**ASSESSING THE IMPORTANCE AND EFFECT OF FIRST AID IN ROAD TRAFFIC ACCIDENT A CASE STUDY OF ACCIDENT AND EMERGENCY UNIT FMC ABEOKUTA OGUN STATE**

**ABSTRACT**

This study assessed the importance and effect of first aid in road traffic accident. It sought to determine the usefulness of first aid for road accident victims; to determine how often accident victims receive first aid; to determine how effective first aid treatment is to accident victims. The convenince sampling technique was used in this study to select the sample size considered appropriate for this study. A total of 52 medical personnel from Federal medical centre was selected for this study. The findings revealed that first aid treatment and recovery of accident victims are positivley significantly correlated. There is a also a relationship between effective first aid and recovery of accident victims. Furthermore, changes in first aid are moderately correlated with changes in recovery of accident victims.

**CHAPTER ONE**

**INTRODUCTION**

* 1. **Background of the study**

Accidents are one of the phenomena that have an impact on increasing cases of morbidity and mortality in the community. One of the factors that cause the increase in cases is the provision of first aid, especially at the pre-hospital stage which is not appropriate. In this case, the community plays an important role in providing first aid to traffic accident victims, because the community is the first person at the scene and is often exposed to traffic accidents. However, there are still many people who choose not to approach when an accident occurs because they do not understand how to do first aid. This is also influenced by public awareness and knowledge regarding the handling of traffic accident victims who are still lacking (Mariza Elsi, 2019). The results of research conducted by Torano & Parante (2018) regarding the description of public knowledge on first aid in traffic accidents in Jayapura City show that 83% have less knowledge about how to first aid in traffic accidents. Knowledge of first aid should be owned by the community because people who understand handling victims can save the lives of victims before being given treatment by the medical side. Knowledge also affects a person's response in taking action quickly and precisely (Karima, Nuraeni, & Mirwanti, 2019). According to Rajaratenam, Martini, & Lipoeto (2014), adequate knowledge can affect a person's attitude in providing first aid to traffic accident victims. Attitude is a person's tendency to act, think, and feel in dealing with a particular object or situation. Attitude is a person's response to a certain stimulus which, if based on appropriate knowledge, can develop an appropriate attitude. The higher a person's knowledge, the higher the stimulus and affect the attitude to be taken. Attitude affects a person's awareness in determining actions and actions when reacting to something, one of which is the response in providing first aid to victims of traffic accidents (Mastarida, 2020). Kureckova et al., (2017) explain the basic steps that the community can take in providing first aid to accident victims are checking the situation (security, number of victims, and the entire scene), taking quick action if there is something that could endanger the victim's life (no unconsciousness, heavy bleeding, and shortness of breath), and perform the treatment (if the victim is conscious and not bleeding, it is necessary to monitor the situation and ask about all important matters) and think about situations that can be life-threatening. Meanwhile, according to Kurniawati et al., (2020), some basic skills that must be possessed by the community in providing first aid to traffic accident victims include basic life support measures, splint dressing, and victim transportation. These actions can be carried out appropriately if the public knows effective first aid for accident victims. Traffic accidents are also one of the leading causes of death in the world. The World Health Organization (WHO) states that traffic accidents result in the death of around 1.35 million people worldwide every year and cause 20 to 50 million people to be injured. The highest number of deaths due to traffic accidents are in the Southeast Asian region, amounting to 20.7 deaths per 100,000 population (WHO, 2018). Indonesia is one of the countries in Southeast Asia with a high number of accidents. Data from the Central Statistics Agency of the Republic of Indonesia stated that the number of accidents in 2018 was 109,251 cases with total mortality of 29,427 cases. One of the provinces with the highest accident rate in 2018 was East Java with a total of 24,757 cases and mortality of 5,308 (BPS RI, 2018). Batu City also contributed to the number of accidents in East Java Province, which amounted to 299 cases with a mortality of 30 cases (BPS Kota Batu, 2020). Based on a preliminary study conducted by researchers, it was found that one of the locations in Batu City which is prone to traffic accidents is on Beji Highway. Besides being caused by human error or driver error, the condition of the road which is the main access to the city center and tourist area is mostly traversed by large vehicles and has a fairly steep geographical condition because it is located in a highland area. This condition is increasingly dangerous, especially when it is raining or foggy which causes road conditions to become slippery and interferes with the driver's visibility so that it becomes a factor in traffic accidents. Based on the data on this background, researchers are interested in identifying the relationship between knowledge and public attitudes in first aid for traffic accident victims.

