

WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCE

DEPARTEMENT OF NURSING

THE PREVALENCE AND ASSOCIATED FACTOR OF TRAUMA CASES VISITED AT EMERGENCY OPD IN GURAGE ZONE HOSPITALS, GURAGE ZONE, ETHIOPIA, 2022/2023

INVESTIGATOR	ID
1. YIMEGNUSH ENASU	113/12
2. ADDISU GETU	042/12
3. REHIMA SIRAJ	99/12

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JUIY 2023,

GURAGE ZONE, ETHIOPIA

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1. YIMEGNUSH ENASU..... 113/12
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3. REHIMA SIRAJ.....99/12

ADEVISORS

1, MR TARIKU G *[BSc, Msc, AHN]*

2 MR TADESSE T *[BSc, MSc, AHN]*

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LIST OF ABREVIATIONS AND ACRONYEM

ANC	antenatal care
BSc	bachelor science
DALY	disability adjusted life year
EPI	Expanded program on immunization
FP	Family planning
IPV	Inter personal violence
OPD	Outpatient department
SEAR	south East Asia region
RTI	Road traffic injuries
TB	Tuberculosis
WPR	Western pacific region
WKUSTH	Wolkite University specialized teaching hospital

SUMMARY

Back ground:-Trauma is injury to the body or an event that cause long lasting mental or emotional damage. It result from exposure to an incident or serious of an event that are emotional disturbing life threating with lasting adverse effect on individual functioning and mental, physical, social, emotional, well-being. It also defined as a bodily lesion at the organic level, resulting from acute exposure to energy (mechanical, thermal, electrical, or radiant) in amounts that exceed the threshold of physiological tolerance. In some cases (e.g. drowning, strangulation, freezing) the injury results from an insufficiency of a vital element. Each year over 5.8 million people around the world die as a result of injury. Injuries are ranked among the leading cause of death and disability particularly in low income and middle income countries where they are growing in significance, largely as a consequence of epidemiologic, demographic, and socioeconomic transitions. Moreover, it is in these very setting that the vital statistics and routine health information are often seriously lacking[1]. Globally, injury has been recognized as one of the most life threatening public health problems. Injuries represent 12% of the global burden of the disease and the third most important cause of overall mortality [2].Millions have accidents occur each year and thousands of individuals lose their lives.

Objective:-The objective of this study was to assess the prevalence and associated factor of trauma cases visited at emergency OPD at guragezone hospitals, gurage zone, Ethiopia.

Methods; Health institutional based cross sectional study was to conduct prevalence and associated factor of trauma case visited in emergency OPD in WKUSTH and attat lured mareyam primary hospital from May to June 2023, using questionnaires by using probability sampling technique.

Result; 128 patients were visited EOPD of WKUSTH during the study period. The commonest mechanism of injury was RTA, 21(16.4%), followed by falling related injury and cut by sharp instruments, 12(9.4%), 10(7.8%) respectively. More males had RTA, cut and falling related injuries compared to females. The commonest outcomes which resulted in severe injuries were RTA, cut by sharp material and falling related injuries.

Conclusion

The magnitude of injury in the hospital was considerably high. Appropriate prevention strategies should be designed and implemented against RTA, falling related injury and cut by sharp instruments.

Keywords: Trauma, suicide, drowning, cases

INTRODUCTION

1.1. Background

Trauma is defined as a bodily lesion at the organic level, resulting from acute exposure to energy (mechanical, thermal, electrical, or radiant) in amounts that exceed the threshold of physiological tolerance. In some cases (e.g. drowning, strangulation, freezing) the injury results from an insufficiency of a vital element [3].

Injuries have traditionally been regarded as random, un avoidable accidents. Within the first few decades, however, a better understanding of the nature of injuries has changed this old attitude, and today both unintentional and intentional injuries are viewed as largely preventable events. As a result of this shift in perception, injuries and their health implications have demanded the attention of decision makers worldwide and injury policy has been firmly placed in the public health arena. Furthermore the growing acceptance of injuries as a preventable public health problem over the past decade or so has lead to the development of preventable strategies and consequently a decrease in the human health toll due to injuries in some countries[2]

It is hoped that the study was important to adjust the emergency care to trauma victims so as to reduce the It immediate and long stand impact of the problem. The result of the study will also help to inform the existence of the problem

1.2. Statement of the Problem

Injuries and violence pose a major public health and developmental problem globally. Each year over 5.8 million people around the world die as a result of injury. Injuries are ranked among the leading cause of death and disability particularly in low income and middle income countries where they are growing in significance, largely as a consequence of epidemiologic, demographic, and socioeconomic transitions. Moreover, it is in these very setting that the vital statistics and routine health information are often seriously lacking[1].

Globally, injury has been recognized as one of the most life threatening public health problems. Injuries represent 12% of the global burden of the disease and the third most important cause of overall mortality (4).Millions have accidents occur each year and thousands of individuals lose their lives. This is well recorded in high income countries[4]. It was demonstrated that trauma patients occupied more than 12% of hospital beds in USA and accounted for more than 50% of orthopedic admissions in UK[5]. For each death from injury there are many more injuries that resulted in hospitalization, treatment in the emergency department, treatment by practitioners outside the formal health sector or never received treatment at all.

The world health organization (WHO) global burden of injury estimate ranks injury among the top ten leading cause of death, with an estimated 5 million deaths annually of which men in Africa have the highest injury related mortality rates in the world .Among African nations the rate of injury mortality in 2004 was the highest in Nigeria and the lowest in Egypt. South Africa and Ethiopia were second and third respectively. Injury is more common among men and among persons aged 15-44 years. Injury deaths attributable to road traffic crashes was the highest in Egypt (41%) followed by Ethiopia (30%) [6]

Each year, over 310,000 deaths occur due to fire related burns in the world[7]. Children ages 1-9 years are more vulnerable to fire related deaths than older children and adults[8]. On the other hand, regardless of age, fall related injuries account for more than half of non-fatal injuries resulting in extensive health care utilization and protracted period of sick days with profound economic impact[9].

In Ethiopia, there are very limited data on injury. Some institutions based studies conducted in different parts of the country. However it shows that injury is a public health problem that results in morbidity, mortality and disability. A study conducted in North Gondar in 2000 rivaled that 5.4% of the total patients seen in health institutions were injury cases and the leading cause of injury were assault (48.5%), fall (18.6%) and road traffic (14.7%)[6].

In Ethiopia, like other developing countries, injury is a common health problem. Although injuries are known to be preventable, still it continues to be the widespread health problem. In Ethiopia, despite government efforts to reduce road traffic injuries, injury is increasing at an alarming rate and constitute around half of all surgical emergencies.

On the other hand, lack of sufficient data about its magnitude leads to underestimation of injury burden. Thus to design effective prevention strategies, there is need of findings about the magnitude of injury and its associated factors. Therefore, the aim of this study will be to determine the magnitude of injury and its associated factors among visiting at emergency outpatient department.

1.3. Significance of the study

The study may serve as a pill over for further research in the area on top of that, it is believed that the research may turn out to be valuable in bringing significant ideas to the fore so as to provoke discussions on the impact of trauma on the economic, social, physical, emotional and psychological of the victims and his/her family as a whole country.

