

Examining The Factors Associated With Road Traffic Injuries among Patients Visiting Kampala International University Teaching Hospital in Bushenyi District.

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ABSTRACT

Road traffic injuries interchangeably recorded as road traffic crashes, road traffic accidents is a big burden in low and middle income- countries of which Uganda is part of. The study objectives were to identify types of Road Traffic Crashes, to describe demographic factors of Road Traffic Crash victims in KIU-TH and to describe socioeconomic outcome of Road Traffic victims in KIU-TH in Bushenyi district. It was a cross sectional study about road traffic injuries in patients visiting KIU-TH in Bushenyi District. The study used a questionnaire to collect information from 51 patients at A & E, surgical department of the hospital. The researcher used primary data with both open ended and close ended questions. The completed questionnaires were coded and entries made into statistical package for social sciences. The study established that motorcycle accidents were associated with significant number of road traffic injuries. The boda-boda motorcyclists contributed a bigger percentage of accidents which was 59%. The most productive age group was 15 - 44 years was highly involved in road traffic accidents at 84.3% and the mean age of road traffic accident victims was 31 years. Males were more involved in accidents at 82.35% and females at 17.6% . The least affected age groups were 0 – 14 years, 35 – 44 years each with 4%. The married contributed a higher percentage of 58.82% while the singles at 24.49%. The researcher's recommendations was that prevention of accidents should target people aged 15 – 44 years especially males, boda-boda motorcyclists and then KIU-TH to provide CT scan services to those with head injuries. Government should provide efficient rescue system especially ambulance services and universal health insurance scheme for accident victims.

Keywords: Road traffic crashes, Road traffic injuries, Accident victims, Boda-Boda motorcyclists, Ambulance services.

INTRODUCTION

RTIs is a global phenomenon affecting individuals, families and decreases a country's population or power that could contribute to economic development [1-2]. Long before cars were invented, road traffic injuries occurred involving carriages, carts, animals and people. The numbers grew exponentially as cars, buses, trucks and other vehicles were introduced and became ever more common. Uganda in particular has been registering deaths from Road Traffic crashes from time of British colonization up to the time of independence and thereafter. This study was an attempt to theorize accidents within the frame work of political ecology. The above expression indirectly shows the importance of ecology of disease or accidents concept when one is researching how community perceive risk factors in relation to road traffic accident in the country at local level. This is strongly linked to ability and capability of national and local authorities to put up road safety strategies. Road Traffic Injuries (RTIs) are interchangeably recorded as Road Traffic Crashes, motor vehicle crashes or Road Traffic Accidents (RTA) [3]. 73% of all global road traffic fatalities occur among males aged 15-49 years. Pedestrians, cyclists, motorists account for a greater proportion of road traffic collisions in LMICS. The global status report on road safety 2013, WHO report indicated Uganda, Nigeria and South Africa had high road traffic accidents [4].

METHODOLOGY

Research Design

A cross sectional study was conducted to find out more about patients visiting KIU-TH with road traffic injuries. It involved determining exposure and disease or injury outcome simultaneously for each person. It involved identifying victims by means of exposure as trauma from road traffic accident to differentiate from other causes of bodily injuries like a fire. The method was preferred because it was less costly and following up of study participants for outcome might not be needed. The study primarily relied on information obtained through administering a questionnaire to respondents. According to Moore, Burnett [1986] the cross sectional study was concerned with finding out the what and how of the phenomenon.

Study Area

KIU-TH is located in cell D, ward 4, Ishaka division, Bushenyi-Ishaka Municipality, Bushenyi District.

Study Population

The study population was patients visiting KIU-TH. KIU-TH is a 500 bed capacity hospital hence the study population was expected to be 500 patients if the beds were fully occupied. From the study population, 51 respondents from the ward formed the study sample.

Sample Size Determination

The study sample would have been 684 participants but due to limited time and resources, the researcher proposed 60 respondents as study sample.

Sampling Procedure

Both probability and non-probability sampling method was used in this study. Quantitative method was used in the process of data collection. The probability sampling methods were multi stage and systematic random Sampling while the non probability sampling was convenient sampling of A & E, Surgical department of KIU-TH. Multi stage random sampling method was used to select KIU-TH. In the first stage, Teaching and Regional Referral Hospitals in western region were selected from among other hospitals in four regions in Uganda. (Northern, Eastern, Central, Western). From the five Teaching and Regional Referral Hospitals in Western Region, KIU-TH was selected as the study unit. A & E, surgical department was conveniently sampled from other departments at KIU-TH. Then systematic random sampling was to be used to select 60 patients at A & E and surgical departments of KIU-TH. Then systematic random sampling was used to select 51 respondents out of the targeted 60 study participants at A & E, and surgical departments.

