

Road Traffic Injury deaths and Correlates in Babylon Province: A Cross- Sectional Study

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Abstract

Background: Road traffic accidents were a major health problem especially in low and middle income countries including Iraq, head injuries were found to be the most common fatal injuries during traffic accidents that causing deaths.

Objectives: to identify the relationship of road traffic injury deaths with different associated factors and to measure the extent of this problem.

Methodology: this was a cross-sectional study included a retrospective analysis of the forensic medicine data presented in the records of forensic medicine department for three years (2017-2019) the period needed to conduct this study started from 1st of February to the end of November,2019 . After the approval of the study protocol by the Babylon nursing college health ethical committee , a semi structured questionnaire was used to collect data according to the descriptive epidemiologic model (person , place, time).

Results: The road traffic accidents death rate in Babylon province was unacceptably high, the mean deaths per month due to Road Traffic Injuries was 43,8 and the mean deaths per week was 11 victims and the crude death rate =27/100000 population; Males in their productive age group were outnumbered victims to this preventable high priority health problem. Urgent interventional plan of action including provision high quality nursing tertiary care should be started to address this growing problem using the available resources to promote the critical care skills among health care providers and to reduce medical errors.

Keywords: Road traffic, injury deaths, head injuries, Babylon - Iraq

Introduction

In the globe , about 3 400 people die on the world's roads daily. Millions of people are injured or permanently disabled . WHO struggles to raise the profile of prevention of road traffic injuries ¹. WHO report predicts that 1.9 million person in the world die every year by 2020 ², the vast majority(93%) of deaths due to road traffic injuries occur in low-and middle-income countries including Iraq ^{3,4}. Road traffic injuries cause significant economic losses to individuals, families, and to nations as a whole. Road traffic crashes

cost most countries 3% of their gross product ⁵. By this year(2020) they will rank the third cause of mortality and morbidity. Another better fact is that 50% of the victims are individuals with in their productive age and lay role in society economic development ⁶. The number of road accidents is increasing in developing countries and the direct and indirect costs are higher compared to those in developed countries ⁷. In Iraq the number of road traffic accidents is also increasing which put a high burden on Iraqi health system which faces a lot of challenges in many aspects including shortage of high quality and competent adult nursing services dealing with increasing emergency medical problem the needs critical nursing care, this emphasizing the need of well- trained human resources including well trained and competent nurses ready to deal with this

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problem successfully in tertiary intensive surgical units (general surgery ,neurosurgery and orthopedic care) ⁸⁻¹⁴. According to WHO, the average annual death rate due to road traffic accidents in Iraq reached 44.7 (standardized age death rate per 100,000 population) ¹⁵. Road traffic injuries cause an estimated 700 deaths among young people every day ¹⁶. Head injuries due to Road Traffic Accidents is a recognized health problem that causes death and disability , the head being the most vulnerable part of the body that is why cranio-cerebral injury is on the top ¹⁷⁻¹⁹. The ultimate aim in this situation is to attain universal health coverage (trauma care, rehabilitation) for the victims and to ensuring road safety ^{20,21}. Strong health management is crucial factor which has to be applied in the developing nations and it is the time that all the concerned stakeholders work together in a coordinated manner to deal with this preventable problem to improve post-crash care ^{22,23}. The WHO has come up with a holistic policy on road safety and management ²⁴. The objectives of this study are to identify the relationship of road traffic accident fatalities with different associated factors

Methodology

The protocol of the study was accepted by the Research Ethical Committee in Babylon university-college of nursing .The approval of ethical committee of

Babel health directorate was also taken to carry out this research work .This was a cross-sectional observational descriptive study depended on a retrospective analysis of the reported Road Traffic Injuries (RTIs) mortalities that recorded in the forensic medicine department for the years 2017–2019. The time needed to conduct this study started from 1st of February to the end of November, 2019. Data that were recorded in the forensic medicine department for the three years were reviewed by the researchers. The registered data for each victim during the years of the study were reviewed which include, age, gender, and residence of the victims, in addition to the place and time of occurrence of incident that leads to death , date of accident is recorded (in day and month). The site of injury in the body was determined after postmortem study to identify the direct cause of death.

Statistical analysis was done using Spss version 17 to calculate the Chi square test to evaluate the significant of difference between variables, $p < 0.05$.