Despite the magnitude and severe consequence of trauma in different ways the necessary data on the prevalence and situation of trauma cases visited is lacking. In line with this the study will seek ways and means for proper descriptions of magnitude and pattern of injuries.

The may provide important information for the responsible body to adjust the emergency care to trauma victim so as to reduce the immediate and long stand impact of the problem.

LITERATURE REVIEW

2.1 PREVALENCE OR TRAUMA

Globally, approximately 5.8 million death as a result of injury in 2010, accounting for, 1 in 10 global death and disability of million. The three leading cause of trauma are road traffic incidents [1.3 million], suicide [844,000], homicide [600,000] [1-4]. Violence is known to cause severe mental and physical impairment and even death. Worldwide, twice as many men die as a result of injury as women. One quarter of all injury deaths are due to road traffic injuries; suicide and interpersonal violence combined account for another quarter of the global total. Worldwide road traffic accidents responsible for the highest injury mortality rates[10].

Males in Africa have the highest injury related mortality rates worldwide. Females in the Americans have the lowest injury related mortality rates worldwide. Taken together, South East Asia Region (SEAR) and the Western pacific region (WPR) account for approximately one half of the total number of injury related deaths worldwide. SEAR and WPR combined account for more than 50% of the total number of DALY's lost globally to injury. For most injury related deaths, males have higher mortality rates than females. Fire related deaths are the notable exception. Mortality rates from road traffic injuries and interpersonal violence among men are almost 3 times higher than those among women. Males in low and middle income countries of Europe (EURLMIC) have highest injury related mortality rates worldwide. Among females, the highest injury related mortality rates are found in Africa and India. Almost 50% of the world's injury related mortality occurs in young people aged between 15-44 years, the most economically productive members of the global population. Injuries account for 12% of the total burden of disease worldwide[2]. Males account for twice the members of DALYs loss due to injury compared with females. Road traffic injuries, falls, self-inflicted violence and other unspecified type of injury are the greatest contributors to the global burden of injury[10]. A road traffic injury (RTI) is any injury due to crashes originating, terminating or involving a vehicle partially

or fully on a public highway. In 2000, an estimated 1.26 million people worldwide died as a result of road traffic injuries. 90% of all road traffic injury deaths occurred in the low and middle income countries[2].

Males in South East Asia and Africa have the highest road traffic injury mortality rates worldwide. Globally, the road traffic injury mortality rate for males almost 3 times higher than that for females. Of the WHO regions, SEAR accounts for the highest proportion of road traffic injury deaths. The SEAR accounts for more than 1/3 of total number of DALYs lost globally to road traffic injuries. Males in SEAR have the highest road traffic injury mortality rates worldwide. The highest road traffic injury mortality rates among the females are found in Africa and India. Over 50% of the global mortality due to road traffic injury occurs among young adults aged between 15-44 years. Males in china and India have the greatest road traffic injury burden, with the number of DALYs lost by men in these countries exceeding those lost in any other world region. Around 60% of the total number of DALYs lost globally as a result of road traffic injuries occurs among young adults aged between 15-44 years[2].

A burn occurs when some or all of the different layers of cells in the skin are destroyed by a hot liquid (scald) ,a hot solid(contact burn) or flame burn, skin injuries due to ultraviolet radiation, radioactive, electricity or chemical, as well as respiratory damage resulting from smoke inhalation, are also considered to be burns. Data presented here refer to fire related burns only (i.e. flame burns and respiratory damage due to smoke inhalation) and do not include burns due to contact with hot substances, or skin injuries due to ultraviolet radiation, radioactivity, electricity or chemicals. Globally, fire related burns were responsible for 238 000 deaths in 2000. More than 95% of fatal fire related burns occurred in low and middle income countries[11].

Females in South East Asia have the highest fire related burn mortality rates worldwide Followed by males in Africa and females in Eastern Mediterranean. Among the various age groups, children under 5 years and the elderly (i.e. those aged over 70 years) have the highest fire related burn mortality rates. SEAR alone accounts for just over one half of the total number of fire related burn deaths worldwide. SEAR also accounts for more than 50% of the total number of DALYs lost global to fire related burns[10]. Females in the countries of the SEARs have the

highest fire related burn mortality rates worldwide. Children and young persons under the age of 44 years account for the highest proportion of the global mortality due to fire related burns[11]. The number of DALYs lost to fire related burns by females in the low and middle income countries of SEAR exceeds the number lost by both sexes in any other region. Over 50% of the total number of DALYs lost globally to fire related burns are among children aged between 0-14 years[2]. According to ICD, all unintentional drowning and submersions (with exceptions of those which occur as a result of cataclysms, transport and water transport accidents) are classified as drowning deaths. Worldwide, an estimated 450,000 people drowned in 2000. 97% of all drowning deaths occurred in low and middle income countries[10]**.**

Males in Africa and the Western pacific have the highest drowning related mortality rates worldwide. Among the various age groups, children's under 5 years of age have the highest drowning mortality rates worldwide. The greatest number of drowning deaths occurs in the WPR[2].

The WPR accounts for nearly 40% of total number of DALYs lost globally to drowning. Males in Africa, china and low and middle income countries of Europe have the highest drowning mortality rates worldwide. Among females worldwide, those in Africa, china and India have the highest drowning mortality rates. Over one half of the global mortality due to drowning occurs among children aged between 0-14 years. Males in China followed by males in Africa and women in China, accounts for the highest number of DALYs lost to drowning worldwide[2]. Over 60% of the total. The overall poisoning mortality rate among males in Europe is approximately 3 times higher than the rate in either sex in any other world region. The European region alone accounts for around 1/3 of all poisoning deaths worldwide. EUR and SEAR together account for over one half of the total number of DALYs lost globally to poisoning. The highest poisoning mortality rates found in the male populations of the EUR-LMIC. Over 60% of the global mortality due to poisoning occurs among adolescents and adults aged between 15-59 years. Males in EURLMIC accounts for the highest number of DALYs lost to poisoning worldwide. The majority number of DALYs lost globally to poisoning are among young children and young adults[2].

Interpersonal violence is defined as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal development, or deprivation. IPV related mortality includes deaths due to homicide, sexual assault, neglect or abandonment, and other forms of maltreatment. In 2000, an estimated 520,000 people worldwide died as a result of IPV. 95% of homicide occurred in low and middle income countries[12].

The highest IPV mortality rates worldwide are found in the Americans, among males aged between 15-29 years. Almost 1/3 of all deaths due to IPV take place in the American regions. AMR also account for 1/3 of the total numbers of DALYs lost globally to IPV. The IPV mortality rate in males in low and middle income countries of Americans is twice that in any other region. Among females worldwide, those in Africa have the greatest IPV mortality rates. Over 60% of the global mortality due to IPV occurs among young persons aged between 15-44 years. The greatest numbers of DALYs are lost to IPV by men in low and middle income countries of Americans. Young adults aged between 15-29 years account for over 40% of the total number of DALYs lost globally to IPV[2].