Inclusion Criteria

A total of 51 victims of Road traffic accidents were included in the study compared to the targeted 60. It was irrespective of age, gender, occupation, religion, tribe and ethnic background. Study participants were drawn from A & E, Surgical department of the hospital.

Exclusion Criteria

Patients with injuries like burns, assault, domestic violence were not included in the study. Patients with only general medical conditions like Diabetes Mellitus, high blood pressure, asthma, psychiatry condition only were also excluded.

Data Collection Instruments

Data was collected by questionnaire, clinical examination, observation and documentary review by the researcher and or researcher assistant. The questionnaires were pretested to check their appropriateness to collect the required information.

Questionnaire

The questionnaire was used to collect information from the selected sample which consisted of patients visiting KIU-TH. Patients information was collected at both arrival and discharge from the hospital.

Documentary Review

In this study, documentary review was used as a source of secondary data. Several documents were reviewed including reports prepared by individuals and organization on the problem under study. It helped to generate conceptual knowledge available and to prepare research instruments.

Observation and Clinical Examination

This was used as evidence to confirm injuries caused by Road Traffic Accidents. Examination was carried out on victims of road traffic crashes which helped in classifying injuries.

Data Collection

The data collected was quantitative in nature aided by a questionnaire. Data collection lasted for 3 weeks instead of one month planned because of limited time and academic programmes which caused transfer from KIU-TH to Kiryandongo hospital teaching site in October 2017.

Data Presentation

Data was presented by frequency tables, pie charts and graphs.

Data Analysis

The procedures involved included data entry, storage, coding and categorisation of data by the statistician to guide analysis. In the analysis, data was categorised in terms of road traffic crashes and distribution described by age, sex, occupation and religion. Data also described the various types of Road Traffic Injuries among accident victims in the hospital. The socioeconomic outcomes from road traffic crashes among patients was described. The data was presented by frequency tables, pie charts and graphs. This was facilitated by statistical package for social scientist (SPSS), excel where by statistical tests was used to describe the distribution of Road Traffic Crashes by demographic factors.

Statistical Test

Statistical test was carried out on the data collected to establish the relationship between dependent and independent variables.

Ethical Consideration

Ethical consideration ensured the protection of rights of study participants.

RESULTS

Table 1: Showing showing road traffic injuries by sex visiting KIU-TH.

SEX	FREQUENCY	PERCENTAGE
Male	42	82.35
Female	9	17.65
Total	51	100

Most males got involved in accidents which was 82.3 % compared to female with 17.7%.

Table 2: Showing road traffic accident casualties by tribe visiting KIU-TH.

Tribe	Frequency	Percentage
Banyankole	45	88.23
Batoro	1	2.00
Baklga	1	2.0
Bakonjo	2	4.0
Baganda	1	2.0
Bafumbira	0	0.00
Others	1	2.00
Total	51	100

From above table, most victims of RTA were banyankole about 88.3% probably because they are the dominant tribe in Bushenyi District while the remaining tribes had few cases.

Table 3: Indicating RTA victims by religion in KIU-TH

Religion	Frequency	Percentage
Catholic	21	41.11
Protestant	17	33.33
Moslem	10	19.60
Born again	2	4.00
Others	1	2.00
Total	51	100

From the table majority of patients with injuries were catholics at 41.1% followed by protestants by 33.3%, moslems at 19.6%, born again at 4%.

Table 4: Showing road traffic accident casualties by district of origin.

District	Frequency	Percentage
Bushenyi		54.90
Mitooma		15.68
Ntungamo		2.00
Sheema		4.00
Rubirizi		23.52
Total		100

From the table above, the majority of road traffic accident patients were from Bushenyi District (54.9%) with Rubirizi District (23.52%), and least from Ntungamo District (2.0%), This was probably due to KIU-TH being located within Bushenyi district.