Results

Total Number of RTA deaths in the last 31 months in Babylon province = 1358 .The mean deaths per month due to RTIs =43,8 and the mean deaths per week due to RTIs =11 with crude death rate =27/100000 population.

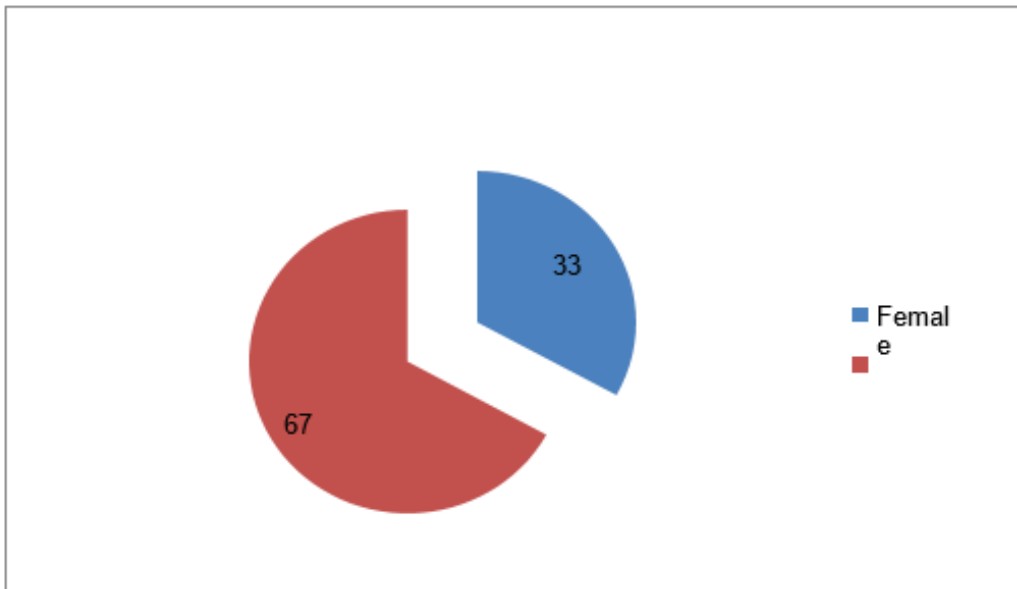


Fig (1): Distribution of road traffic accident by gender in Babylon province (N= 1358)

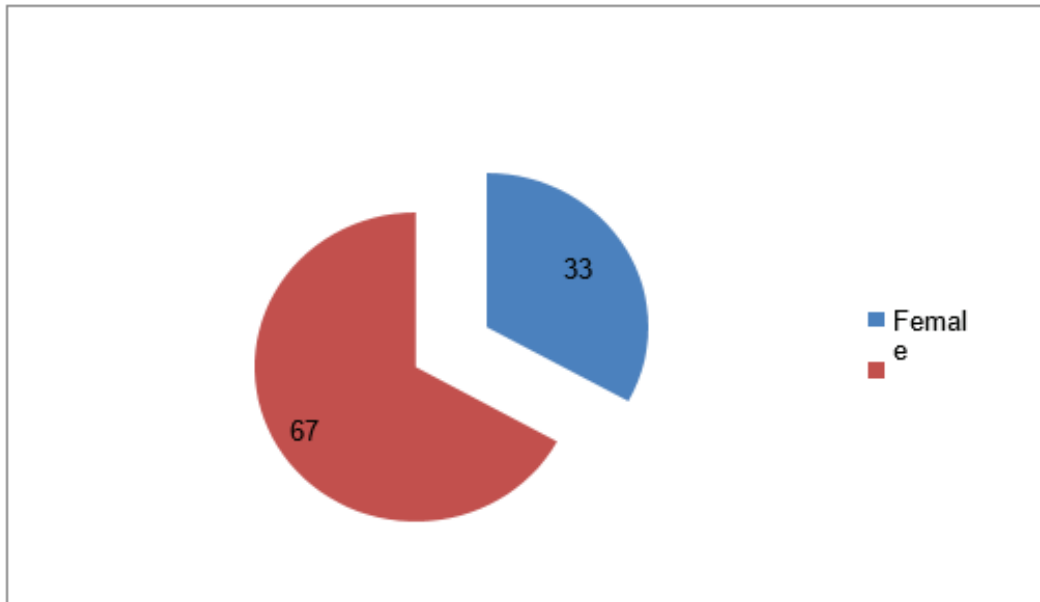


Fig (2): Distribution of injured and dead subjects by age and gender (N=1358)