Suicide is defined as a death arising from an act inflicted up on oneself with intent to kill oneself. In 2000, an estimated 815,000 people worldwide committed suicide. 86% of all suicides occurred in the low and middle income countries[13]. Worldwide the highest suicide rates are found among males in European region and among both sexes in WPR. The WPR has the greatest share of suicide deaths relative to the other world regions. The WPR accounts for 38% of the total number of DALYs lost globally to suicide. Males in LMIC of Europe have a suicide rate that is almost twice among men in the other regional groupings. Similarly, women in china have a suicide rate i.e. approximately twice that of women in the other parts of the world. Over 50% of global mortality due to suicide occurs among young persons aged between 15-44 years. The greatest numbers of DALYs are lost to suicidal behavior by women in China. Men in China, India and low and middle income countries of Europe also account for a significant proportion of the number of DALYs lost globally to suicidal behavior. Over 40% of the total number of DALYs lost globally to suicidal behavior occurs in young adults aged between 15-29 years[2].

The increase life expectancy together with urbanization and change in life style has led to arise in the incidence of non-communicable disease and injury in developing countries[14]. An injury is one of the commonest causes of death and disability in the African region, particularly among those aged between 5-29 years. Three of top five causes of death for this age group are injury related[15]. Every day in Africa about 2400 people die from injuries. Injury related death in Africa among people aged 15-44 rank second to HIV/AIDS. For every person who dies of injury over 35 others suffer from non-fatal injuries (36). RTI are among leading cause of injuries in Africa. Death from RTI in Africa regions are 40% higher than in all over LMIC and 50% higher than the world average[15]. These injuries are an important and largely neglected health problem in developing countries. Injuries pattern study in Uganda showed an incidence of 116/1000/year and annual mortality rate of 92/1000 person in rural area and 217/1000 person in urban areas[16]. The leading causes of death were drowning in the rural setting and road traffic in urban setting. Another in Kampala, Uganda 7% of all patients seen in hospital were injury cases and 50% of injuries were caused by traffic crashes followed by cuts/stabs(16%) and falls (13%)[17]. Although injury related mortality was higher than urban than rural area, the burden of disability from non-fatal injuries are assumed by disability from non-fatal injuries as assessed by disability days, was however higher in rural than in urban areas[18].

According to a study conducted in Eldoret, Kenya, assaults were leading cause of injuries being responsible for 40% of the cases were road traffic accidents accounted for 18% falls 17%, burns 3% and dog bites 3%. 88% of the causalities were treated as outpatients. While 20% were admitted and the mean length of stay was seven days (54). Another study conducted in Rift valley provincial general hospital, Kenya, showed that 73.5% of 5907 surgical admissions were trauma cases and the most common injuries were soft tissue injuries, fractures, burns and head injuries. Trauma was the leading cause of death (6.6%) among all surgical admissions[19].

In Ethiopia also injuries constituent around a half all surgical emergencies and were a major reason for an emergency room visit in A.A during 1999 more than a quarter of all surgical admissions and 62% of orthopedic admission in black lion hospital. Data compiled by minister of health in 2000/2001 showed that injuries ranked fourth and fifth as a leading cause of admission and death respectively for 6.2% & 1.6% Ethiopia hosts an annual road traffic fatality of 114 deaths per day 10,000 vehicle a property loss of over 56 million us dollar every year.

In Ethiopia there is limited data on injuries. Some institution based studies conducted different countries, however shows that injury is a public health problem that result in morbidity, disability and mortality. A study conducted in north Gondar in 2000 reviled that 5.4% of total patient seen in health institution were injury case and the leading causes injury were assault (48.55%), fall (18.6%) and road traffic (14.7%)[6]. Another study conducted in 1999 tikurambessa hospital A.A reported that 77% of the injuries were unintentional and motor vehicle injuries account for 41% followed by fall and assault that accounted for 21% & 20% respectively (46). Pedestrians more affected by in both cases although the magnitude is significantly higher in Addis (93%) than north Gondar (64.1%). Another admission in pediatrics admission in Gondar teaching hospital reviled that 4.8% of the total admitted children over the five year period (1988-1993) were injury cases and the cases were firearm (25%),falls (22%),falls(23%),burns (16%) and motor vehicle accidents(14%)(47). Studies from Ethio-Swidsh children hospital and Attat hospital have shown that burns are important cause morbidity and mortality[20].

Some studies have documented that seriousness of physical sexual assault violence. A study in elementary school in A.A and Admit Tulu reported that 21% of urban and 64% of the rural children's had skin bruises or bodily swelling as a result of physical punishment. Among physical abused married women 46% had sustained minor and serious somatic injuries in their life time[21].

In a study conducted in North Gondar, 5.4% of the total patients seen in health institutions were injury cases (52). A community based study in Jimma zone similarly reported a magnitude of 8.9 %(53). Various studies also revealed that males and young adults aged below 40 years were the most vulnerable groups to injury (52, 54, and 55). In a preliminary study in Tikurambessa hospital, out of 3822 injuries, 77% were unintentional (55) and it was 92% in the community based study in Jimma zone (53).

2.2 associated factor of trauma

A cross sectional conducted in two Mexican city to identify factors associated with the severity of RTI from emergency department based on servile system showed that alcohol consumption , motor cyclist, program mainly focus on vulnerable road users are significantly associated with road traffic injuries[63] .other case study using a mixed method in north Canada asses investigate

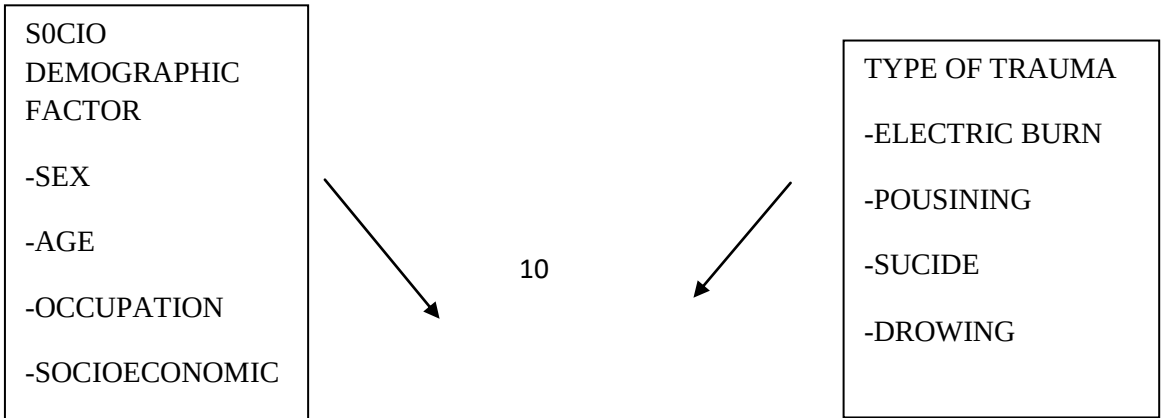
environment determinants of injury and trauma showed that environmental influence, particularly weather and ice condition, gender, age are the key factors contributing to land based injuries and trauma [64]

