

# **REVIEW OF SUDDEN DEATHS FOLLOWING ROAD TRAFFIC ACCIDENTS IN SOUTH EASTERN NIGERIA FROM 2007-2012**

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To determine the sudden cause of deaths following road traffic accidents in south Eastern Nigeria from results of autopsy. A cross sectional study of all available cases of road traffic accidents victim autopsied within the period of study 2007-2012 were extracted from the autopsy register of the dept of Anatomical pathology federal Medical center Umuahia, Abia state. A total of 70 reported and autopsied cases were analysed using SPSS version 16. It was seen that cases of severe head injuries accounted for the highest lesion of 24.3% while traumatic/Neurogenic and hypovolumic shocks accounted for 15.7%. The least been cases with underlying organic diseases like hypertension, diabetes mellitus with other cardiovascular related ailment like cases of cardiac failure, pulmonary embolism, ruptured aneurysms with some gastro-intestinal lesions like chronic liver diseases. We found that severe head injury (multiple soft tissue and skeletal (Fractures of the skull) injuries appears to be the cause of much of the deaths seen at autopsy thus accounting for 17 (24.3%) and age range worst hit is that from 20-40 years. This is closely followed by those who died as a result massive exsanguination resulting to hypovolumic and Neurogenic shocks respectively.

**Keywords:** Road traffic accidents, Sudden death, autopsy.

## **INTRODUCTION**

Road traffic accidents (RTA) continue to emerge as a major cause of a lot of unwarranted deaths and a global deal of disability among ages of 10 to 50 years in most developed nations.<sup>1</sup> This have turn out to be a global epidemic and great public concern.<sup>2</sup> It has been ranked as 9<sup>th</sup> globally leading disability problem throughout the individual life.<sup>3,4</sup> There is increasingly rise in morbidity, mortality and incidence in deaths following RTA on daily basis,<sup>5,6,7,8</sup> Agnithotri (2006) also purported that RTA deaths and injuries are still a great deal of health challenges worldwide with a lot of high incidence occurring in developing nations (Bantia et al 2006). However, a lot of factors have contributed immensely in the occurrence of accidents ranging from excessive alcohol, disease status (epilepsy, uncontrolled hypertensive and diabetic patients, bad eyevisions (Myopic), Drugs (sedatives/tranquilizers/anti-psychotics); uncontrolled domestic animals examples dogs, goats and pre-existing physical disability. Others could be natural causes like bad weather (Harmattan fogging), obstruction of road with multiple potholes, inability to comprehend road signs etc. These factors appears much in our nation-Nigeria with its antecedent bad road network and lack of effective co-operate utilization of the directives of federal road safety act of Nigeria that was established in 1988 with sole function of road safety administration and management. This organization functions as a statutory role of monitoring the highway safety for motorists and other road users thus recommending works/infrastructures on road as to minimise accidents, educating motorists and members of the public on importance of road discipline. The rate of RTA continue to be on increase as lack of due process in obtaining driver's license following no proper evaluation before and after hence are issued without adequate practical assessment of the individual-as most are even obtained in absence of the said individual (under aged included). Above all, reckless driving without space knowledge is lacking as per road signs. The males continue to dominate as the major victim affected in RTA in our study when compared in all the age range of the study population. In caribbean study, (Tazhmoye Crawford et al 2008) affirmed that

high population of males are both involved as drivers, passengers/cyclists and pedestrians hence suggested that co-existence of other social and behavioural factors may be a factor. Since men in most tradition are the provider in most family system hence could be seen to contribute to the gender dominance.<sup>13</sup>

In most developing nation like ours, there is decrease if not complete dearth of autopsy of RTA deaths as relatives are often in habit of refusing autopsy. These relatives of dead victims often times will refused autopsy based on the premise that since we already know that he/she died from RTA there is absolutely no need finding the cause of death. A great deal of this numbers are not autopsied. These have led to lack of empirical/existing data upkeep as Museru et al (1999) noted. This data could have shown the level of the problem and possible risk factors/groups as to find an ameliorating ways of minimising future occurrence.

In our study, we tend to know the most vulnerable cause of death with respect to age range, gender and it showed great deal of the sudden ban of motor cycle riding in the state by the government must have contributed to the low number of victims plus unwillingness of relative to accept coroner inquest.

**MATERIAL AND METHODS**

A cross sectional study of autopsied cases of RTA spanning from 2007 to 2012 were extracted from autopsy register of the Anatomical dept. of federal medical center, umuahia. A total of 70 autopsied deaths were seen to be due to RTA as this was analysed using SPSS version 16. The age range, gender and frequency of occurrence of each cause of deaths were taken into consideration.