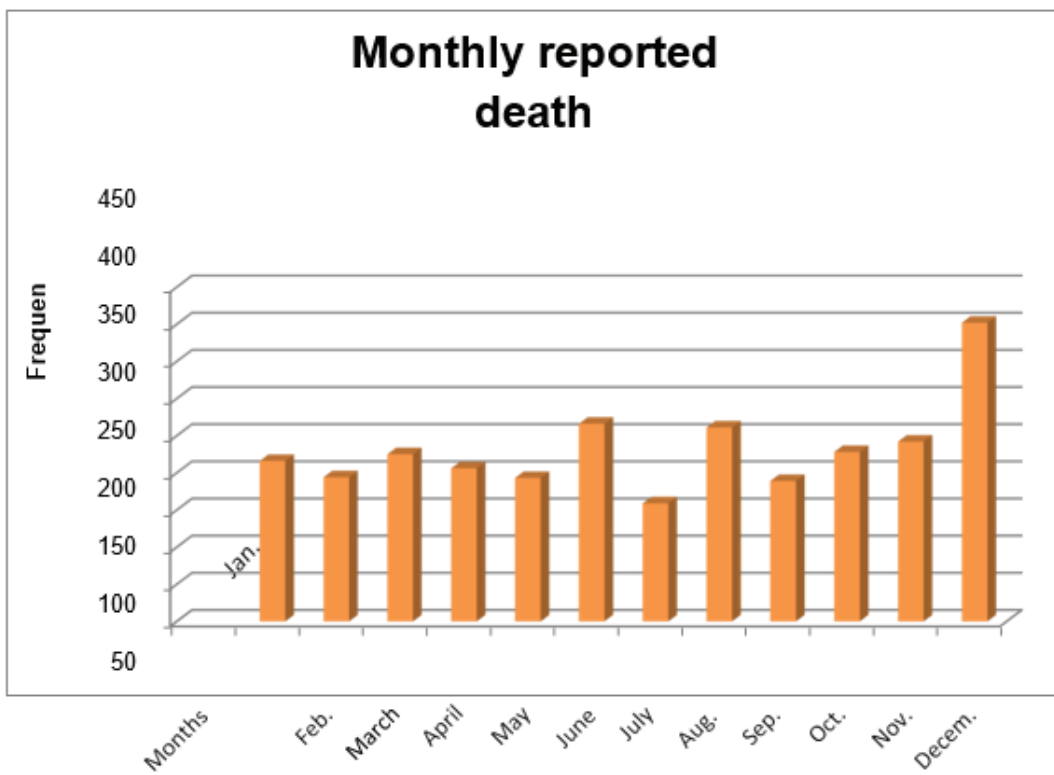


Fig (3): Monthly reported road traffic accident death

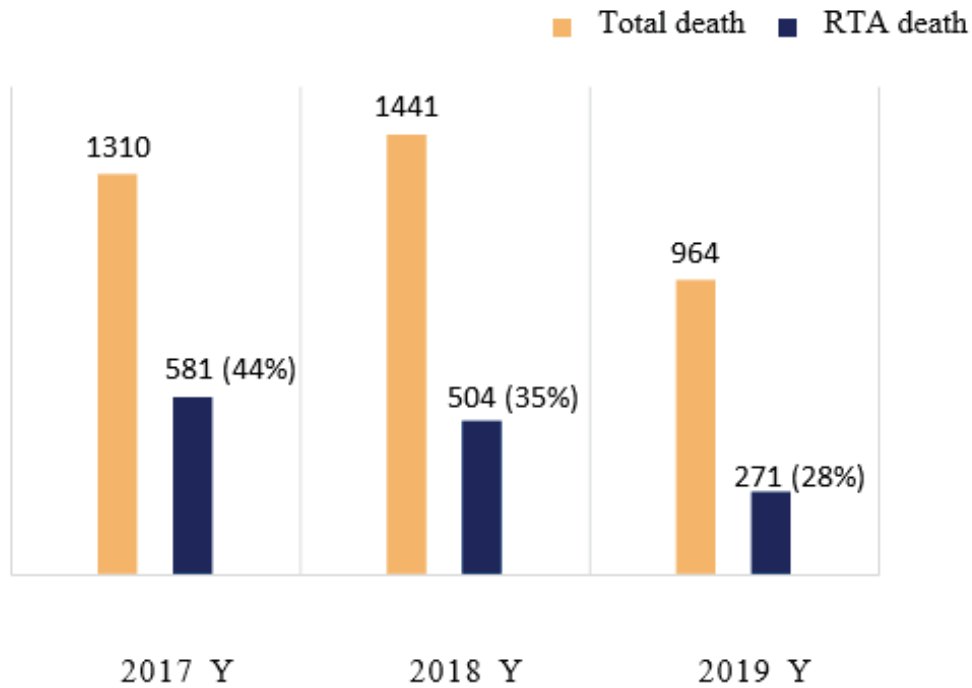


Figure (4) : Distribution of total death (N=3715) and RTA deaths by years (N= 1358).

Table (1) : Distribution of road traffic accident fatalities by direct causes of deaths

| Main cause of death | Frequency | Percentage |
|---------------------|-----------|------------|
| Head injury | 912 | 67% |
| Hip fracture | 214 | 16% |
| Chest injury | 143 | 11% |
| Miscellaneous | 87 | 6% |
| Total | 1356 | 100 |

Table (2) : Distribution of the road traffic accident fatalities by the place of the accident

| Place | Frequency | Percentage |
|---|-----------|------------|
| Main road (high ways) | 805 | 59% |
| Roads in the city including pedestrians | 551 | 41% |
| Total | 1356 | 100 |

Discussion

Every year, so many people killed or disabled due to RTIs worldwide. In Iraq, reliable data on this health problems are scarce, nonetheless, it is one of the public health priority of Iraq that will need to be addressed and investigated in scientific way^{11,25}. Analysis of these data revealed that the total mortalities for the three years were 1838 with predominance of males this finding is similar to the finding reported by other studies^{10,14,26}, this could be explained by the fact of high occupational exposure of males to road using and the lack of road safety in the province together with the congested roads

The current study depicts that most of the injured patients are young people in their productive age, these findings are similar to the findings of other studies conducted^{27,29}.

This study explains that December shows the highest occurrence of deaths due to RTAs in Babylon province this finding is in contrast with findings of other studies^{8,14} this could be explained by the rainy weather and bad road safety in the province and the road congestion due to school time.

The most frequently injured body regions as found in this study was the head, this finding is in contrast with findings of other researchers³⁰, but it goes with the findings of other studies^{31,32}.

