (Fisa, et al.2022). Moreover, 95% of second-hand vehicles imported into Nigeria are "accidentated" vehicles associated with mechanical issues (Fisa,et al.2022). Other causes are lack of proper driving education and poor driving behaviour, overload, speed, drunk while driving, failure to use provided safety devices, inclement weather, poor vehicle maintenance, dangerous and reckless driving or road violation, and use of mobile driving devices and gadgets while driving (Fisa,et al.2022; Eneh, et al. 2023).

Preventive strategies of road traffic accidents (RTA)

Proper Training and Retraining of Drivers: Drivers are the most important factor in the prevention of RTA. Therefore, training and re-training of drivers is the right step in prevention of road traffic accidents. Training and equipping drivers well from driving schools and licensed is a preventive strategy that should be adopted by both individual car owners and government at all levels. Further, governments at all levels should consider providing sponsorship and grants to assist in licensing drivers and as well ensure free driving schools to encourage individuals enroll in driving schools.

Traffic Infrastructure: This refers to the system of roads, bridges, and highways that facilitates the movements of people and goods. Traffic infrastructure is essential for ensuring efficient transportation and plays a crucial role in economic development and overall well-being (Schacht, et al. 2018). However, in Nigeria, the deplorable state of the road is a dead trap thus, requiring urgent attention to prevent the high rate of RTA in the country that has claimed many lives. Again, the government should endeavor to mark and fix traffic signs in all roads in Nigeria. This will go a long way to prevent car crash in the country.

Road User Policy and Laws: Effective policy and laws capable of ensuring safety of Nigeria roads users would help to address the major challenges associated with the carnage on the Nigerian highways. This is because traffic laws will help to reflect the contemporary safety needs of the public. Thus, the urgent need to update the Nigerian existing laws and regulations and enforcement therein.

Conclusion

Road traffic accident (RTA) is a common phenomenon and an emerging public health threat globally including Nigeria. In Nigeria, RTA is a serious menace plaguing the country thus, requiring a holistic and urgent attention, and effective approach towards curbing its occurrence. The current paper has reviewed extensively from literature both in Nigeria and outside the country the risk factors associated with RTA. These include socio-economic factors, behavioural factors, environmental factors, psychological factors and vehicular factors. The paper further highlighted and reviewed on protective factors that can aid in prevention of RTA. Based on the reviewed literature, the following recommendations are made:

1. Urgent, deliberate and purposeful training and retraining of drivers should be extended to all drivers both private and commercials on the road user policy and laws.
2. Traffic infrastructure must be updated. The ones that need repairs has to be done and the need for new roads to match the increase in the traffic volume should be met by government.

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