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DEPARTMENT OF NURSING

Prevalence of Road traffic accident and its associated factor among resident of Wolkite Town, South Ethiopia, 2023G.C

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A Thesis submitted to Wolkite University, Collage of Medicine and Health Science, Department of Nursing for the partial fulfillment of Bachelor of Science Degree in Nursing

August, 2023

Wolkite, Ethiopia

WOLKITE UNIVERSITY

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Acronym and Abbreviation

DALYs Disability adjusted life years

ETB: Ethiopian birr

LDC Less developed country

RSC Road safety campaign

RTF Road traffic fatality

RTI Road traffic injury

UAE United Arab Emirates

UK United Kingdom

UN United Nation

WHO World health organization

SPSS Statical program for social science

Abstract

Background: -, Worldwide, an estimated 1.3 million people die of road traffic accident each year and as many as 50 million get injured. Current and projected trends in motorization indicated that the problem of road traffic accidents was get worse, leading to a global public health crisis. Ethiopia is one of the countries hard hit by Road Traffic Accidents; however, there is limited scientific evidence on magnitude of the problem in certain areas of the nation

Objective of the study : to assess the prevalence of Road traffic accidents and its associated factors among residence of Wolkite Town, south Ethiopia, 2023.

Method and Materials: Community based cross sectional study was done in Wolkite Town with a total sample size of 378 from March 27 to April 4, 2023. The quantitative data was checked, edited, and entered to Statical program for social science software version 21. The study employed chi-square analysis models. The result is presented using descriptive statistics using tables, graphs and charts.

Result: A total of 378 respondents participated in our study with 100% respondent rate. The prevalence of road traffic accident in the town is 56.2%.Among them, 275 (72.8%) were male and the rest 103 (27.2%) were female. Among the participants recruited on data collection, 82(22.1%) of them had previous history of RTA. Concerning the causes of RTA, 162(42.85%) majority of them were caused by over speed followed by 86(22.75%) by poor road condition. The results on interviews showed that the Town has traffic flow and three wheel(bajaj) were most common causes of the accident. It also revealed that the Road and Traffic Office had worked on public education even if it‟s not enough.

Conclusion and Recommendation: The study found out that road traffic accident is big problem of the Town and the Town is experiencing it. The most common cause of road traffic accident is over speeding, poor road condition and three wheel (bajaj) are most commonly involved in the accident. Legalizing three wheel (bajaj), public meeting and improving the road condition are among the recommendations given to various groups.

Keywords: Road traffic accident

1. Introduction

1.1. Background

Road traffic accidents (RTA) can be a defined as an accident that occurred on a way or street open to public traffic that results in one or more persons being killed or injured and at least one moving vehicle was involved[15]. Thus, RTA is collisions between vehicles; between vehicles and pedestrians; between vehicles and animals; or between vehicles and geographical or architectural obstacles.[1]

Road accident is said to be one of the major international public health concern[24]. Every death on our roads is a major tragedy causing enormous emotional pain and grief to family and friends. The burden of road accidents causalities and damage is much higher in developing countries than developed nations. According to both the World Bank and the World Health Organization (WHO) independent studies have reported that, worldwide, there are around 500,000 fatalities and 15 million injuries per annum as a result of road accidents globally. Earlier estimates also suggest that about sixty percent of these deaths and injuries take place in those countries of Africa and Asia which are classified by the World Bank as low or middle income countries [2]

Pedestrians and passengers of commercial vehicles are the most vulnerable in Ethiopia, whereas in high-income countries crashes involve primarily privately owned vehicles with the driver being the main car occupant injured or killed[11]. However, in the United States of America (USA), for instance, 60% of the fatalities account to car drivers, while in Ethiopia, 5% account to drivers. This implies that in one crash the number of people killed or injured in Ethiopia is about 30 times higher than in the USA [3]

In Africa, Ethiopia is second highest, next to the Central African Republic, having 195.1 traffic Accidents per 10,000 vehicles. The prevalence of an extremely alarming number of RTA has created large negative socio-economic costs in actual and opportunity costs. The situation is likely to be even more severe than shown in the statistics due to the possibility of under reporting. Not only are these rates high, with the average vehicle evidently having a more than 10 percent chance of accident involvement each year, but they appear to be also rising faster than2the growth of the vehicle fleet[4] . The same study shows the reasons for this situation

include poor driving standards, ineffective enforcement of driving regulations, poor condition of vehicles, and inadequate road design.

Pedestrian fatalities are high, partly because adequate sidewalks are often absent like many developing countries; the vehicle fleet in Ethiopia generally consists of very old vehicles and without adequate maintenance. Although there is no detailed factual data to substantiate the age of the national vehicle fleet, some information obtained from the Federal Transport Authority indicate, on average vehicles being imported to the country are 20 or more years old and the age of most of the national vehicle fleet is believed to be 30 or more years [5].