* 1. **Statement of research problem**

First aid entails the primary care administered for a sudden illness or injury [1]. Firstaid plays an important role in minimizing the devastating consequences of road trafﬁcaccidents (RTAs), which are a major global public health issue. Many people get injuredor lose their lives due to RTAs on a day-to-day basis, which in turn make RTAs one of theleading causes of mortality and morbidity worldwide, and this highlights the importanceof ﬁrst aid; we cannot underestimate or minimize the value it provides [2–4]. First aid serves as the ﬁrst line of defense in saving people’s lives, decreasing the rateof injuries, and providing instant care until an ambulance and a medical team arrive to help. For example, there was a 2014 study conducted in Northern Nigeria; the study was conductedon 500 drivers selected randomly from transport companies. The sample underwent ﬁrst aid training courses and was then evaluated after 0–3 months and4–6 months. Improve-ment in giving ﬁrst aid efﬁciently was observed; also, the rate of correct interventions washigher after 4–6 months than 0–3 months. The study concluded that ﬁrst aid programsdesigned for drivers were beneﬁcial and enhanced road trafﬁc accidents as a prehospitalcare system. First aid is deﬁned as prompt assistance given to someone who has become suddenlyinjured until professional help arrives or until the injured patient regains health. The main and primary goals of ﬁrst aid are to save life, relieve pain, prevent further harm or damage,and facilitate quicker recovery. Promoting ﬁrst aid education is crucial for every agegroup, including kindergarten children. This universal learning can happen through liveclasses, online courses, and public health campaigns. According to the World Health Organization (WHO), road trafﬁc accidents (RTAs) areresponsible for approximately 50 million injuries and about 1.2 million deaths worldwide.Also, they are the eighth leading cause of disability-adjusted life years. In the UAE, the top four causes of death are cardiovascular disease, injuries, cancer,and respiratory diseases. RTAs are a leading cause of premature death and long-term disabilities, especially among men under 35 in Nigeria, escalating the numbers of physical disabilities and enduring handicapst. This study therefore seeks to assess the importance of and effect of first aid in road traffic accident.

* 1. **Objectives of the study**

1. To determine the usefulness of first aid for road accident victims.
2. To determine how often accident victims receive first aid.
3. To determine how effective first aid treatment is to accident victims.
   1. **Research questions**
4. What is the usefulness of first aid to road accident victims?
5. How often do accident victims receive first aid?
6. How effective is first aid to accident victims?
   1. **Research hypothesis**

**Ho:** There is no relationship between first aid treatment and recovery of accident victims.

**Ho:** There is no relationship between available first aid treatment and recovery of accident victims.

**Ho:** There is no relationship between effective first aid and recovery of accident victims.

* 1. **Significance of the study**

The findings of this study will be useful to health officials as it will reveal the extent of medical priority assigned to accident victims. Also, the findings of this study will be use to road officials such as the Nigeria Police force, the federal road safety corps, vehicle inspection officers and even the Nigeria Army. These authorities will find the findings of this study useful and help them in making accident victim-based decisions.

* 1. **Scope of the study**

This study will be limited to the responses garnerned from the medical officials in Federal Medical Centre, Abeokuta, Ogun state.

**CHAPTER TWO**

**LITERATURE REVIEW**

**Introduction**

With the importance placed upon first aid intervention at road traffic accidents (Oxer 1999), it is surprising that there is little literature discussing the role and perceptions of rendering first aid in these situations (Mabbott 2001) and the actions of first aiders. Alarmingly, new statistics released by The Council of Ambulance Authorities (2006) show a gradual increase in the average time taken for ambulances to arrive at the scene of a RTA across Australia and consequently the potential role of lay first aiders in minimising harm and improving outcomes for the injured is increasingly important. The Council of Ambulance Authorities (2006) reports that, in the Australian Capital Territory, in 50% of cases, an ambulance arrives within 7.5 min to a Code 1 call, and in 90% of cases, an ambulance arrives within 13.3 minutes. A Code 1 call is any call that requires the ambulance to respond urgently, utilising lights and sirens. A report released by St John Ambulance Australia (2006), argues that the first trained responder at the site of an accident can significantly assist in the timely treatment of potentially life threatening or disabling injury. Similarly, Finn et al (2001) have found that bystander CPR “buys time” in a time-critical situation. As Pearn (2000) highlights, the domain of basic life support inescapably belongs to the incidental bystanders or opportunistic first responders. Whilst the thought of providing bystander first aid may be overwhelming for some, Eisenberg et al and Finn et al (2001; 2001) have shown that the outcomes of out-of-hospital cardiac arrest can be significantly improved by the early initiation of CPR. In this study there were no survivors for patients in ventricular tachycardia or ventricular fibrillation when the interval for initiation of basic life support was greater than 10 minutes.

**The need for first aid training**

During the year 2006, 13 people died on ACT roads (ACT Department of Territory & Municipal Services 2006). Primarily, the goal of basic life support is to maintain the patients’ airway, breathing and circulation until expert medical support is provided. First aid is defined as any subsequent measures that are provided to people once the affected person has been protected from further injury and help has been summoned (Larsson, Martensson & Alexanderson 2002). Oxer (1999) notes that after a crash involving injury, the two factors most likely to kill are obstruction of the airway causing suffocation, and uncontrolled bleeding causing death. Obviously, programs aimed at preventing all possible serious RTAs are important, however this challenge is one that has yet to be conquered by any jurisdiction. Therefore, harm minimisation techniques are vital in reducing the death and the impact of severe injury caused by RTAs. Realistically it is possible to provide the community with the skills to provide vital early intervention for victims of road trauma in order to prevent further injury or death. A study by Hussain and Redmond (1994) found that 56.6% of the pre-hospital deaths that occurred in North Staffordshire, were due to RTAs, and occupants of cars were most vulnerable to injury. A number of studies have identified that relatively simple basic life support measures such as maintaining an airway have the capacity to reduce mortality. Hussain and Redmond (1994) studied what proportion of fatalities, both at the scene of accidents and before reaching the hospital, were preventable by early intervention. The results show that at least 60 people died before reaching the hospital and that up to 85% of those 60 people probably died due to airway obstruction. Similarly, Khangure (1998) found that airway obstruction was a contributing factor in the death of 123 cases (6.9%) in Western Australia between 1990-1997. It is argued that pre-hospital deaths may be preventable with simple first aid techniques, which can be taught to the lay community. The value and outcomes of first aid training programs were examined by Peterson and Russell (1999) who found that both immediately and six months after some type of first aid training, people are more likely to stop and provide assistance at a motor vehicle crash. Both Hussain (1994) and Khangure (1998) argue that at least 7% of road fatalities could be saved as a result of basic first aid measures taken at the scene and argue that this presents a great opportunity for the community to actively participate in reducing the road toll both in terms of road traffic related deaths and disabling injury. The experience of first aid intervention A German study by Mauritz et al (2003) highlighted that, out of 2812 trauma situations, there was a bystander present in 57% (1602) of the cases. The bystander who assisted with first aid was usually from the police force, a relative, a friend or a stranger. A study by Jelinek et al (2001) found that with more training and more knowledge of correct procedures, people were more likely to perform basic life support in an event such as a RTA. It seems that often people do stop at the scene of an accident to render assistance.

