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INJURY PATTERN AMONG ROAD TRAFFIC ACCIDENTS' VICTIMS IN ABHA CITY, SAUDI ARABIA 2018-2019

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Abstract:

Background*: one of the most permanent causes of disability in young individuals is traffic accidents, which are the major causes of death in the emergency room. In addition to the economic losses to individuals their families, and to nations as a whole that road accidents can cause. Due to all this and other destructive effects of traffic accident, the study is designed to identify injury pattern among road traffic accident victims in abha city, saudi arabia.*

Methodology*: data were extracted from aseer central hospital (ach)'s information system file for 1010 rta victims who were received and admitted to the emergency department of ach during the period between aug 2017 and aug 2018. This date contains bio demographic characteristics, time of occurrence and injury data including pattern, injury severity score (iss), and neurological deficits occurrence.*

Results*: data show that most victims of traffic accidents are males younger than 30 years old and most accidents occur at night. The most frequent injuries are in that order: the lower limbs, upper limbs then head. 2.1 % of the sample reported death, 8.7% reported permanent squeal while 71.8 % manage their injuries through having surgery. However, 47.2 % of survivors from traffic accidents had return to hospital especially complained from a severe pain in injured organ especially at back and head.*

Conclusion*: traffic deaths and injuries are definitely preventable, but for prevention to be effective, an integrated tactic of traffic safety that addresses vehicles, road users and road system infrastructure is required beside traffic safety education and effective enforcement.*

Keyword: *Road traffic injury, Head injury, Pre-hospital death, Road traffic related mortality.*

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INTRODUCTION:

Traffic accidents constitute the substantial cause of disability and mortality in the young Saudi individuals reaching horrible figures. The aim of this study was to review and identify the pattern of injury among road traffic accident (RTA) victims as well as the peak time of accidents and their implications .(1, 2)

Road traffic injuries are a major cause of death in the emergency room (3), there are a lot of types of injuries due to RTA specially head and spinal trauma which may be lethal. (4, 5) Every year the lives of more than 1.25 million people are cut short because of a road traffic crash.

Between 20 and 50 million more people suffer non-fatal injuries, with many incurring a disability as a result of their injury.(6)

Road traffic injuries cause considerable economic losses to individuals, their families, and to nations as a whole. These losses arise from the cost of treatment as well as lost productivity for those killed or disabled by their injuries, and for family members who need to take time off work or school to care for the injured.(7)

There are a lot of risk factors of RTA like speeding, Driving under the influence of alcohol and other psychoactive substances and distracted driving.(8-10)

In India 2003 same study done and the results were: the limbs and the face were the commonly affected areas to suffer external injuries. Head injuries were the commonest form of internal injuries seen in the victims (34.1%), juries seen in the victims (34.1%). The commonest sites for fracture was the lower limbs (43.4%). (11), While in Najran city in Saudi Arabia Head injury represented the most frequent pattern (36%) followed by the spinal injury (23%), lower limb injury (23%), upper limb injury (20%), thoracic injury (17%), pelvic injury and abdominal injury (8%). 4.4% of RTAs resulted in death whilst 9% of cases experienced neurological deficits. (1)

About peak of time, In Najran 58% of the RTAs happened in the evening (6:00 PM-9:00 PM) while 20% occurred in the morning. (1, 11).

Researcher conduct this study to identify injury pattern among road traffic accident - victims in Abha city, Saudi Arabia. Aiming to detect types and sites of injuries, identify complications of victims and detect the clinical outcome of different types of injuries among RTA victims in Abha city and finally to investigate and follow-up relationships between post-traffic accident stress disorder, anxiety, depression and quality of life in patients after traffic-related injuries.

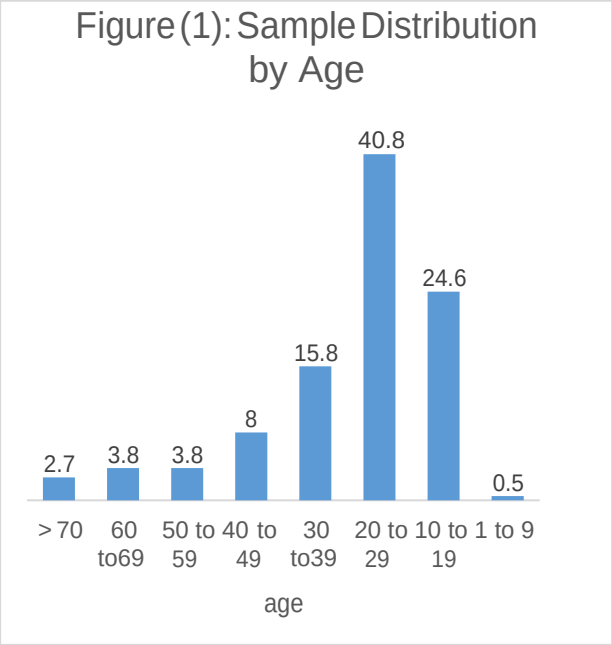
METHODOLOGY:

The study will be conducted in Aseer Central Hospital (ACH), which is the main hospital in Abha city with the highest referral rate for all cases including emergencies. Using a retrospective record based cross sectional design will be used. The study will include all records for RTA victims who were received and admitted to the emergency department of ACH during the study period. An injured patient must meet at least one of the following criteria to be included: that he was admitted to the hospital ward or intensive care unit from the emergency department (ED). transferred to urgent surgery from the ED; indirect admitted (patient discharged from ED and asked to return later); or dead after arrival to the ED. Injured patients with incomplete records will be excluded. All complete files for injured patients who were admitted to the selected hospital and fulfilling the inclusion criteria will be included in the study. It is expected to have 1000 patients for the proposed study duration. (**Aug2017 to Aug2018**). Data will be extracted from hospitals' information system file and will be entered into the data extraction sheet. Data will include bio demographic characteristics : nationality, age, gender, accident data including time of occurrence of road traffic accidents, injury data including pattern, Injury Severity Score (ISS), and neurological deficits occurrence; other associated injuries, co- morbidities; duration of stay in the hospital; clinical outcome of the main injury and if patients return to hospital after discharge with problem from accident. Collected data were then statistically analyzed using SPSS program for IBM ** 22 software system. Descriptive statistics including means with standard deviations or medians for quantitative variables while frequency distribution will used to display qualitative variables. Cross tabulation will be used to test for associations based on chi square test. Multivariate significant tools will be calculated and statistical significant differences will be valuated at the 0.05 level of significance. The investigation will uphold the found meta principle regarding research on human subjects: respect for person, beneficence and justice. For all data collection actuality, informed consent will be sought from the eligible participants following full disclose regarding the study before data collection is done.

RESULTS:

The total sample size was 1010 individuals. According to the following figure (1), the majority of the sample (40.8%) are between 20-29 years old, followed by 24.6% between 10-19 years old. On the other hand, infants between one and nine years old represented only 0.5%. The results show that males are the dominant gender, as

they represent around 89% of the total sample size, while females represent only 11%.



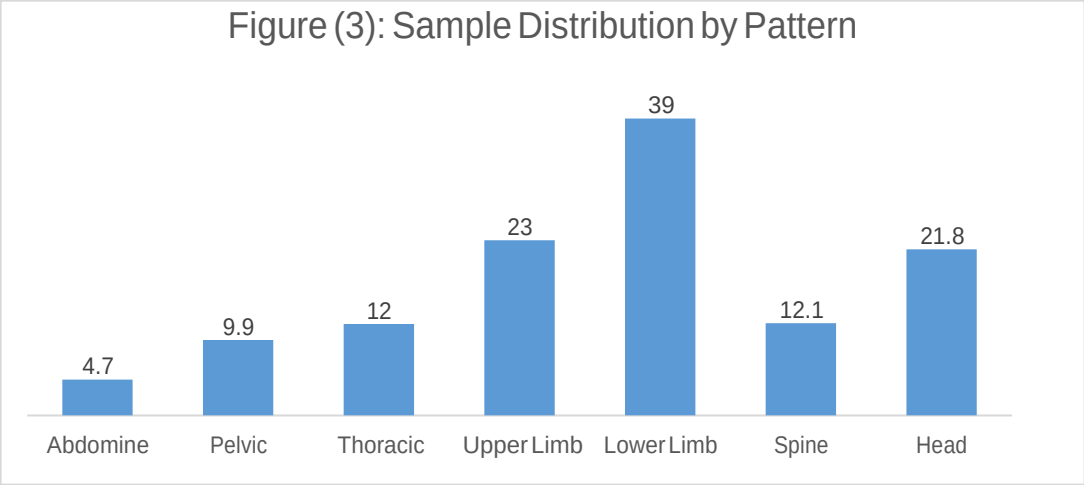
Concerning the time of the injury or accident, it appears that the most frequent time is evening as 32.1% of the sampled individuals reported this time, while in the morning time, the lest percentage has been recorded .(table1)

Table (1): Sample distribution by time of accident

Time	Frequency	Valid Percent
Morning	202	20.2
Afternoon	215	21.5
Evening	321	32.1
At night	262	26.2
Total	1000	100.0
Missing	10	
Total	1010	

Concerning severity score, the majority of the sample (5.3%) recorded 0-9 severity score, while approximately 25% recorded 10-24 points. Moreover, 17.1% recorded between 24-44 points
and only 2.7% recorded 45-75.