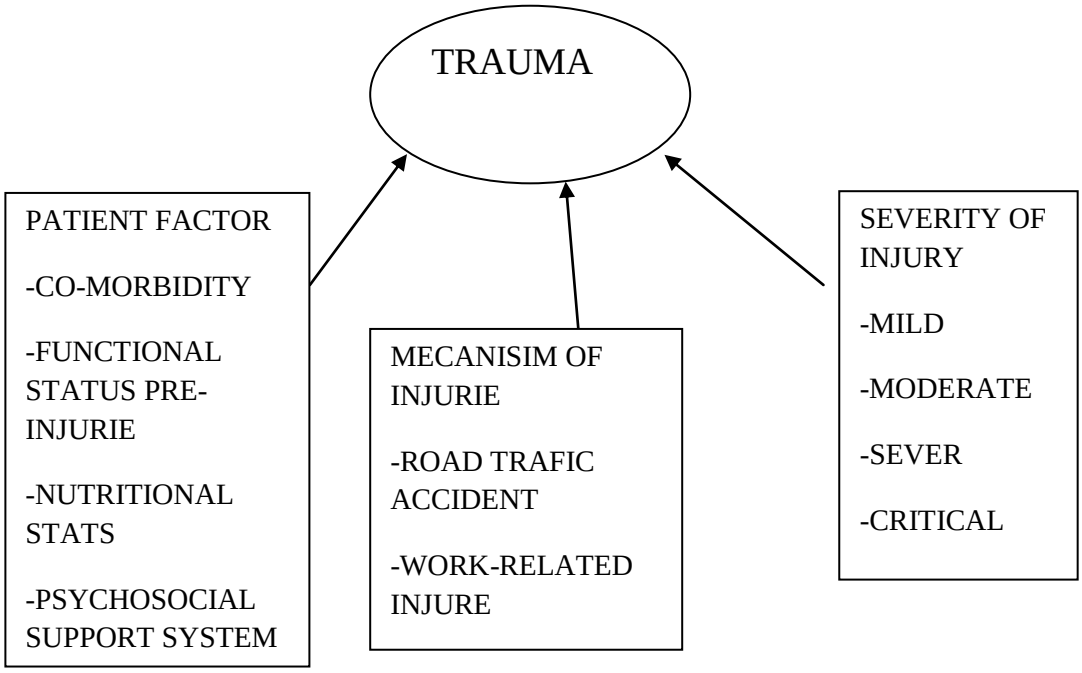
A national population based house hold survey in Kenya prevalence and predictors of injuries showed that sex, residence, age group, episodic alcohol drinking, medicational level, occupation, wealth quintile, marital status, smoke are factors associated with injuries [65] .other study done in Kenya identify factors associated with severity of road traffic injuries showed that rainy weather and night time crushes were factored associated with severe injury [69].

Prospective cross sectional study done on Addis Ababa tikuranbessa specialized hospital to asses pattern of injury and associated variables as seen in the emergency department showed that the odds of injury of assault to be increased in male, patient with monthly income <650 Ethiopian birr, and age< 40 years old is significantly associated with injury[66]. Study done Addis Ababa to identify work related injury and associated factor among iron and steel industry workers showed that work stress, night shift, educational level, industry display safety information at appropriate places, provide training were factors related to work injury [68].

Other study done on Tigiray to determine prevalence and associated factor of suicide attempt among adult Eritrean refugees showed that having current symptom of trauma, a family history of mental disorder, history of post traumatic stress disorder, and sever hopelessness were significantly associated with suicide attempt[67]. A cross-sectional study conducted in Amehra national regional state to identify prevalence and factor associated with road traffic incident among adolescent and children showed that socio-economic status [wealth and middle in-come] , no education of guardian or family, mothers marital status[divorced], and living a child with another child for sometimes and most often factors associated with RTI. [62]

2.3 CONCEPTUAL FRAME WORK





OBJECTIVES

3.1. General Objective

- To assess the prevalence and associated factor of trauma cases visited at emergency OPD in guragezonehospitalsgurage zone, Ethiopia.

3.2. Specific Objectives

- To assess the prevalence of injury in WKUSTH and attat lured mareyam primary hospital from May to June, 2023
- Determine associated factor WKUSTH and attat lured mareyam primary hospital from May to June, 2023

METHODS AND MATERIALS

4.1. Study area

The study was to conduct at gurage zone hospitals; gurage zone is located 158km south of Addis Ababa capital city of Ethiopia. Gurage zone has seven Hospitals.Wolkite University specialized teaching hospital and attat lured mareyam primary hospital is our study area, WKUSTH, is found on gubretown, wolkitezone, Southern region, South West, Ethiopia. Which is found around 167 km far from Addis Ababa (the capital city of the country)? The hospital was established in2009. It has total staff number of 229 which are 119 nurse, 23 pharmacist, 42doctor, 24midwife, and 19 specialist.The hospital has emergency case team, delivery CT, outpatient CT, in patient CT, surgical CT, those the above risked case team provide minor and major surgery, FP, EPI, delivery and postnatal care, emergency treatment, ANC, abortion and post abortion care, TB, leprosy and malnutrition and attat is rural area in Ethiopia , 175kilometer to the south of addisabeba, which far away 17km of the town of wolkite on the road to hosanna in chehaworeda of guragezone,SNNPRs.

In 1969, attat hospital started, at first housed in an empty diocesan school. From its start, attat hospital was planned as an integrated project for health and rural development, offering both clinical/curative and preventive and community-based health service to far flung village in gurage, serving an area of 800,000 people. The hospital is owned by the Ethiopian Catholic Church and managed and financed by medical mission sisters.

4.2 Study period

The study was conducted from May 17/09/2015-June 18/10/2015.

4.3 Study design

An institution based cross sectional study was employed at emergency outpatient department.

4.4 Source population

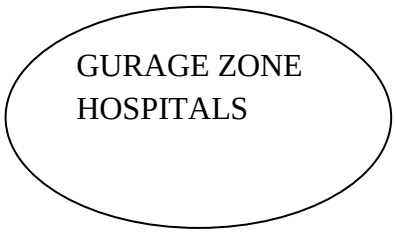
All patient found in emergency department was the source population.