**Where is first aid training heading?**

The current literature discusses both the need for first aid intervention at RTAs, the willingness of bystanders to perform first aid, the reasons why they may hesitate to become involved and the most commonly used interventions. There is consensus within the literature that there is a need for new methods of delivery of first aid information, and the need to target specifically categories of people within the community such as ethnic minority groups and young parents (Kendrick & Marsh 1998). Most importantly, the literature shows that whilst there may be a need to reassess the delivery methods of first aid courses (Finn et al. 2001; Goniewicz 1998; Kendrick & Marsh 1998), an increase in first aid training, or skills, does lead to an increase in confidence and/or intervention rates of interveners (Larsson, Martensson & Alexanderson 2002; Mauritz et al. 2003). Peterson and Russell (1999) explored the intervention rates following an intensive one-hour first aid course with community members. This study found that, following the course there was an increased rate of intervention by course participants and the knowledge provided in the course was retained at a satisfactory level for at least 6 months. Recommendations made by St John Ambulance Australia (2006) include that first aid training should be mandatory for motor driver licence holders. Eisenburger & Safar (1999) also add that training programs should include realistic information of the frightening appearance of a victim as well as the need to ensure debriefing of all bystanders who provide first aid as routine. Debriefing was also flagged as an issue by Axelsson et al (1996) who discussed debriefing as one of the crucial elements to a bystander interpreting their intervention as a positive experience. In a study by Axelsson et al (1998), one of the key findings was that the opportunity for debriefing influences the overall psychological reaction of a bystander who has performed first aid. Axelsson et al (1998) has found that better post intervention care for lay rescuers enables them to repeat a past endeavour and encourages others to learn and perform CPR. Recommendations about how first aid courses are run, what information is provided, whether training should be mandatory and the delivery methods of first aid training are discussed throughout the literature. Importantly, Hussain (1994) notes that the high incidence of airway obstruction in preventable deaths highlights the need for first aid training, especially among motorists, because 56.6% of deaths were due to RTAs. Hussain (1994) suggests that knowledge of basic airway protection and the recovery position could be tested easily and quickly before a driving licence is issued, and that every car should have a basic first aid kit. Overall, the literature demonstrates the potential value of first aid training as an element in strategies to reduce mortality and to improve the outcomes for those inured in RTAs.

**Road Traffic Accident**

According to data recently released by the World Health Organization (WHO),[1] an estimated 55 million people died worldwide in the year 2011. Of these, 1.3 million were due to road injuries, equating to roughly 3500 each day from road traffic injuries. By these statistics road traffic accidents (RTA) ranked among the top 10 leading causes in 2011, a reality that was not existent a decade ago almost at par with chronic diseases such as HIV/AIDS and diabetes mellitus. By 2030, car accidents will be the fifth leading cause of death in the world, if this trend were to continue.[2] Globally, RTA is the leading cause of injury-related deaths.[3] Public health experts worldwide concede that there is a global epidemic of RTA. The incidence, however, is higher in developing countries.[4-7] According to the WHO, low- and middle‑income countries accounted for 92% of road traffic deaths but had only 53% of registered vehicles in 2011. In Nigeria, injuries and deaths resulting from RTA are on the rise,[8,9] and account for the highest proportion of deaths on the Africa continent. Road accidents are Nigeria’s third-leading cause of overall deaths, the leading cause of trauma-related deaths and the most common cause of disability.[10-13] 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; the equivalent figures for the United States and Britain are 15 and 7, respectively.[14] Statistics show that there is a rising incidence of RTA in Nigeria and other developing countries with adverse physical and socioeconomic implications. However, there is yet to be a comprehensive and integrated approach to combat this menace.

**Why Does Road Traffic Accidents Deserve the Government’s Time, Energy and Focus?**

In Nigeria, injuries and deaths resulting from RTA are on the rise and are Nigeria’s third-leading cause of overall deaths, the leading cause of trauma-related deaths and the most common cause of disability.[11] The situation is especially problematic in Nigeria because of poor traffic infrastructure, poor road design, poor enforcement of traffic rules and regulations, a rapidly growing population, and subsequent number of people driving cars. As Nigeria’s economy grows, the volume of traffic is expected to rise, from 8 million vehicles in 2013–2040 million by 2020.[14]

RTA has physical, social, emotional, and economic implications. Fatalities, physical disability, and morbidity from road accidents predominantly affect the young and the economically productive age groups.[15-17] Survivors often endure a diminished quality of life from deformities and disabilities, posttraumatic stress and lost personal income, in a country not well known for exceptional rehabilitation services. The rest of the populace lives in perpetual and pervasive fear of traveling occasioned by not feeling safe on the roads. The overall effects of these injuries constitute social economic and psychological losses of great magnitudes. In 2003, the direct global economic cost of RTA was estimated at USD 518 billion/year with USD 100 billion of that occurring in poor developing countries.[18] The WHO estimates the national cost of RTA to be between 1% and 3% of the gross domestic product.[19] In Nigeria, about 80 billion naira is lost to RTA annually.[20] This economic cost includes the cost of property and public amenity damaged, the cost of medical treatment, and the cost of productivity lost due to the accident. This is a huge economic loss particularly for a country plagued with poverty.