**RESULTS**

**Table 1:**The Pattern Of Deaths Of Patients On Road Traffic Accident.

Year	Cause of Death															Total
	Tonsillar herniation	Traumatic/ neurogenic shock	Severe subarachnoid haemorrhage	Massive cardiac tamponade	Biventricular heart failure	Severe Head injuries.	Undetermined	Acute left ventricular failure	Rupture of berry aneurysm	Myocardial infarction	Hypovolaemic/haemorrhagic shock	Exsanguination	Ruptured oesophageal varices	Saddle pulmonary embolism	Asphyxia from laryngotracheitis	
2007	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	5
2008	0	2	1	1	1	6	1	1	0	0	5	2	0	0	0	20
2009	0	7	3	1	0	2	0	0	1	0	1	0	0	1	0	16
2010	1	2	2	0	2	1	0	1	0	1	1	2	0	0	1	14
2011	0	0	3	0	0	3	1	0	0	1	1	1	1	0	0	11
2012	0	0	1	0	0	2	0	0	0	0	1	0	0	0	0	4
<b>Total</b>	<b>1</b>	<b>11</b>	<b>10</b>	<b>2</b>	<b>3</b>	<b>17</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>11</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>70</b>

**Table:2** Age And Sex Distribution Of The Patient That Died.

Age Range	Nos. of Lesions	Male	Female	Male: Female ratio
10-20	8	4	2	2: 1
21-30	14	12	2	6:1
31-40	35	30	5	6:1
41-50	8	6	2	3:1
51-60	1	1	0	1:0

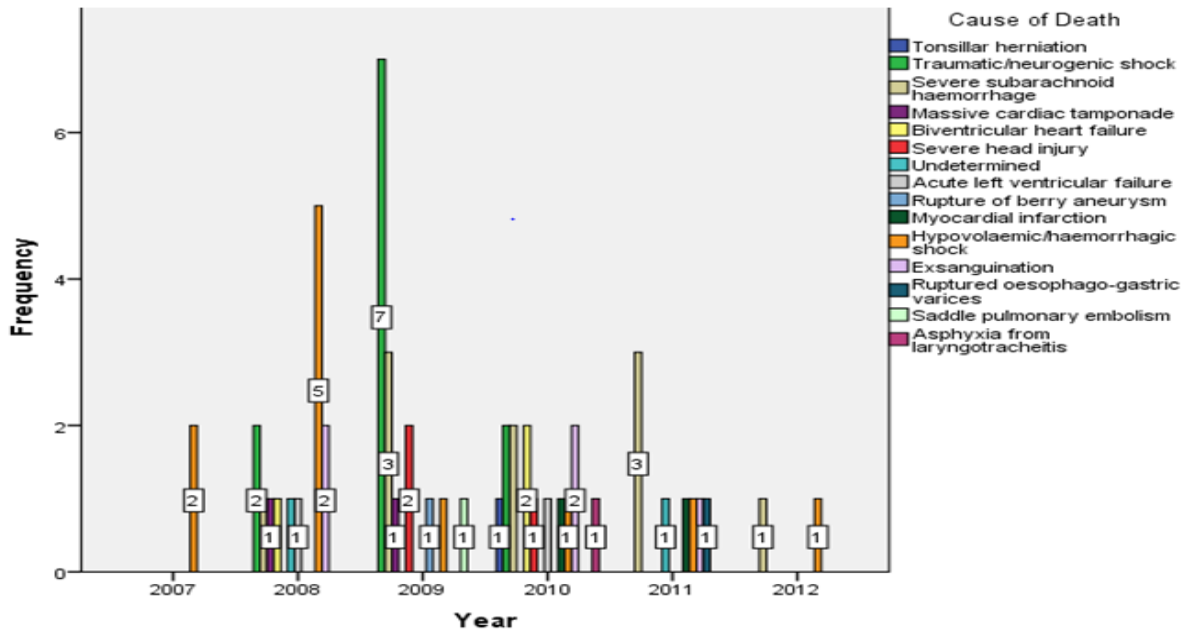


Figure 1: Cause of Death (Frequency Per year of occurrence)