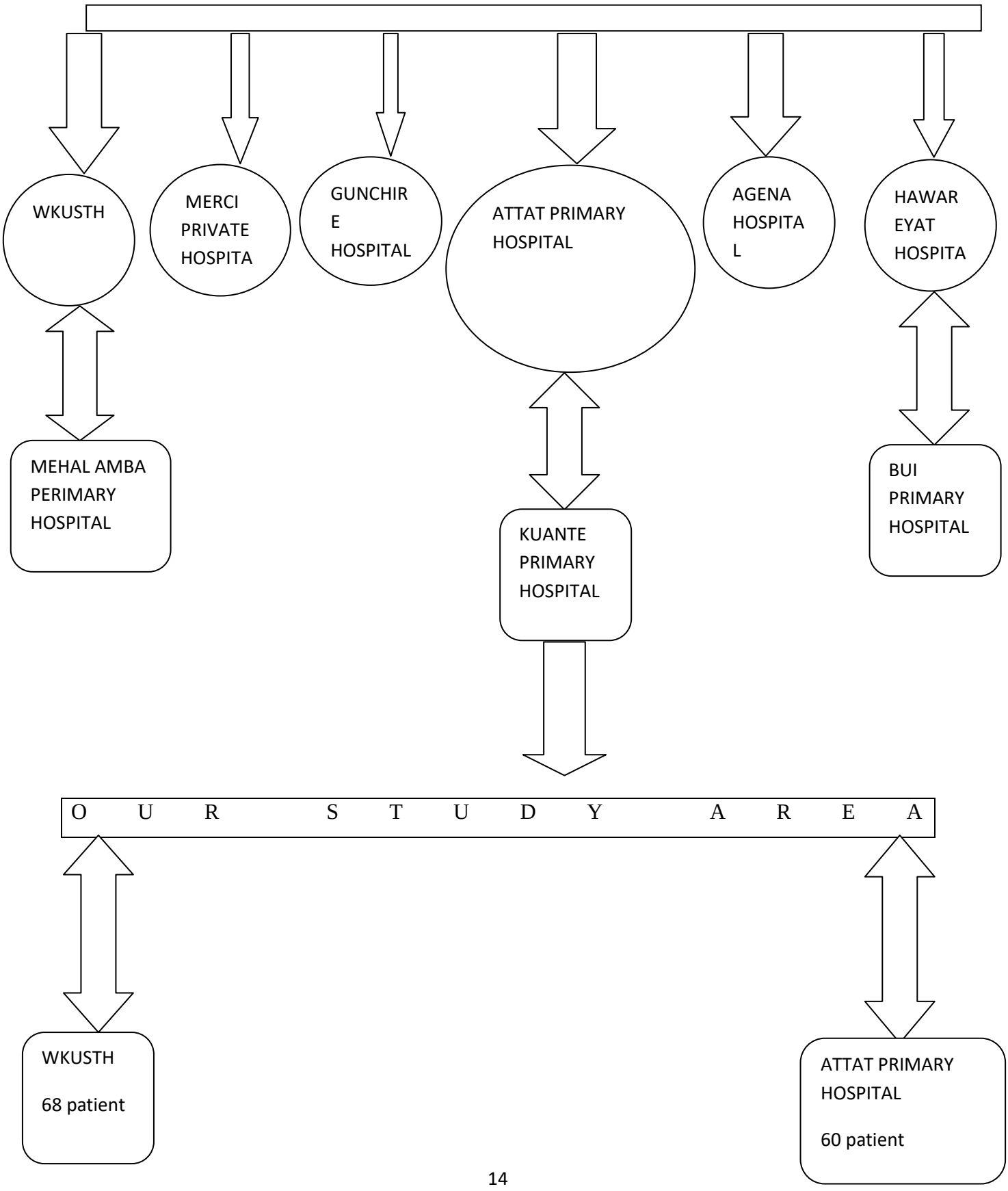
4.5 Study population

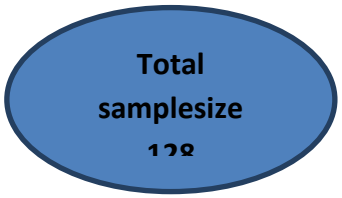
All the patients who visited the emergency OPD of WKUSTH and attat lured mareyam primary hospital due to injury during the study period will be the study population.

Sampling procedure

Probability sampling technique was used those people who visit these health institution emergency department. Then all sample size (128) patient was interviewed with self-administered questionnaire. There are nine hospitals in gurage zone WKUSTH, merci private hospital,gunchire primary hospital, attat primary hospital, agena primary hospital, hawariyat primary hospital ,mehal amba primary hospital, kuante and bui hospital. From those hospital WKUSTH and attat lured mareyem hospital was our study area.




WKUSTH
MERCI PRIVATE HOSPITA
GUNCHIR E HOSPITAL
ATTAT PRIMARY HOSPITAL
AGENA HOSPITA L
HAWAR EYAT HOSPITA
MEHAL AMBA PERIMARY HOSPITAL
KUANTE PRIMARY HOSPITAL
BUI PRIMARY HOSPITAL
O U R S T U D Y A R E A
WKUSTH
68 patient
ATTAT PRIMARY HOSPITAL
60 patient



4.6 Eligibility Criteria

4.6.1 Inclusion criteria

- All patients visited at emergency OPD due to injuries on the study time.

4.6.2 Exclusion criteria

Those patients who come to emergency OPD because of medical cases.

Those patients who referred and visit to these hospital but are out of the catchment of WKUSTH and attat lured mareyamprimary hospital.

4.7. Sampling Technique

Simple randomProbability sampling technique was used to collect the data.

4.7.1. Sampling Size Determination

-

The sample size was determined by using a single population proportion formula by assuming study done on Jimma University.

$N=Z^2 p(1-P)/D2$ (1.96)(1.96)0.082(1-0.082)/(0.05)(0.05)=116

Where n=numbered required

z=critical value (1.96)

p=prevalence (8.2%according to the study conducted in Jimma university,(2014)

D=margin of error (5%). and by adding 10% of non-response rate the sample will be 128

4.8. Data Processing and Analysis

The collected data was cleaned, cheeked for completeness, compiled and data analysis was done by computer method and then coded and entered in to computer then analyzed using SPSS version 20. Descriptive analysis was computed for selected variable. Binary logistic regressions were conducted to select candidate variable at p value of ≤ 0.25. The result of the study was presented by using tables, figure, and statement.

4.9. Data Collection Instrument and Procedures

Data was collected using questionnaires the socio demographic characteristics and characteristics of injury i.e. mechani mechanism, place of injury, activity at the time of injury, site and degree (severity) of injury and outcomes was collected by questionnaires.

Data was collected by investigator at emergency OPD on their respective days. The investigator will be trained how to collect this particular questioner and the data collection process was supervised closely by the investigator

4.10 ethical consideration

Ethical clearance was obtained from wolkite university collage of health and medical science from department of nursing before the study conducted. The patient name was not be recorded on the questionnaire to grant confidentiality of the information

4.11. Operational Definition

Cases- are defined as an injury presented by one person for first time, irrespective of whether that person has one or multiple injuries.

Intentional injuries-injuries those occurred deliberately.

Unintentional injuries-are those which occurred accidentally.

Minor injury-injuries which are superficial like bruise and minor cuts and first degree burn for burn injuries.

Moderate injury- fractures, injuries required some skilled treatments such as primary fracture management and suture, second degree burn for burn patients.

Sever injury-injuries with internal organ damage, if the injury requires intensive medical and surgical management, third and fourth degree burn for burn patient.

4.12. Study Variables

4.12.1. Dependent Variable

The prevalence of trauma cases

4.12.2. Independent Variables

Age

Sex

Ethnicity

Occupation

Marital status

Educational status

Mechanism of injury

4.13. Data collection instrument

Structured self-administered questionnaires both in Amharic and English can be used to assess prevalence of trauma.

4.14. Data collection technique.

Structured questionnaire is developed first in English. The questions and statements are arranged according to particular objectives that they can address. Then the first draft of questioner is submitted to the advisors and colleagues for comments. The valuable suggestion was considered improving the instrument. Accordingly, redundancy, vagueness and logical flow of the questions will correct. After extensive revision, the final version of the English questionnaire will translated to Amharic version, then back to English to ensure understandability and message.