Despite the statistics of RTA in Nigeria, it has not received all the attention it deserves. There is need to view RTA as an issue of urgent national importance that needs urgent attention aimed at reducing the health, social, and economic impact. Policy makers at the various levels of government need to recognize this growing problem as a public health crisis and design appropriate policy responses that will back up with meticulous implementation.

**Response by the Nigerian Government**

Following a critical survey of the increasing burden of RTA on the world economy, the UN general assembly in 2010 adopted a resolution which proclaimed a decade of action for road safety.[21] The goal of the decade (2011–2020) is to stabilize and reduce the increasing trend in road traffic fatalities, saving an estimated 5 million lives over this period.

To guide countries on taking concrete national level actions to achieve this goal, a global plan of action was developed.[22] This provides a practical tool to help governments develop a national plan of action. National activities should be based on 5 key pillars which include: road safety management, safer roads and mobility, safer vehicles, safer road users, and postcrash response. We will assess the response of the Nigerian government to the public health threat of RTA using these yardsticks.

**Road safety management**

The government response to road safety management can be evaluated by examining the institutional and legislative frameworks. The Federal Road Safety Commission (FRSC) is the lead agency in Nigeria on road safety administration that was established in 1988. Their statutory functions include: making the highways safe for motorists and other road users; recommend works and infrastructures to eliminate or minimize accidents on the highways and educating motorists and members of the public on road discipline. They also have the mandate to prosecute persons who have committed traffic offenses.

It must be admitted that the FRSC has done a lot of work on road safety campaigns and implementation of traffic safety regulations in Nigeria. Before their establishment, there was no concrete and sustained policy action to address the road safety question. Earlier attempts by some states and other government agencies were isolated and uncoordinated.

However, with staffstrength of about 18,000 men and officers, it would appear that the commission is currently overwhelmed with the task of keeping Nigerian roads safe. Poor funding, lack of motivation, and corruption are some of the challenges facing the commission. The public awareness and road safety campaigns must be robust and sustained all-round the year and not limited to only festive seasons as is currently the practice. The enforcement of the existing traffic safety laws must be pursued vigorously and offenders severely punished to serve as a deterrent to other road users.

In terms of legislative framework, many traffic safety laws exist in Nigeria, but their enforcement remains poor. Data from the WHO global health observatory repository 2011 show that Nigeria has a seat belt law which is applicable to drivers only.[23] There is also drink-driving law which is hardly enforced. At present, there is no child restraint law in existence, but there is a national speed limit law for both urban and rural roads of 50 km/hour. A law on the use of motorcycle helmet for all passengers and applicable to all road types exists, but the level of enforcement is very low. There is a need for a child restraint law in Nigeria, and the law on seat belt must be reviewed to apply to all occupants. Above all, the enforcement of all these laws must not be compromised in order to achieve the desired results.

**Safer roads and mobility**

A journey through the highway and major roads in Nigeria, particularly in the South-Eastern region, reveals that the road infrastructure is in great disrepair. With a total of road network of 194,394 km, Nigeria has the largest road network in Sub-Saharan Africa. Most of these roads were built more than 30 years ago when the volume of vehicular traffic was low, and there were alternative means of transportation such as railways. However, the rate of increase in vehicular traffic has not been matched with a commensurate rate of road construction. In addition, with a moribund railway systems and waterways as alternative means of transportation, the burden on the roads has continued to increase as a result of increased motorization. The resultant effect is the breakdown of roads and increased rate of

road crashes. The current rehabilitation of road and railways by the government will hopefully create safer roads and open up alternative means of transportation and consequently decrease the rate of road crashes in Nigeria.

**Safer vehicles**

The use of old and rickety vehicles that are not roadworthy contributes significantly to the rate of road crashes in Nigeria. In 2004, the national vehicle inspection scheme (a component of road transport safety standardization scheme) created by law in the National Road Traffic Regulations was introduced to ensure that only roadworthy vehicles are allowed to ply the roads.[24] It involves routine vehicle inspection on the highways as well as postcrash inspection. The FRSC and the vehicle inspection officers collaborate in thisresponsibility. However, the law in its current form applies only to fleet operators, i.e., organizations, companies, government ministries and agencies, and road transport company owners with a minimum of 5 vehicles in their fleet. The smaller transport companies (with <5 vehicles), privately owned vehicles and other means of road transport such as tricycles and motorbikes were not captured in this law. This is a major shortcoming in this law because any unsafe vehicle on the road constitutes a hazard to every road user. It, therefore, requires an urgent review and judicious enforcement with appropriate punishment for erring motorists.