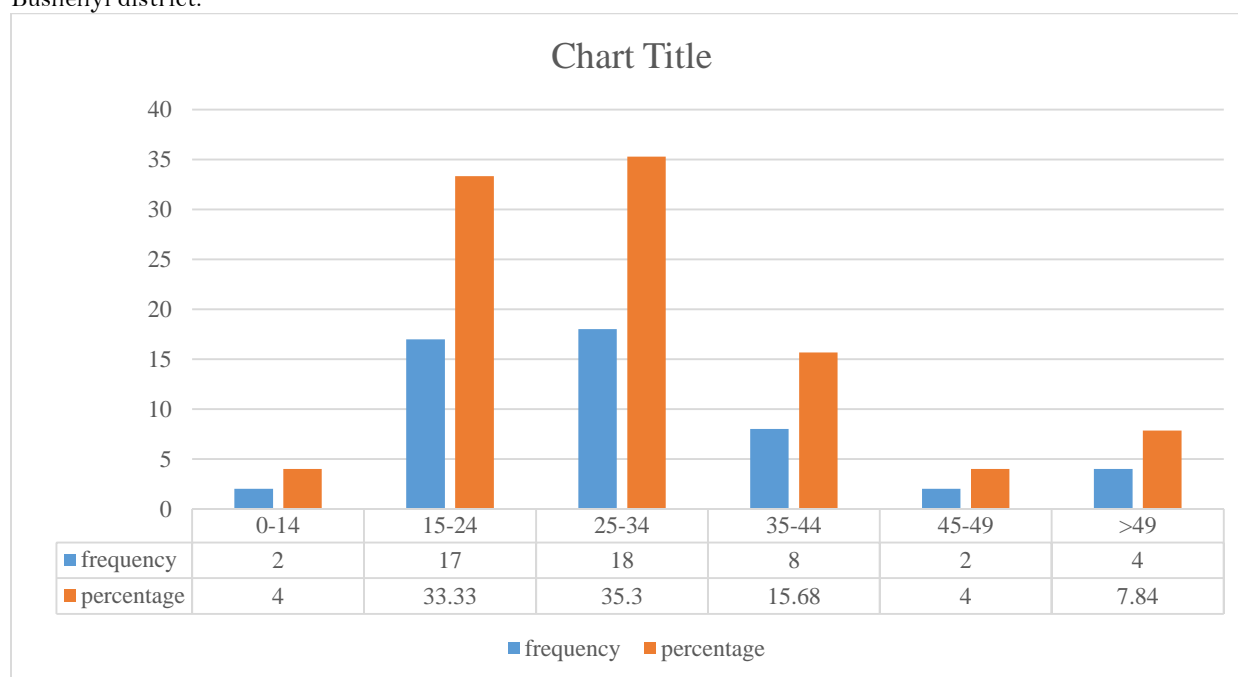


Figure 1: A graph showing road traffic accidents by age group.

According to the graph above,, most victims of road traffic accidents were aged 25 – 34 years which was 35.30% followed by the age group 15 – 24 years which contributed 33.33%. The least affected age group was 0 – 14, 35 – 44 years with each 4.00%. Most RTA victims were aged 15 – 44 years.

Statistical Test

Statistical test was carried out on the data collected to establish the relationship between dependent and independent variables.

Table. 5: Statistical Test

Age group	Class average $[X]$	Frequency $[f]$	fX
0 – 14	7	2	14
15 – 29	19.5	17	331.5
25 – 34	29.5	18	531
35 – 44	39.5	8	316
45 – 49	49.5	2	99
≥ 50	59.5	4	238
		$\sum f = 49$	$\sum fX = 1529.5$

$$\text{Mean } [\bar{x}] = \frac{\sum fX}{\sum f} = \frac{1529.5}{49} = 31.21$$

The mean age was 31 years for road traffic injuries.

Table 6: Road traffic accident casualties by marital status.

Marital status	Frequency	Percentage
Married	30	58.82
Single	13	24.49
Separated	2	0.03
Divorced	0	0.00
Widower	0	0.00
Widowed	3	0.05
Child [student, pupil]	3	0.05
Total	51	100

The table above show most victims of road traffic accidents were married with 58.9% followed by singles at 24.49%.