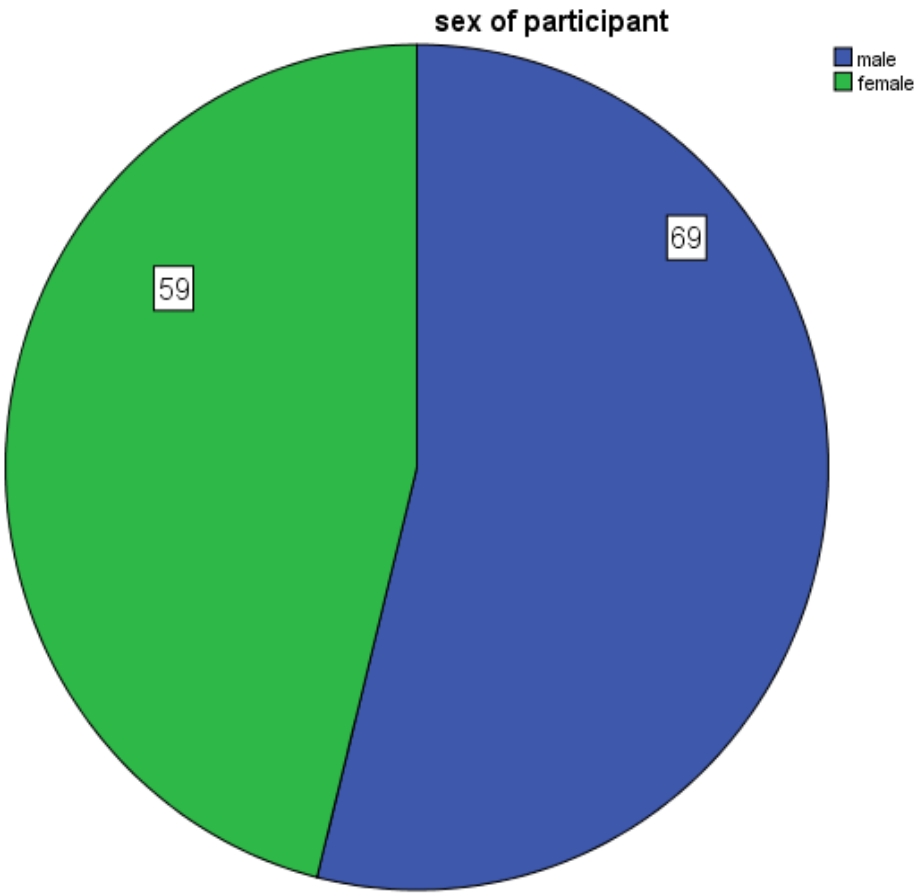
Results

One hundred twenty eight injury cases were participated in study with response rate of 100% and all visited cases analyzed in the study. From the injury cases visited 69(53.9%) were males and 59(46.1%) were females. 80(62.5%) Of cases were 15-49 years old, 10(7.8%) were 5-14 years old, 15(11.7%) were >65 years, and 23(18.0%) were 50-65 years old.

Out of 128 respondent majority of respondent is elementary school 32(25.0%). From the injury cases visited at EOPD on the study time 51(39.8%) were orthodox, and 6(4.7%) were others. The occupational status of the cases majority cases were students which was 38(29.7%). Majority of cases married 62(48.4%). See table 1a and b

Table 1; socio demographic characteristics of injury cases who visited EOPD at gurage zone hospitals2022/23

Variable	Frequency	Percent (%)
Age(n=128) 5-14	10	7.8
15-49	80	62.5
50-65	23	18.0
>65	15	11.7
Educational status(n=128)		
Cannot read	25	19.5
Read and write	29	22.7
Elementary school	32	25.0
Secondary preparatory school	23	18.0
Higher education	19	14.8
Marital status(n=128)		
Single	52	40.6
Married	62	48.4
Divorced	12	9.4
Widowed	2	1.6
Religion(n=128)		
Orthodox	51	39.8
Muslim	33	25.8
Protestant	21	16.4
Catholic	17	13.3
Others	6	4.7