The results show that the most frequent injuries are in the lower limbs, as 39% of the sample reported injuries in this location. Upper limb injuries come in the second place with 23% of the sample, while 21.8% of the sample had their injuries in the head.



The majority of the sampled individuals were able to manage their injuries through having surgery (71.8%), while 25.8% managed the injuries through conservative methods and 2.4% with medication. One weak is the duration, most patients need before discharge from hospital, while the rest of patients else need no observation or need a duration of months before discharge. (Table 2).

Table (2): Sample distribution by duration of hospitalization

Consequences	Frequency	Valid Percent
One weak	474	46.9
Two weak	122	12.1
About one month	86	8.5
More than one month	151	15
No need	177	17.5
Total	1010	100.0
Missing	0	
Total	1010	

After accidents, many patients returned to hospital for many reasons including pain of theinjuredorganfromtheaccidents. Backpain,headacheandinternalpainarealso recorded from returned patients. (Table 3)

Table (3): Sample distribution by return to hospital after discharge		
Symptoms	Frequency	Valid Percent
Headache	64	13.4
Backache	115	24.1
Severe pain in injured organ	154	32.4
Internal pain	86	18
Dizziness and vomiting	34	7.1
Other	20	4.3
Non related disease	3	0.7
Total	476	100.00
Missing	534	
Total	1010	

Concerning the consequences of the accidents, 89.2% of the sample reported they did not face any consequences, while 8.7% reported Permanent squeal and 2.1% reported death. (Table 4)

Table (4): Sample distribution by Injury consequences		
Consequences	Frequency	Valid Percent
Permanent squeal	88	8.7
Death	21	2.1
None	899	89.2
Total	1008	100.0
Missing	2	
Total	1010	

DISCUSSION:

Road traffic crashes considered the major public health problems in developing counties, ranked the ninth globally among the leading causes of disability adjusted life years lost and WHO predict this ranking to rise to third by 2020. According to the last report of WHO 1.35 million people die each year due to road traffic crashes around the world, mostly happen in developing countries. Road traffic injuries lead to significant economic losses to individuals, their families, and to nations as a whole. These losses arise from the cost of treatment in addition to lost productivity for those killed or disabled by their injuries, and for family members who need to take time off work or school to care for the injured. Road traffic crashes cost most countries 3% of their gross domestic product.

This is a cross-sectional study carried out in Abha city, the capital of 'Asir Region, KSA, throughout the period from Aug 2017 to Aug 2018 by reviewing 1010 RTA victim's information from Aseer Central Hospital (ACH)'s information system file. The major purpose of this study is to identify injury pattern among road traffic accident-victims in Abha city, Saudi Arabia. Among 1010 individuals, there was a male to female ratio of 9:1 reflecting the driving laws in Saudi Arabia, majority of them were young adult (20 -29 years old). Most crashes happened at evening and night. However, only 2.1 % of cases were dead after the accidents and 17 % of survivors discharged at the same day, most of the victims reported to have high score according to severity score with hard injuries mostly at the lower limbs, upper limbs and head and need to stay under observation for at least one weak in hospital. Surgeries were need in 71.8 % of

cases, while quarter of them needed conservatives' tools. After hospital care, almost 90 % of victims reported any consequences. However, 47.2% of survivors from traffic accidents had return to hospital especially complained from a severe pain in injured organ especially at back and head.

CONCLUSION:

Road traffic accidents consider a recurring nightmare in most Arab Gulf countries because of its high rates but the enormous problem of mortality and morbidity in Saudi Arabia is much frightening. Traffic deaths and injuries are definitely preventable, but for prevention to be effective, an integrated tactic of traffic safety that addresses vehicles, road users and road system infrastructure is required beside traffic safety education and effective enforcement.

Ethics Committee Approval:

Ethics committee approval was received for this study from the ethics committee of medical research studies department, surgery department at Collage of medicine, *King Khalid University, Abha*, Saudi Arabia. Patients' personal data had been removed and depend on case numbers of files.

Consent for Publication:

Written informed consent was not obtained due to the retrospective record based cross sectional design of the study.

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