Data from global health observatory repository of the WHO show that Nigeria has an estimated 12.5 million registered vehicles.[23] This number is very high when compared with the figure from other countries with similar demographic and socioeconomic statistics such as Pakistan and Bangladesh. This figure may be traceable to government’s review in 2010 of the ban on importation of used vehicles by increasing the age limit from 10 to 15 years. This policy may have paved the way for the importation of old vehicles that are not roadworthy into the country with consequent increased motorization and increased rate of road crashes. There must be a strict regulation of importation of vehicles in Nigeria to ensure that only safe vehicles are brought into the country.

**Safe road users**

The awareness and adherence to traffic safety regulation by road users is an important factor in reducing the frequency of RTA. The enforcement of road safety laws like the use of seat belt has been associated with significant reduction in the fatality and severity of injury after a road crash.[25-29] Although road safety laws exist in Nigeria, the level of implementation by road users is quite low. There is need to ensure that only drivers who are trained and certified are allowed to drive in Nigeria. Sadly, this responsibility of the FRSC has not been effectively discharged. Individuals are issued driver’slicense without any certification of their driving competence and fitness to the extent that even blind or lame persons may be in possession of driver’s license. The citizens more or less see a driver’s license as a tool for identification and not for the purpose for which it is intended. The consequence isthat incompetent and unfit persons may be certified to drive and this could spell disaster.Above all, public enlightenment programs aimed at educating road users on the safe use of roads should be vigorously pursued.

**Postcrash response**

After a road crash, an organized prehospital care, as well as prompt medical attention, has proven to reduce the morbidity and mortality among the victims.[30] In Nigeria, the state of posttrauma response is very poor.[31,32] Only a few cities such as Abuja, Lagos, and Port-Harcourt have an organized emergency medical service. The FRSC is also ill-equipped to carry out this responsibility. Solagberu et al. [31] in their study in Ilorin described a poor state of prehospital care of accident victims in Nigeria. Only 40.4% of the road traffic victims were brought to the hospital by either the Police or FRSC. None of the victims was brought to the hospital with airway protection or support of circulation of equipment. The policy of building so called “Accident Clinics” on the highways by the FRSC for giving first aid to the victims of RTA in our opinion constitutes misplaced priority and waste of resources. These clinics lack the necessary personnel and facilities to care for these victims. These resources could be well utilized in training of their personnel in rescue operations and provision of state of the art equipment for effective emergency medical services.

At the moment, there are only 3 national orthopedic hospitals and one national trauma center in Nigeria. This number is grossly inadequate to cope with the burden of trauma arising from road traffic crashes in a country of approximately 160 million people. There is a need for the establishment of more trauma centers dedicated to trauma care. In fact, all the tertiary health institutions in the country should be designated national trauma centers and subsequently equipped for effective trauma care services. This will help to provide the much needed posttrauma care to the rising number of RTA victims. In addition, healthcare should be made easily accessible to all citizens of Nigeria through a comprehensive health insurance scheme. This will enable RTA victims to access healthcare without having to pay by “out of pocket” method for their treatment, a practice which has compelled the poor victims to seek alternative care from the traditional bonesetters with attendant complications.

**What Can Physicians Do?**

**The PublicHealth Approach**

Complex problems require well thought out and methodical solutions. In the health domain, solutions to public health problems deserve to be approached from a public health perspective. The Centers for Disease Control and Prevention describe the public health approach as a four‑step model: define the problem, identify risk and protective factors, develop and test prevention strategies, and ensure widespread adoption of effective programs.[33] The public health approach has resulted in a successful reduction in motor vehicle deaths in developed countries.[34]

**Defining the problem**

Despite Nigeria’s high burden of RTAs, defining the full magnitude of the problem has been hampered by a lack of systematic information and robust empirical scientific data. There is very limited information on national patterns, distribution, and outcomes of RTAs across the country. For many published studies relating to RTAs in Nigeria are limited to single hospital or urban settings.[15,35,36] Even the statistics of Nigerian deaths from RTAs provided by the WHO are hugely approximated. Lack of systematic data generation mechanisms both at the national and state level leads to limitations in designing appropriate intervention strategies to deal with the problem in the country. Nigeria does not have an established national traffic accident database. There is no framework for accurate reporting of road traffic incidents, involved casualties, the probable physical and environmental determinants of each accident, where they occurred, under what circumstances. These are crucial and important scientific data elements that constitute a trauma database.

Adopting a public health approach with a view to tackling Nigeria’s RTA burden mandates the creation of data systems that provide detailed, robust, consistent, and comparable information across accident sites nationwide over time. Analyses of such data will be crucial for highlighting the problem and for developing, testing, targeting, and evaluating interventions. Research efforts must also be channeled toward improving our understanding of the societal implications of the social and economic consequences of deaths, injuries and long-term disabilities from RTAs.

Physicians have a role and responsibility to protect and safeguard health. The health of the public is not an exception to this role. Worldwide, physicians have been at the frontline of public health advocacy with respect to health promotion strategies such as smoking bans, seat belt use, and other aspects of road injury mitigation. Nigeria is Africa’s most populous country and our raw RTA statistics are pretty much unacceptable. As a matter of urgency, Nigeria’s physician bodies should initiate advocacy efforts directed at engaging the Ministry of Health, nongovernmental organizations, other health-care providers, industry and other stakeholders toward efforts geared at establishing a national trauma database for systematic data generation and creation of a national platform to aggregate research inputs and resources. These efforts must be simultaneously accompanied by intensified and refocused efforts by the government and other stakeholders at other interventions to mitigate the problem of RTAs, including mass safety awareness and educational initiatives targeted at key demographic groups, improvements in access to healthcare and in trauma management systems to reduce the intensity of injuries suffered by the victims. According to the WHO, low- and middle-income countries account for 92% of road traffic deaths worldwide. Nigeria has only been used as a case study to exemplify the burden of RTA. Therefore, many of the features raised in this call for action are applicable to other low-income countries.