The recommended National Road Safety Council has yet to be set up in Road safety improvements can be achieved with in the three components of the road safety system that includes changes in infrastructure design (which includes road and road signs), vehicle safety, and road user behavior (driver, pedestrian, passengers) [6].

Evidences on the Risk factors for RTA reported from various countries in Africa (Kenya, Uganda, Ethiopia, Tanzania, Ghana, South Africa, and Zimbabwe) show that most of road Crashes are largely due to a range of human error, road and vehicles factors that include over speeding , risky overtaking, alcohol and drug abuse, driver negligence, poor driving standards,vehicle overload, poor maintenance of vehicles, bad roads and hilly terrain, negligence of pedestrians; distraction of drivers (e.g. speaking on cell phones)[7].

1.2. Statements of the problem

Road traffic injuries (RTIs) are considered a serious public health problem worldwide. They are a significant public health challenge and predicted to be the 5th leading contributing factor to the global burden of diseases by 2030. Although road deaths and injuries are preventable, they are among the leading causes of premature deaths, hospitalizations, disabilities, and socioeconomic losses. RTAs rank as the 11th leading cause of deaths and account for 2.1% of all deaths globally. Pedestrians, cyclists, two-wheeler riders, and public transport passengers are the most vulnerable road users. According World Health Organization (WHO), RTAs account for 1.25 million deaths each year and as many as 50 million people suffer injuries as a result of RTAs[8].

This latent epidemic has a significant socio-economic cost to countries for two reasons. First, RTAs affect young working-age people (15 - 44 years) more than other groups. And second, the costs of deal with the fallout of RTAs—to individuals and society as a whole—can be as high as 3% of gross domestic product (GDP). Despite existing interventions and progress on reducing morbidity and mortality rates, RTAs remain a major public health issue, even in developed countries[9].

Low-income and middle-income countries continue to pay the heaviest price, accounting for more than 90% of all RTA-related deaths and injuries. Moreover, Africa is the most affected region of the world, where the most vulnerable road users (pedestrians, cyclists and motorcyclists) make up 60% of victims. RTA-related injury incidence is especially high in Africa, at an estimated 92.2 per 100,000 population[7].

RTA-related deaths are predicted to increase by 83% in developing countries and to decrease by 27% in the developed ones [9]. In addition, it is estimated that RTAs was cost billions of rupees globally and nationally. Accordingly, an RTA-related injury is an economic burden falling on the health care budget. More than 93% of road traffic deaths occur in low and middle-income countries. Road traffic injury death rates are highest on the African continent.

Ethiopia is one of the low income countries with a high traffic accident rate and a low level of motorized traffic compared to other parts of the world. In Ethiopia, the situation has been worsened as the number of vehicles has increased due to the increased traffic flow and conflicts

between vehicles and pedestrians. Despite governmental efforts in road developments, road crashes remain one of the critical problems of the road transport sector in Ethiopia. Every year, many lives are lost, and a huge amount of assets is destroyed due to road traffic accidents in this country. It has experienced an annual average of 8,115 road accidents over the past 11 years [9].

In financial terms, Ethiopia, being one of the poorest world countries, loses at least 400 million Ethiopian Birr each year due to road accidents, which was 12 million Birr per year on average 15 years ago and was the third killing factor in this country. Presently, the financial property damage, excluding human deaths and injuries, is estimated at 15 million Ethiopian Birr annually on average[10].

According to the UNECA (2015), the rate of traffic accident deaths in 2007-2008 was 95 per 10,000 motor vehicles, which put the country on the dangerous side of international road safety scenes. In the same year, a police report revealed that 15,086 accidents caused losses of 2,161 lives, and over 82 million Birr, equivalent to 7.3 million USD, was the estimated cost of the assets damaged (1 USD = 52.95 Ethiopian Birr). In addition, by 2005 and 2006, the traffic accidents and fatalities increased by 17% and 10% per year, respectively, yet there was a decreasing trend in this respect. Besides, there were 2.84 road accident fatalities per 100,000 individuals of the population in the same year[11].

Major public health issue because of their scale and the extent of their impact, especially in developing countries. Therefore, understanding road traffic accidents and its associated factor are integral to working out solutions for these problems. Against this background, this research tries to assess information on prevalence of road traffic accidents and its associated factor in Gurage Zone in Southern Ethiopia, particularly in wolkite Town.