sex of participant
male
female
69
59

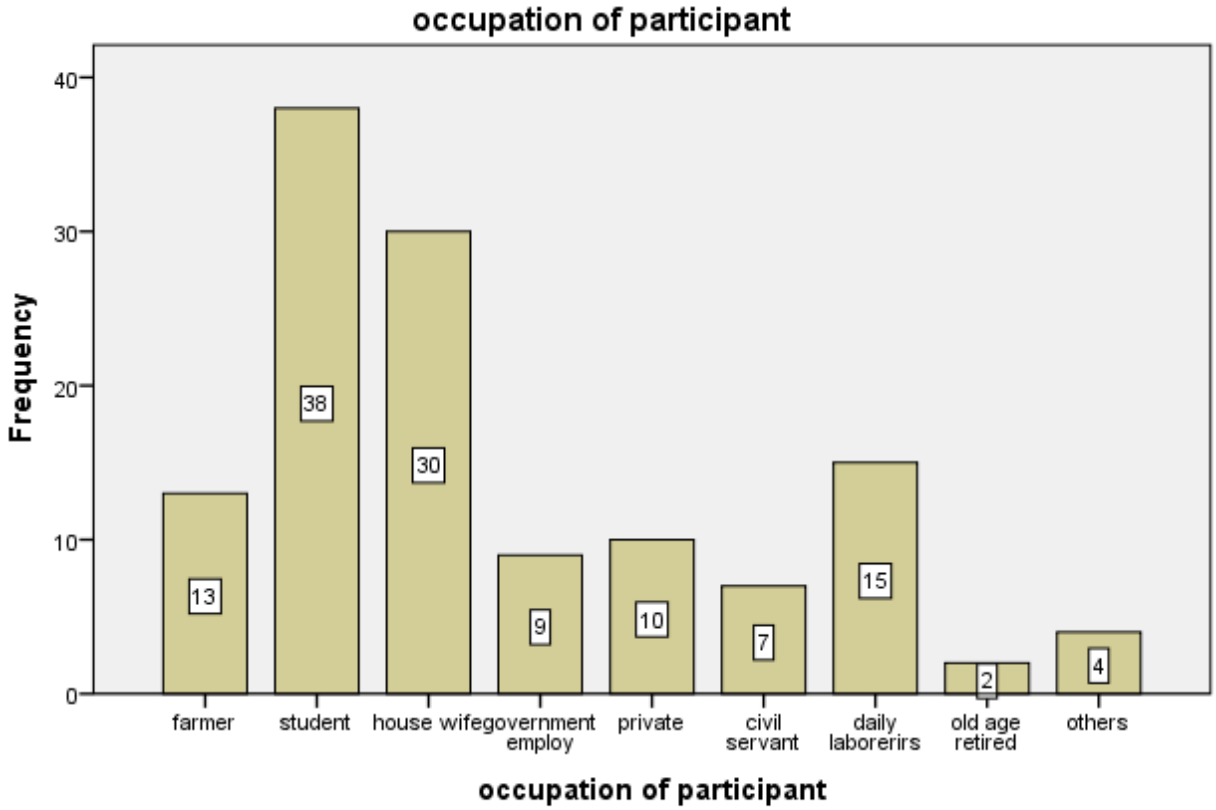


Table 2; the prevalence of trauma visited EOPD at gurage zone hospitals 2022/23

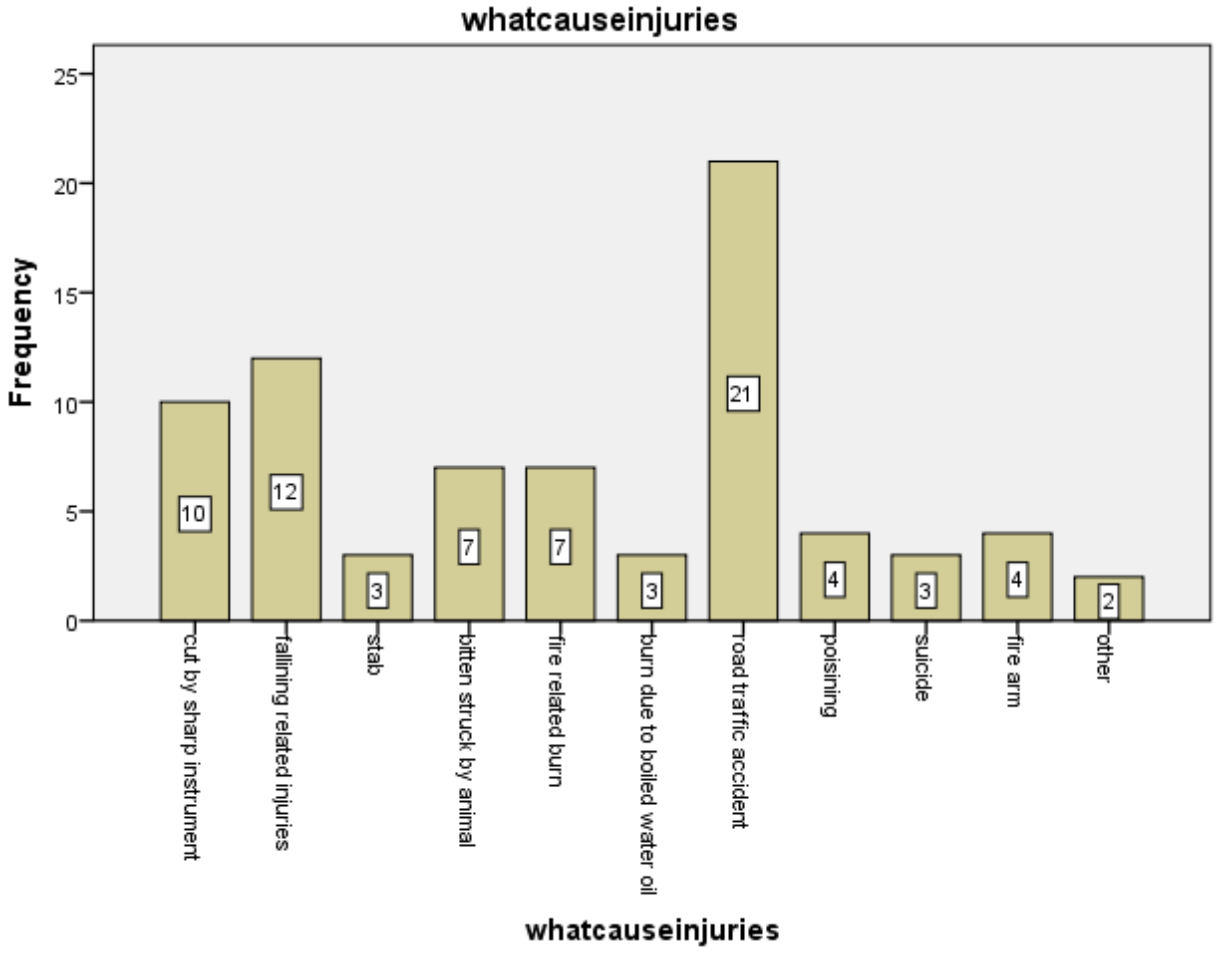
Why do you come to emergency department?

Why do you come(n=128)	Frequency	Percent(%)
Trauma	75	58.6
Medical illness	28	21.9
Surgical illness	25	19.5
Do you get trauma(n=128)	Frequency	Percent (%)
Yes	75	58.6
No	53	42.4
Time of injury	frequency	percent
Day	64	85.3
Night	11	14.7

Intent of injury(n=128)	Frequency	Percent (%)
Intentional	11	8.6
Unintentional	65	50.8

Result on the intent of injury showed that 11(8.6%) were injured intentionally and 65(50.8%) were injured unintentionally.

The commonest mechanism of injury was RTA; 21(16.4%), followed by falling related injury 12(9.4%), cut by sharp instruments 10(7.8%), fire related burns 7(5.5%), firearm 4(3.1%), stab 3(2.3%) and others 2(1.6%).



Out of the 128 cases visited at the EOPD OF WKUSTH, 24(18.8%), 20(15.5%), 9(7.0%)8(6.3%) took place on the inside home, road,0n the job and around home respectively. 24(18.8%), 20(15.5%), 9(7.0%)8(6.3%) took place on the inside home, road,0n the job and around home respectively.

Table 3 place of injurywho visited EOPD at gurage zone hospitals 2022/23

Around home	8	6.3
Inside home	24	18.8
Farming place	5	3.9
On the job	9	7.0
On the road	20	15.6
On the bush	3	2.3
In the school	3	2.3
Other places	4	3.1
Activity on the time of injury		
On usual work	16	12.5
On house hold activities	25	19.5
On the way of work/back home	13	10.5
On the trip to other place	10	7.8
Sleep/Food/Shower	2	1.6
Walking around	1	0.8
Other	9	7.0
body affected by injury		
Only head	11	8.6
Head and neck	6	4.7
Thorax and abdomen(N=128)	5	3.9
Back	6	4.7
Both upper and lower	18	14.1

extremities		
Only upper extremity	9	7.0
Only lower extremity	10	7.8
Groin and genitals	5	3.9
The whole body	5	3.9
Others	1	0.8

From the 128 cases managed as an outpatient 34(26.6%) were referred immediately for further management, 31(24.2%) treated and discharged as an outpatient 3(2.3%) were died immediately. With regard to injury spectrum 41(32.0%) were classified as moderate, 18(14.1%) were severe and the rest 17(13.3%) were classified as minor injury.