**CHAPTER THREE**

**RESEARCH METHODOLOGY**

**3.1 Introduction**

In this chapter, we would describe how the study was carried out.

**3.2 Research design**

The study employed the survey descriptive research design to examine the importance and effect of first aid in road accident.

**3.3 Research settings**

This study was carried out in Federal medical Centre, Abeokuate, Ogun state.

**3.4 Sources of Data**

The data for this study were generated from two main sources; Primary sources and secondary sources. The primary sources include questionnaire, interviews and observation. The secondary sources include journals, bulletins, textbooks and the internet.

**3.5 Population of the study**

A study population is a group of elements or individuals as the case may be, who share similar characteristics. These similar features can include location, gender, age, sex or specific interest. The emphasis on study population is that it constitute of individuals or elements that are homogeneous in description (Udoyen, 2019). In this study the population constitute of staff members of Federal Medical centre, Abeokuta.

**3.6 Sample size determination**

A study sample is simply a systematic selected part of a population that infers its result on the population. In essence, it is that part of a whole that represents the whole and its members share characteristics in like similitude (Udoyen: 2019).

**3.7 Sample size technique**

The convenince sampling technique was used in this study to select the sample size considered appropriate for this study. A total of 52 medical personnel from Federal medical centre was selected for this study. The criteria for this selection includes availability of study participants, willingness to participate in the survey and knowledge about the subject matter.

**3.8 Instrumentation**

This is a tool or method used in getting data from respondents. In this study, questionnaires and interview are research instruments used. Questionnaire is the main research instrument used for the study to gather necessary data from the sample respondents. The questionnaire is structured type and provides answers to the research questions and hypotheses therein.

This instrument is divided and limited into two sections; Section A and B. Section A deals with the personal data of the respondents while Section B contains research statement postulated in line with the research question and hypothesis in chapter one. Options or alternatives are provided for each respondent to pick or tick one of the options.

**3.9 Reliability**

The researcher initially used peers to check for consistence of results. The researcher also approached senior researchers in the field. The research supervisor played a pivotal role in ensuring that consistency of the results was enhanced. The instrument was also pilot tested.

**3.10 Validity**

Validity here refers to the degree of measurement to which an adopted research instrument or method represents in a reasonable and logical manner the reality of the study (Prince Udoyen: 2019). Questionnaire items were developed from the reviewed literature. The researcher designed a questionnaire with items that were clear and used the language that was understood by all the participants. The questionnaires were given to the supervisor to check for errors and vagueness.

**3.11 Method of Data Collection**

The data for this study was obtained through the use of questionnaires administered to the study participants. Observation was another method through which data was also collected as well as interview. Oral questioning and clarification was made.

**3.12 Method of Data Analysis**

The study employed the simple percentage model in analyzing and interpreting the responses from the study participants while the hypothesis was tested using Pearson Correlation Coefficient.

**3.13 Ethical consideration**

The study was approved by the Project Committee of the Department. Informed consent was obtained from all study participants before they were enrolled in the study. Permission was sought from the relevant authorities to carry out the study. Date to visit the place of study for questionnaire distribution was put in place in advance.

**CHAPTER FOUR**

DATA PRESENTATION AND ANALYSIS

**Table 4.1: Demographic information of respondents**

|  |  |  |
| --- | --- | --- |
| **Details** | **Frequency** | **Percentage** |
| **Gender** |  |  |
| Male | 39 | 75 |
| Female | 13 | 25 |
| **Age** |  |  |
| 30-40 | 19 | 36.5 |
| 40-50 | 21 | 40.3 |
| 50+ | 12 | 23.1 |
| **Qualification** |  |  |
| Bachelor’s degree | 12 | 23.1 |
| Msc/MBA | 33 | 63.4 |
| Ph.D | 7 | 13.4 |
| **Marital Status** |  |  |
| Single | 11 | 21.1 |
| Married | 41 | 78.9 |
| Total | 52 | 100 |

Test of hypotheses

There is no relationship between first aid treatment and recovery of accident victims.

**Table 4.5: Pearson Correlation Table showing** relationship between first aid treatment and recovery of accident victims.

|  |  |  |  |
| --- | --- | --- | --- |
|  | | first aid treatment | recovery of accident victims |
| first aid treatment | Pearson Correlation | 1 | .821\*\* |
|  | Sig. (2-tailed) |  | .000 |
|  | N | 52 | 52 |
| recovery of accident victims | Pearson Correlation | .824\*\* | 1 |
|  | Sig. (2-tailed) | .000 |  |
|  | N | 52 | 52 |

\*\*. Correlation is significant at the 0.01 level (2-tailed)

The Pearson Correlation result in Table 4.5 contains the degree of association between first aid treatment and recovery of accident victims. From the result, the Pearson correlation coefficient, r, value of 0.821 was positive and statistically significant at (p< 0.000). This indicates that changes in first aid treatment result in changes in recovery of accident victims.

Thus, first aid treatment and recovery of accident victims are positivley significantly correlated.

There is no relationship between available first aid treatment and recovery of accident victims.