1.3. Significance of the study

An accidents represent a failure. That failure could have risen out of human error, environmental conditions, a misuse of machinery, or equipment breakdown. A superficial accident investigation may lead to a quick remedy, but it is important to bring to light the deeper root cause. A thorough investigation may reveal problematic policies, insufficient training, or a flaw in processes and procedures. This study is mainly concerned with the prevalence of RTA and its associated factor in Wolkite Town. Emphasis is given to mapping; identifying and analyzing the RTA risk areas and cause of RTA in the city respectively. Therefore, the study is significant for the following reasons. Even though the study is limited to a single city in the country, the results to be obtained from this research could be helpful in launching initiations in studying the complex problems of urban road transport in general and RTA in particular. The verdicts attained from the study was be helpful to gain valuable data and information about the RTA black spots, cause of RTA in the town, which in turn, could help to develop countermeasures that could reduce the frequency and severity of road traffic accidents. It can be used as one source of information for those institutions concerned with road safety management and helps to improve the quality of decision-making in urban road transport safety planning. The study was be used as a bench mark information to those scholars who want to conduct future detailed studies on RTA, road safety and other related issues.

2. LITERATURE REVIEW

2.1.Prevalence of road traffic accident

Road traffic accident are a global problem affecting all parts of society. Road traffic accident has been increasing dramatically from time to time. Road traffic killed more than 1.35 million people additional 20-50 million injuries [12]Road traffic accidents are the eleventh leading cause of death globally, and the leading cause of death for young people aged 15–29[13]. .

According to WHO report on RTA prevention in 2004, globally, more than 1.25 million injured as a result of road traffic accident each year, while the number injured could be as high as 50 million. Around 85% of all global road deaths, 90% of the disability-adjusted life years lost due to road traffic accident and 96% of all children killed worldwide as a result of road traffic injuries occur. The prevalence of the problem can be compared using its rate in low and middle-income countries and developed country which is 21.5, 19.5, and 10.3 per 100,000 persons, respectively [14]

This high rate occurred in those low and middle income countries, with about 48% of the global registered vehicles contributes 90% of the deaths of RTA[15] . Unfortunately, over 50% of all these deaths occur among those who are aged 15 to 44 years that are economically active segment(young adult in age) of the population magnifying its effect [16] .

Time trends study from Lithuania analyzed road traffic accident incidence and age specific mortality rate (ASMR) between 1998 and 2007 reported the increase in the occurrence of crashes while mortality rates remain unchanged. The overall road traffic injury incidence was 10.7% higher in 2007 (270/100 000) compared to 1998 (244/100 000). While the RTI-related ASMR decreased from 28 to 25 deaths per 100 000 population per year between 1998 and 2007, the road traffic crash rate was 7.7% higher in 2007 when compared with 1998[18].

A Cross-sectional study in Dubai from the period of 2002 to 2008, reported steadily increasing numbers of road traffic injuries from 2203 in the year 2002 to 3043 in the year 2008, representing a 38% increase. The associated mortality showed the same trend with an overall increase rate of 54% between 2002 and 2008. There was a noted drop (-11.4%) in fatalities between 2007 and 2008. During 2008, there were 3433 road traffic injuries and 294 deaths (8.5%

fatality rate)[13]

A Cross sectional Study from 2004–2007 periods in Cameroon reported that total of 935 police reports, including 279 non-injury, 428 injury, and 228 fatal crashes. Among the 1868 injured persons, 768 (41%) were not seriously injured, 726 (39%) seriously injured, and 278 (15%) killed immediately. More men than women were injured (73.8%) and killed (74.9%)[19].

A Cross sectional study conducted on the emergency department of Tikur Anbessa Specialized Teaching Hospital the prevalence of road traffic accident was 36.8%. Being a farmer (AOR = 3.3; 95% CI = 1.06–10.13), conflict with family members (AOR = 7.7; 95% CI = 3.49–8.84), financial problem (AOR = 9.91; 95% CI = 4.79–6.48), psychological problem (AOR = 17.58; 95% CI = 7.70–12.14), and alcohol use (AOR = 2.98; 95% CI = 1.61–5.27) were independently associated with road traffic injury [20]

A cross sectional study conducted on Hawassa University comprehensive specialized hospital reports that the prevalence of road traffic accident was 40.9%[21] .

A Cross sectional Study conducted on road Addis Ababa to Hawassa by Kasu shows accidents on these roads reported high death rate 32.48%, followed by 18.46% serious injuries, 13.48% slight injuries and 35.58% property damages [22]

2.2. Factors associated with road traffic accident

There is marked variation across the world in the way that roads are used and injuries are caused, which have important implications for road safety policy and practice. For example, road traffic injuries in highly-motorized countries mostly involve car drivers, whereas in certain countries of Asia it is motorcycle riders and in many low-income countries it is occupants of multiple passenger vehicles (such as buses) and pedestrians. There is also appreciable variation in the breakdown of these injuries by underlying cause (road infrastructure versus vehicle design versus exposure to risk factors such as speeding or not wearing a seatbelt[23] .