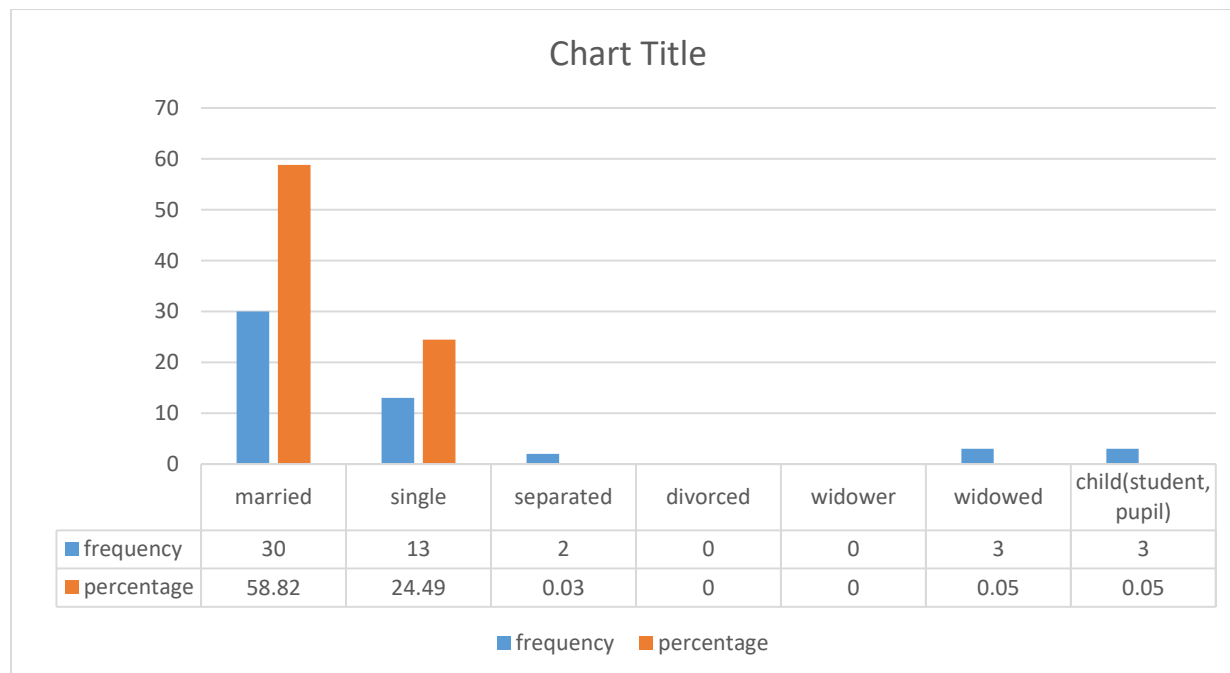


Figure 2: A graph showing road traffic accident casualties by marital status

The graph above show most victims of road traffic accidents were married with 58.9% followed by singles at 24.49%.

Table 7: Road Traffic accident casualties by education level in KIU-TH.

Education level	Frequency	Percentage
Nursery/primary education	27	52.94
Secondary	14	27.45
Tertiary	8	15.68
No formal education	2	4.00
Total	51	100

The table above indicated most road accident victims were of nursery /primary education with 52.94%, secondary level 27.45%, tertiary level 15.68%. The least was no formal education at 4%.

Table 8: Show distribution of road traffic accident casualties by occupation.

Occupation	Frequency	Percentage
Farmer	11	21.56
Government	1	2.00
NGO/Private	3	5.90
Self employment	12	23.52
Boda – Boda	15	29.41
Driver	2	4.00
No occupation [house wife]	2	4.00
Not applicable [child/student]	5	9.80
Total	51	100

Most road accidents were from Boda-boda motorcyclists at 29.5% followed by those with self employment at 23.52%, farmers at 21.56%. The least were in government employment.

Table 9: Illustrating types of road traffic accidents in KIU-TH.

Road traffic accident types	frequency	Percentage
Animal versus pedestrian	1	2.00
Car versus pedestrian	5	9.80
Car versus motorcycle	12	23.52
Vehicle versus animal	0	0.00
Motorcycle versus pedestrian	7	13.72
Car to car	1	2.00
Motorcycle versus animal	1	2.00
Motorcycle versus motorcycle	10	19.60
Bicycle versus pedestrian	1	2.00
Fall from motorcycle	10	19.60
Fall from vehicle	3	5.90
Total	51	100

The above table indicate most collisions were between vehicle and motorcycle at 23.52%. All in all accidents involving motorcycles i.e motorcycle versus motorcycle, pedestrian, animal, fall from motorcycle accounted for majority of accidents on the roads at 59%.