**Table 4.6: Pearson Correlation Table showing** relationship between available first aid treatment and recovery of accident victims

|  |  |  |  |
| --- | --- | --- | --- |
|  | | first aid | recovery of accident victims |
| first aid | Pearson Correlation | 1 | .648\*\* |
|  | Sig. (2-tailed) |  | .000 |
|  | N | 52 | 52 |
| recovery of accident victims | Pearson Correlation | .648\*\* | 1 |
|  | Sig. (2-tailed) | .000 |  |
|  | N | 52 | 52 |

\*\*. Correlation is significant at the 0.01 level (2-tailed)

The Pearson correlation Table 4.6 shows the degree of association between available first aid treatment and recovery of accident victims. The result shows that the two variables (relationship between available first aid treatment and recovery of accident victims) are moderately and positively correlated (r= .648). Furthermore, there exists a statistically significant (p<0.000) relationship between the two variables. Thus, the positive and significant relationship between available first aid treatment and recovery of accident victims indicates that an increase in availability of first aid can bring a corresponding increase in recovery of accident victims. There is a relationship between effective first aid and recovery of accident victims.

**Table 4.7: Pearson Correlation Table showing** relationship between effective first aid and recovery of accident victims

|  |  |  |  |
| --- | --- | --- | --- |
|  | | Effective first aid | RTA victims |
| Effective first aid | Pearson Correlation  Sig. (2-tailed)  N | 1  52 | .675\*\*  .000  52 |
| RTA victims | Pearson Correlation  Sig. (2-tailed)  N | .675\*\*  .000  52 | 1  52 |

\*\*. Correlation is significant at the 0.01 level (2-tailed)

In Table 4.7 is the Pearson Correlation result showing the degree of association between effective first aid and recovery of accident victims. The correlation coefficient, r, between the two variables is 0.675 indicating a perfect positive correlation. Moreover, such relationship was statistically significant at (p< 0.000). This indicates that changes in first aid are moderately correlated with changes in recovery of accident victims.

**CHAPTER FIVE**

CONCLUSION AND RECOMMENDATIONS

* 1. Conclusion

There is an increasing burden of RTA and injury-related deaths globally. Nigeria has one of the highest rates of road traffic fatalities in the world. The response of the government in controlling this scourge has been inadequate. By taking a public health approach to the prevention of RTA, we have the opportunity to have a broader influence on the physical,social, emotional, and economic manifestations of this scourge. Accidents and emergencies can happen at any time and place, including in the workplace. When such situations arise, the ability to provide prompt and effective first aid can make a critical difference in saving lives and minimising the impact of injuries.

First aid also helps prevent injuries from worsening. When provided with the proper first aid, the individual has a better chance of survival since the extent of damage is contained.

For instance, in a case of bleeding, the victim is at risk of losing excess blood and going into shock or dying. Therefore, when faced with a medical emergency where the victim is bleeding excessively, you must act quickly to stop the bleeding and save the victim's life as a responder.

The same applies to victims of burns. When the appropriate help is provided, the extent of the injury is contained. Snake bites are other health emergencies that must be controlled appropriately to prevent the poison from spreading to the rest of the body quickly before specialized help arrives. Spreading the poison throughout the body could lead to extensive organ damage and death in severe cases.

The responder needs to know how to handle these sensitive cases, as improper care could cause the victim to die, cause more complications, or worsen the injury.

First aid helps in fastening the recovery of the victim. This is one of the significant reasons why victims of different health emergencies require first aid. In other cases, the victim does not require further medical care when first aid is provided. It applies to minor injuries such as cuts, abrasions, bruises, and sprains.

First aid saves many medical bills when the victim no longer needs specialized medical care. Also, when the damages are kept at a minimum, the victim spends less time in the hospital undergoing treatment. When wrong first aid is provided, the injury is likely to worsen, more money goes into the treatment, and the injury takes longer to heal.

One of the reasons why first aid is necessary is to control pain. Injuries come with intense pain, which causes the victim a lot of pain. Therefore, these victims must be kept in a comfortable position whereby they experience less pain. The victim is left in less pain and suffering when proper first aid is provided. A first-aid-trained person would know how to best handle a victim in distress, regardless of the type or nature of the injury, to help prevent suffering.

When victims of different emergencies need to be protected when unconscious. This is because the victim is defenseless and unable to communicate. You also need to understand the victim's condition to offer the necessary help. The information is more critical for the medical emergency response teams. It helps them assist the victim faster, improving their chances of survival.

Many lives are lost to health emergencies that could have been managed through proper first aid. Also, specific health emergencies are critical and could easily lead to death. However, research has gone into first aid procedures to ensure they are less costly using locally available materials. However, this does not make these procedures less effective in saving the victim's life.

* 1. Recommendations.

**References**

The 10 Leading Causes of Death in the World, 2000 and 2012; 2013. Available from: <http://www.who.int/mediacentre/>factsheets/fs310/en/index.html. [Last accessed on 2016 Mar10].

Global Status Report on Road Safety; 2013. Available from: http://www.who.int/violence\_injury\_prevention/road\_safety\_status/2013/en/. [Last accessed on 2016 Mar 15].

Krug EG, Sharma GK, LozanoR. The global burden of injuries. Am J Public Health 2000;90:523‑

Odero W, Garner P, Zwi A. Road traffic injuries in developing countries: A comprehensive review of epidemiological studies. Trop Med Int Health 1997;2:445‑60.

Bener A. The neglected epidemic: Road traffic accidents in a developing country, State of Qatar. Int J Inj Contr Saf Promot2005;12:45‑7.