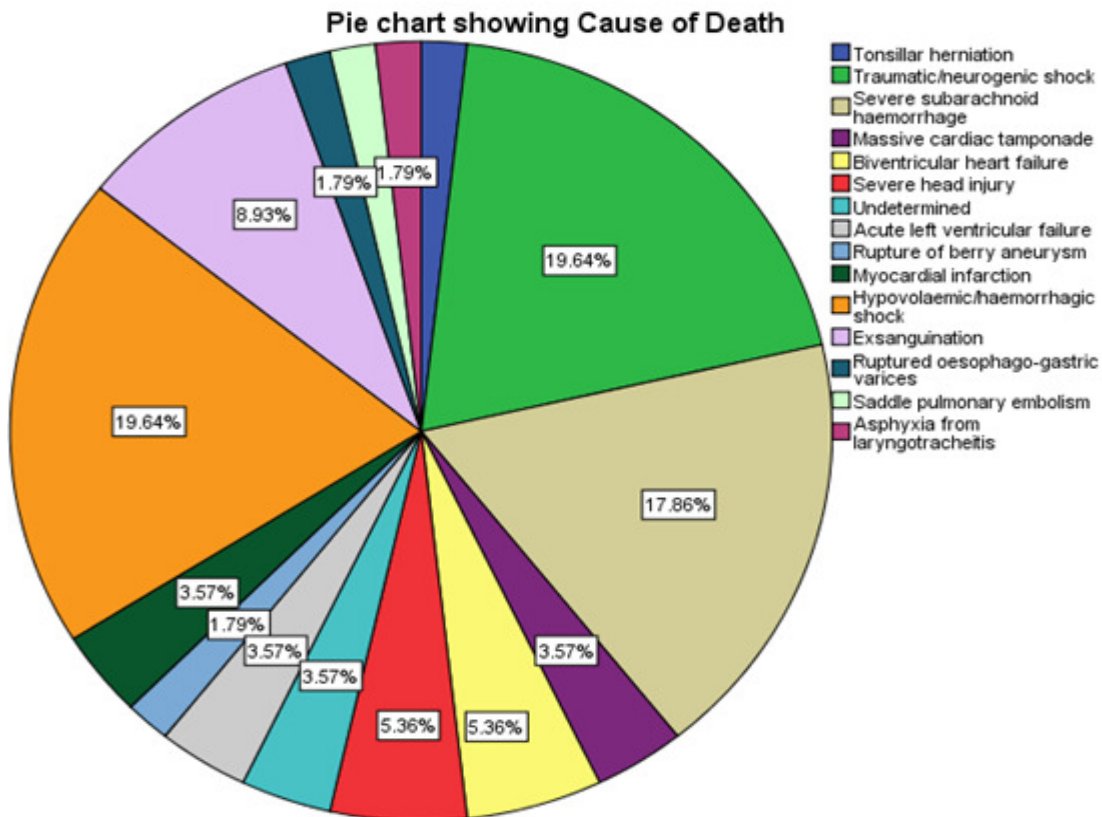


Figure 2: Pie chart showing cause of death

**DISCUSSION**

In our study, 17 (24.3%) showed severe head injuries with multiple skeletal fractures. We attributed these to reckless driving of the motor vehicle operators and motor cyclists with its antecedent lack of effective

utilization of federal safety commission act of Nigeria. These head injuries was equally seen by kuchewar SV(2012) as it appeared 107(49.54%) times in their study population of 216 patients.<sup>15</sup>This agrees with Kuchewar as male is more predominant to female in all age range within their study. In close comparism, it appeared as 188:28 which translates to 6.7:1 male to female ratio. The male appears to be the most vulnerable in our study making the number of male to female to be 57:13 which is equal to the ratio of 4.4:1. It goes to say that the male are often the most vulnerable gender which ultimately affects the working population of any nation.

Also when we compared age range it appears 31-40 years are the most hit group that is affected; closely followed by age range 21-30 years. In most studies, this age range is always the core victims that are often affected like in our study. This is shown in Kuchiwar SV 2012, Nilambar JHA et al 2004, Oyemade A 1973, Asogwa SE 1980. This age range of 21-30 years which appeared in our study is further seen with Sharma et al 2001, JHA and Agrawal 2004 and Kumar 2008. It's well noted that these group upto 40 years are the active life phase and economic productive age range of most nation hence a very high risk group in any society as preventive strategies are the core value for any developing and developed nation to maintain its work force should be instituted. In few others, victims were with co-existing diseases like hypertension, chronic liver diseases- depicting involvement with alcohol as the most commonest aetiological cause in this part of the world. As the prevailing disease entity could have attributed to the sudden death seen in our study as there is no obvious bruises/laceration or fractures on physical examination during autopsies. However, features of acute left ventricular failure, cardiac tamponade and at times undetermined cause of death –no prevailing cause which are seen in few situations might have been the effect of the disease with sudden occurrence of the RTA despite no obvious injury. Also features of shocked kidney as evidenced by distinct cortico-medullary differentiation are seen on the kidneys in few of our cases. This we think must have resulted from not only due to torrential bleeding but also from electrolyte imbalance following the degree of the injury. Finally, severe head injuries been the most common lesion leading to death and age range of 21-40 years there is more to be done by the government and the media in checking the level of reckless driving, alcohol intoxication poor vision/drug medication on driving example use of sedatives etc. Proper re-evaluation of each driver at point of renewal of license and not being a rubber stamped issue where an individual post previous license to the concerned authority to be renewed without knowing the actual status that year of the individual might be a greater risk to the populace.

## CONCLUSION

Proper discipline in part of punishing traffic offenders with existing laws enacted. Educating all road users on need of obeying road signs, reflectors on dark roads, speeding limits/use of cellular phones, loud music; inter alia. Also setting of speed cameras on roads and enforcement of speed limits on all kinds of vehicle especially on heavy trucks should be instituted.

Generally, health facilities should be upgraded and fully equipped with good neurological care and drugs with adequate manpower. This should be supported by effective mobile trauma unit for effective management of victims.

## LIMITATIONS

The limited number of autopsy on RTA was basically due to ignorance of the populace towards the procedure. Most refused the coroner directives hence go to court to obtain a warrant to bury instead. Reason since the victim is dead there is no need for autopsy as we all knew he died from RTA.

Also we could not assay the level of alcohol and drugs due to lack of gas chromatography and mass spectrophotometry.

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