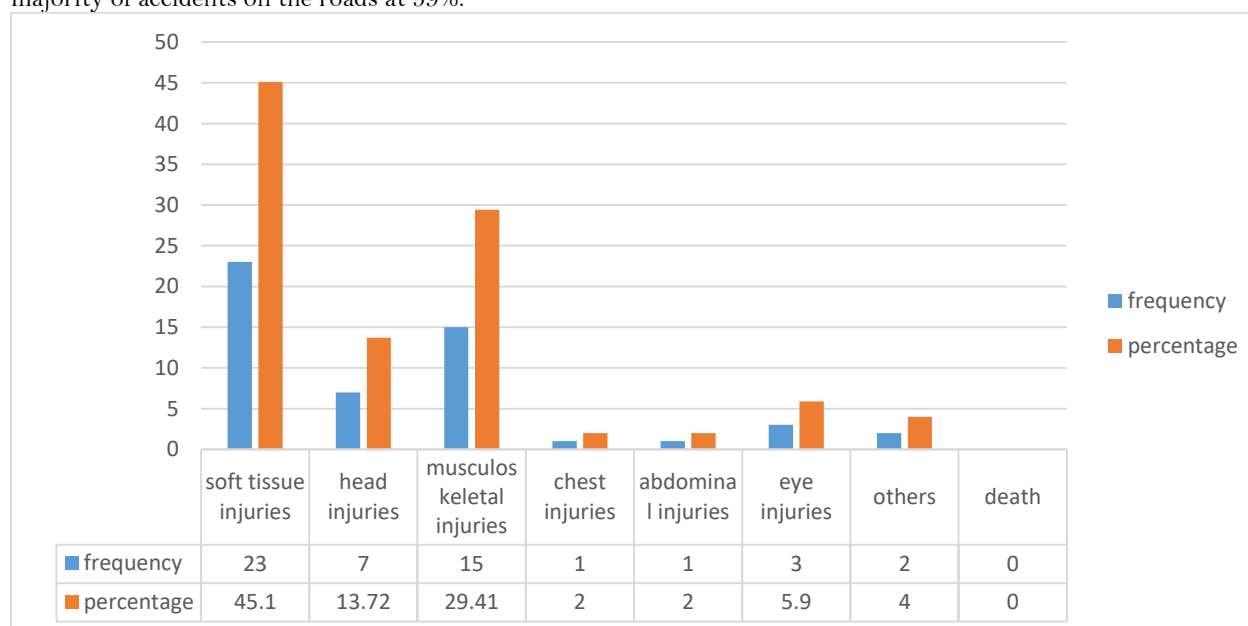


Figure 3: Below is a graph of road traffic injuries in KIU-TH

The graph above shows the most common injuries were soft tissue injuries which accounted for 45.1% followed by musculoskeletal injuries with 29.41%, head injury with 13.72%. There was no death reported as most victims feared discussing death because police might be searching for those involved in accident.