Referral source(n=128)	Frequency	Percent (%)
Self-referral	36	28.1
Primary care clinic	25	19.5
Other	15	11.7
Outcome of patients(n=128)	Frequency	Percent (%)
Treated and discharged as an outpatient	31	24.2
Referred immediately for further management	34	26.6
Died Immediately	3	2.3
Disposition(n=128)	Frequency	Percent (%)
Treated and discharged	31	24.2
Admitted	38	29.7
Died	7	5.5
Severity of injury(n=128)	Frequency	Percent (%)
Minor	17	13.3
Moderate	41	32.0

Patient admission(n=128)	Frequency	Percent (%)
Yes	57	44.5
No	19	14.8
Influence of alcohol=128	Frequency	Percent (%)
Yes	3	2.3
No	73	57.0

Associated factor for trauma

Binary logistic regression identify factor associated with trauma case sex, occupation and educational status had associated with trauma case in binary logistic regression analysis. In multivariable logistic regression analysis factor that were significantly associated with trauma were sex**.**

The odd of trauma case were two times higher than among male than female [AOR=0.369;95% CI(0.179,0.759)]

Variable	Trauma case		Binary logistic regression	Multi variety logistic regression
	Yes	No	COR[95%CL]	AOR[95%CL]
Sex male	47(64.4%)	22(40%)	0.396[0.179,0.759]	2.712[1.318,5.579]
Female	26(35.6%)	33(60%)		

NB, variable having a P value ≤ 0.2 in bivariety analysis

In the multivariety analysis stastical sigenificant at p-value < 0.05

DISCUSSION

The study revealed magnitude of injury In WKUSTH to be 75(58.6%)%. This is relatively higher when compared to a study conducted in North Gondar zone in 2000 using twenty institutions which revealed a magnitude of 5.4%[22]. The magnitude is lower than a study of total surgical admission (5,907) to the rift valley provincial general hospital of Kenya in 2002 where 3411(57.7%) were trauma cases (56). Similarly, another study at Viet Duc hospital in 2006 had reported a higher magnitude with 17,643 injury cases treated in emergency department, representing 70% of all emergencies [23]. The time of investigation and differences in the level and number of facilities studied could partly explain this difference. The injured cases were predominantly males which are consistent with other similar studies and most of injuries involved people aged 15-49 years. This pattern remained the same for most injury mechanisms and outcomes. This is also an agreement with other similar studies [24]. It is expected that people in this age group tend to live a more active life than other age group. Obviously, this would signify a resultant economic impact and loss in productive years of life

The study revealed that 3.1% of the injuries were intentional and is lower than 23% reported from Tikur Anbessa hospital, Addis Ababa [24] and 8% from Vietnamese hospital . However, another study conducted in Canadian hospitals reported more intentional injuries [25]. The possible explanation for the variation may be the difference in study time and setting. The commonest mechanisms of injury were RTA and falling related followed by cut by sharp instruments. Similarly, studies conducted in Tikur Anbessa, Addis Ababa in North Gondar zone and in rift valley provincial general hospital of Kenya [19] had reported same trend with RTA at

top followed by interpersonal assault and accidental fall. However, another study conducted in St Paul's hospital, Addis Ababa, eldort, Kenya, assaults were the leading cause for injury [19].

Females, as compared to males, were almost twice more likely to have had cut injuries by sharp instruments. Studies from western Kenya and Ghana reported the same observation. Similarly, males were less likely to have had burn which is consistent with other studies[23] This may be attributed to the high exposure women have due to their role in domestic activities such as cooking, baking, and ironing [24]. Moreover, males were more likely to have had RTA. This is partly supported by the study conducted in Ghana were males predominated in all mechanisms of injury[2]

Conclusion

In conclusion, the magnitude of injury in the hospital was considerably high with more unintentional injuries; predominantly involving males, people aged 15-49 years. RTA, cut by sharp tool and falling were the commonest mechanisms. The commonest places of injury were on the road, inside home, and on the job. RTA, falling related injury and cut by sharp tool resulted in more severe injuries.

Recommendations

Appropriate prevention strategies should be designed and implemented against RTA, falling related injury and cut by sharp tools. Strategies like

- Educating the community about traffic laws by including traffic laws on education curriculum,
- High prevalence of injury among males can be potential research areas. Factors associated with RTA also need to be identified in the future. Eventually, it is expected that teaching hospitals should serve as data providers and research centers.

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ANNEXES

SELF ADMINISTERED QUASTIONARY

WOLKITE UNIVERSITY

COLLAGE OF MEDICINE AND HEALTH SCIENCE

DEPARTEMENT OF NURSING

Questioners prepared to assess prevalence and associated factor of trauma case among patient on two selective hospitals, gurage zone hospitals.

Dear respondent

There is study to be conducted in this hospital to assess the prevalence and associated factor of trauma case. Hence there is needed to gather data from patient of this hospital using questionnaire. This questionnaire is only for research purpose. I assure you that confidentiality and anonymity will be fully maintained. To strengthen this you are not expected to write any thing such as name address….that may lead to your identification your participation is purely voluntary and you can withdraw at any time after you get involved in the study without compromising your right. However, we hope that you will participate in this study since your responses are quite important. If you are willing to take part in the study, you are kindly requested to all questions honestly.

Now, do you agree to participate in the study? Yes _____ No _____

S,NO	QUESTIONS	RESPONSE	REMARK
1	Age		
2	Sex	1,male 2,female	

3	Marital status	1,single 2,married 3,divorced 4,windowed	
4	Educational status	1,cannot read 2,read and write only 3,elementary school 4,secondary school 5,degree and above	
5	Occupational status	1,farmer 2,student 3,hose wife 4,goverment employ 5,private employ 6,civil servant 7,daily laborerirs 8,old age retired 9,other	
6	Religion	1,orthodox 2,muslim 3,protestat 4,other	

PART TWO: PREVALENCE OF TRAUMA

7	Why do you come to emergency department?	1,trauma 2, medical illness 3,surgical illness	

8	Do you get trauma	1,yes 2,no	

9	Time or injury	1, day 2, night	
PART THREE; INTENT OF INJURIES			
10	Is the injuries	1,intentional 2,unintentional	
PART FOUR; MECHANISM OF INJURIES			
11	What cause the injuries	1,cut by sharp instrument 2,falling related injuries 3,stab 4,bitten struck by animal 5,fire related burn 6,burn due to boiled water oil 7,road traffic accident 8,poisoning 9,suicide 10,firearm 11,drowning 12,other	
PART FIVE; PLACE OF INJURIES			
12	Were died the injuries occurred	1,around home 2,inside home 3,farming place 4,on the job 5,on the road	

		6,in the bush 7,in the school 8,other place	
PART SIX;ACTIVITY ON THE TIME OF INJURIE			
13	In the activities did you engaged at the time of activities	1,on usual work 2,on household activities 3,on the way of work/back home 4,on the trip to other place 5,on sleep/food/shower 6,walking around 7,other	
PART SEVEN: PART OF THE BODY INVOLVED BY THE TRAUMA			
14	What part of the body was injured	1, only head 2,head and neck 3,thorax and abdomen 4,the back 5,both upper and lower extremities 6,only upper extremities 7,only lower extremities 8,groin and genital 9,the whole body	
PART EIGHT;SEVERITY OF INJURIES			
15	Referral source	1,self-referral	

		2,primary care clinic 3,other	
16	What sever is the injury	1,minor 2,moderate 3,sever	
17	Is the patient admitted	1,yes 2,No	
18	If no what done	1,treated and discharges 2,refered immediately for further management 3,died immediately	
PART NINE;DISPOSITION			
19		1,Treated and discharged 2,admitted 3,died	
PART TEN;WAS THE PATIENT UNDER INFLUENCE OF ALCOHOL AT THE TIME OT TRAUMA			
20		1,yes 2,No	