One of the main causes of the casualty in RTA is head injury associated with severe traumatic brain injury (caused by head blunt impacts^{33,34}. According to the findings of different studies, car accidents were involved in 43% of traumatic brain injury³⁵⁻³⁷ especially in low- and middle-income countries[38]. Although many studies have been done to examine the mechanisms of blunt-impact head injury, the effect of skull

fracture on traumatic brain injury has not been clearly understood^{39,40} Accessing the hospital emergency services in the event of a crash within a required time and proper first aid provision, road accident victims have a greater chance of survival and a reduction in the severity of the injuries.

The proportion mortality ratio in the current study is decreasing during the last two years this finding is in contrast with the findings of other local studies^{8,14} this

may be due to the difference in sample sizes, the duration or the differences in methodologies of data collections or may be due to the increasing of public awareness of the severity of these deadly events.

Conclusions

Most of the victims are males and in their productive age, December is the most common month during which RTA fatalities took place, head injuries constituted the highest proportion, proportional mortality ratio of RTIs is decreasing during the last two years.

Recommendations: Public awareness should be raised by using media of all kinds. We suggest that traffic law enforcement in Iraq should be seen as priority

- Improvement the neurosurgical medical and adult nursing services (intensive surgical care units) is strongly required in Babylon province to reduce the impact of this high priority health problem using multi-disciplinary team work.

- Further comprehensive large scale longitudinal or interventional studies are requested.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Nursing and all experiments were carried out in accordance with approved guidelines.

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Fig (1): Distribution of road traffic accident by