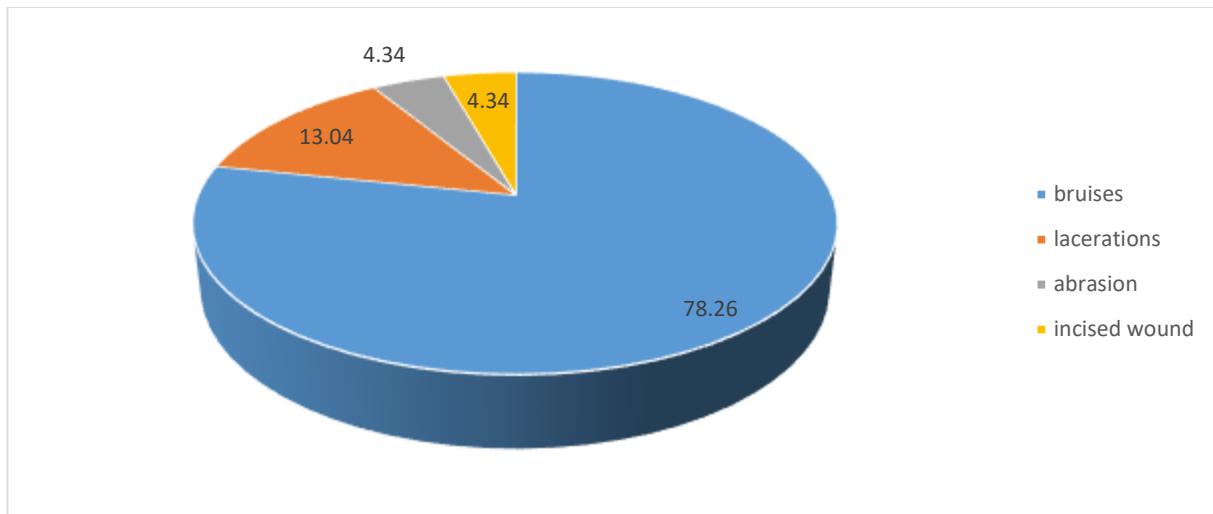


Figure 4: A pie-chart showing soft tissue injuries. (N = 23)

From the pie chart above, most soft tissue injuries were due to bruises with 78.26%, followed by lacerations at 13%.

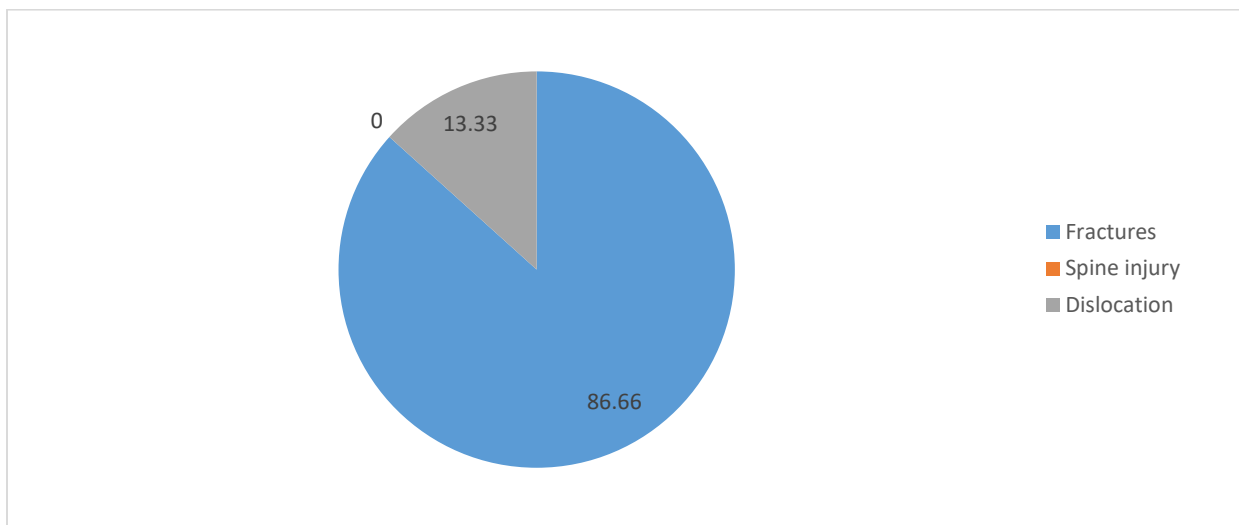


Figure 5: Below is a pie-chart of musculoskeletal injuries (N = 15)

From the pie chart above, fractures were the most common musculoskeletal injuries with 87% and dislocations at 13%.

Table 10: Showing types of fractures among KIU-TH patients.

Fractures	Frequency	Percentage
Femur	2	15.38
Tibia/fibula	6	46.15
Tibia alone	1	7.69
Humerus	1	7.69
Metatarsal	1	7.69
Jaw/mandible	2	15.38
Total	13	100

From the table above most fractures involved both the tibia and fibula bone which was 46.15%. The fractures above resulted into one amputation of the lower limb causing permanent disability.