Huang CM, Lunnen JC, Miranda JJ, Hyder AA. Road traffic injuries in developing countries: Research and action agenda. Rev Peru Med Exp Salud Publica 2010;27:243‑7.

NordbergE. Injuries as a public health problem in sub‑Saharan Africa: Epidemiology and prospects for control. East Afr MedJ 2000;77 12 Suppl: S1‑43.

Asogwa SE. Road traffic accidents: A major public health problem in Nigeria. Public Health 1978;92:237‑45.

Ezenwa AO. Trends and characteristics of road traffic accidents in Nigeria. J R Soc Health 1986;106:27‑9.

Ekere AU, Yellowe BE, Umune S. Surgical mortality in the emergency room. Int Orthop 2004;28:187‑90.

Solagberu BA, Adekanye AO, Ofoegbu CP, Udoffa US, Abdur‑Rahman LO, Taiwo JO. Epidemiology of trauma deaths. West Afr J Med 2003;22:177‑81.

Akinpelu VO, Oladele AO, Amusa YB, Ogundipe OK, Adeolu AA, Komolafe EO. Review of road traffic accident admissions in a Nigerian tertiary hospital. East Cent Afr J Surg 2006;12:63‑7.

Nwadinigwe CU, Onyemaechi NO. Lethal outcome and time to death in injured hospitalised patients. Orient J Med 2005;17:28‑33.

Driving in Nigeria, Time for a Test; 2013. Available from: <http://www.economist.com/news/middle‑east‑and‑africa/21579057‑why‑nigerias‑roads-can‑be‑terrifying‑time‑test.> [Last accessed on 2014 Sep 21].

Ekere AU, Yellowe BE, Umune S. Mortality patterns in the accident and emergency department of an urban hospital in Nigeria. Niger J Clin Pract 2005;8:14‑8.

Labinjo M, Juillard C, Kobusingye OC, Hyder AA. The burden of road traffic injuries in Nigeria: Results of apopulation‑based survey. Inj Prev 2009;15:157‑62.

Hyder AA, Labinjo M, Muzaffar SS. A new challenge to child and adolescent survival in urban Africa: An increasing burden of road traffic injuries. Traffic Inj Prev 2006;7:381‑8.

WHO. World Report on Road Traffic Injury Prevention 2004. Geneva: WHO; 2004. Road Traffic Accidents; 2013. Available from: <http://www.> who.int/mediacentre/factsheets/fs358/en/. [Last accessed on 2014 Sep 21].

JuillardC, LabinjoM, KobusingyeO, HyderAA. Socioeconomic impact ofroad traffic injuries in West Africa: Exploratory data from Nigeria. Inj Prev 2010;16:389‑92.

WHO. Global Plan for the Decade of Action for Road Safety2011‑2020. Geneva: WHO; 2011.

WHO. Global Plan for the Decade of Action for Road Safety2011‑2020. Geneva: WHO; 2010.

WHO. Road Safety Status: Country Profiles. Nigeria: WHO;2015. Available from: www.who.int/violence\_injury\_prevention/road\_safety\_status/2015/en/. (accessed on

20th March 2016)

Federal Road Safety Commission. Road Transport Safety Standardization Scheme; June 2009.

Evans L. Safety‑belt effectiveness: The influence of crash severity and selective recruitment. Accid Anal Prev1996;28:423‑33.

Evans L. The effectiveness of safety belts in preventing fatalities. Accid Anal Prev 1986;18:229

Marburger EA, Friedel B. Seat belt legislation and seat belt effectiveness in the Federal Republic of Germany. J Trauma 987;27:703‑5.

Routley V, Ozanne‑Smith J, Li D, Hu X, Wang P, Qin Y. Pattern of seat belt wearing in Nanjing, China. Inj Prev 2007;13:388‑93.

Cummings P, Wells JD, Rivara FP. Estimating seat belt effectiveness using matched‑pair cohort methods. Accid Anal Prev 2003;35:143‑9.

Mock CN, Jurkovich GJ, nii‑Amon‑Kotei D, Arreola‑Risa C, Maier RV. Trauma mortality patterns in three nations at different economic levels: Implications for global trauma system development. J Trauma 1998;44:804‑12.

Solagberu BA, Ofoegbu CK, Abdur‑Rahman LO, Adekanye AO, Udoffa US, Taiwo J. Pre‑hospital care in Nigeria: A country without emergency medical services. Niger J Clin Pract 2009;12:29‑33.

Oluwadiya KS, Olakulehin AO, Olatoke SA, Kolawole IK, Solagberu BA, Olasinde AA, et al. Pre‑hospital care of the injured in South Western Nigeria: A hospital based study of four tertiary level hospitals in three states. Annu Proc Assoc Adv Automot Med 2005;49:93‑100.

Centers for Disease Control and Prevention. The public health approach to violence prevention 2015. Available from: https://www.cdc.gov/violenceprevention/overview/publichealthapproach.html. [Last accessed on 2016 Mar 18].

Centers for Disease Control and Prevention (CDC).Motor‑vehicle safety: A 20th century public health achievement. MMWR Morb Mortal Wkly Rep 1999;48:369‑74.

Adogu PO, Ilika AL, Asuzu AL. Predictors of road traffic accident, road traffic injury and death among commercial motorcyclists in an urban area of Nigeria. Niger J Med2009;18:393‑7.

Elechi EN, Etawo SU. Pilot study of injured patients seen in the University of Port Harcourt Teaching Hospital, Nigeria.Injury 1990;21:234‑8.