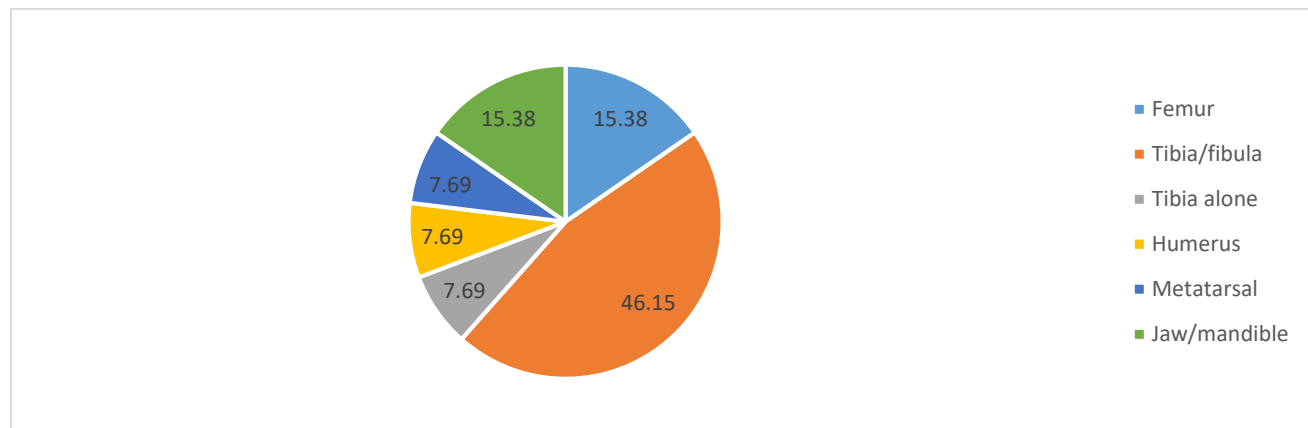


Figure 6: Below is a pie-chart of fractures among KIU-TH patients (N = 13)

From the piechart above, most fractures involved tibia and fibula bones together with 46%, followed by femur and jaw at 15% each.

Table 11: Showing costs arising from road traffic accidents among patients admitted in the hospital in [000's].

	0 – 10	10 – 100	100 – 200	200 – 300	300 – 400	400 – 500	500 – 600	600 – 1000	1000 – 1500	≥1500
Cost of treatment	0 (0%)	15 (33.3%)	7 (13.7%)	7 (13.7%)	6 (11.8%)	2 (4%)	6 (11.8%)	5 (9.8%)	2 (4%)	1 (2%)
Food cost	0 (0%)	36 (70.5%)	9 (17.7%)	5 (9.8%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Transport cost	18 (35.2%)	24 (47%)	9 (17.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Cost of lost items/properties	22 (43%)	24 (47%)	7 (13.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Income lost	17 (33.3%)	23 (45%)	7 (13.7%)	4 (8%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

From the above table, most patients paid between 10,000 – 500,000 for their treatment which was 72.5% but a few patients paid beyond 500,000/= which was 27.5%. In addition to cost of treatment, some patients incurred transport costs to the hospital, food cost while in the hospital, lost properties and daily income after the accident.

DISCUSSION

According to my research, 82.35% males were involved in road traffic accidents compared to females at 17.6% and majority of these were males aged 15 – 44 years which is in agreement with WHO report of 2012, 2013 and 2017. The WHO reports of 2012, 2013 and 2017 did not quote the percentages but reported males were more involved in road traffic crashes than females and the most affected age group among males was 15 – 44 years. These were mainly boda boda motorcyclists. This study did not look at why boda boda cyclists, males aged 15 – 44 years were more vulnerable to accidents because of limited time and resources. This study noted the following categories as more involved in accidents with the married at 58.82%, catholics at 41.11% and in terms of education level, nursery and primary education was at 52.94%. Other studies reviewed did not look at the occurrence of accidents by marital status, education level and religion. According to my study, most injuries were soft tissue injuries and the most common were bruises and laceration. Other Injuries identified where of musculoskeletal system which included fractures especially of the tibia, fibula, femur and also head injuries and eye injuries. This study also agreed with the WHO [5] report by identifying musculoskeletal injuries as part of injuries but not the most common. This study did not identify any spine injury because of time and resources. During my study, one case involved a bull were it knocked a pedestrian which led to serious abdominal injuries with exposure of intestines [6]. Further more no death was

reported among accident victims in this study because the boda-boda cyclists feared discussing the issue in that police might be following them.

CONCLUSION

From the study, road traffic injuries were a common cause of admission of people in hospital especially those of child bearing age, married, productive, caused temporal and permanent disability, affected patients, family members and caretakers productivity. The family members met costs of medical bills which could drive them into poverty and this could be worsened if the injured is a bread winner in the family.

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