A Cross sectional study in Qatar shows the highest percentage of the RTCs occurred in the age group 25-34 years (31.2%), followed by 35-44 years (22.9%) [20], while above 30yrs drivers are frequently involved in the crash as reported in some literatures but there is completely different finding that shows the age below 15yrs and above 74yrs are frequently involved in the crash. AOR were obtained for age groups at the ends of the range (AOR=1.50) for drivers younger than 15 years, and 2.43 for drivers more than 74 years old)[25] .

Sex of the driver is another important factor which determines the occurrence of the crash as well as its outcome. A cross sectional study conducted in Qatar shows that crashes were more common among male drivers (69.4%), with females accounting for 30.6% of the crashes[26]and also being a female driver is associated with lower risk of accident in another study [27]

A Cross sectional Study conducted in Spain shows driving above and below speed limit has strong association with accident the above speed limit (AOR=6.35) and slow speed (AOR=4.20) also showed a strong association[22] which is also supported by study in Qatar that more than half of the studied drivers with a history of crashes had traffic violations (57.2%) especially in exceeding the speed limit (25.7%) is highly significant(<0.001[28]and also excessive speed is also the main cause of fatal crash (20%) on study in Cameron[17]. A large increase in the risk of

accident was observed for driving under the influence of alcohol, especially when a positive test result was recorded (AOR=8.71). Driving without a valid license, Excess of passengers or load were associated with slight increases in the risk of accident[26].

A Cross sectional Study conducted in Qatar reported drivers with more driving experience (>5 years) were more frequently involved in RTCs (38.2%), followed by 1-3 years (30.6%) and 3-5 years (21.4%) of driving experience [16] but a protective effect was reported on drivers who have number of years driving license and also Helmet use and female sex were associated with a lower risk of collision. [22].RTCs were more common among drivers who were owners of vehicles (66.7). A significant difference was observed between drivers who did and did not have crashes in terms of ownership of vehicle (<0.001) and type of vehicle (p=0.02). The highest frequency of crashes occurred in drivers with university degree (32.7%) [25] .

According to cross sectional study conducted in Dubai age distribution of RTIs shows that the majority of injuries are in the middle-age groups, between 18 and 35 years, Females were involved in around 20% of total injuries. The fatality rate per 1000 injuries is higher in the middle age group [10]

A Cross sectional study conducted in India also reported most of the victims were in the 3rd decade of life (28.5%, n =98). Maximum number of males (n =94, 30.6%) were aged between 20 and 29 years. While the male fatality pattern varied during the different age groups, the distribution of female cases was fairly uniform throughout each decade of life [20]. The study from Brazil also reported that most victims were male (94.3), aged between 20 and 39 years (73.8%) [16].

A Cross sectional Study from Cameroon reported crashes involving vehicles travelling in opposite directions, single vehicles running off the road Crashes with still or maneuvering vehicles and at intersections were responsible for a very small proportion of fatalities (3.7% of the 374 fatalities). The main causes of fatal crashes were hazardous overtaking (23%) and mechanical failures (28%), two thirds of the latter being Tyre problems. Other important causes were loss of control and other human factors[23]

A Cross sectional study conducted in Ghana the prevalence of road traffic accident was 64.0%. Motorcyclists (74.0%) were reported to have been involved in crashes in the past one year prior to the study. Motorcyclists attributed the last accident to excessive speeding (31.5%) and bad roads (23.3%), this accident as a result of colliding with another motorcycle (50.7%), and slippery surfaces (24.7%). The majority (63.0%) of the respondents had an accident once. The consumption of alcohol was associated with the occurrence of an accident as 34.2% occurred among cyclists who drank alcohol, compared with 29.8% who did not ($p<0.05$)[25]

A population-based cross-sectional study conducted in Ethiopia shows About 3% (2.7%, 95% CI: 1.8-3.5) of respondents were involved in a road traffic crash as a passenger, driver, or pedestrian during the prior 12 months. This study found that the risk of being involved in road traffic injuries in those who have completed primary education is 1.4 times higher than in those that have no formal education (95% CI: 1.002-1.992). Those whose household income level is above 30,000 Ethiopian birr (ETB) had the highest involvement in road traffic injuries (4.2%). Those whose annual household income is above 30,000 ETB have an about 2 times increased risk of being involved in road traffic injuries than those whose annual income is below 12,000 ETB (95% CI between 1.313-3.230). [29].

2.3 Conceptual Framework

The conceptual model used in this study was focus on socio-demographic characteristics for road traffic accident, behavioral factor, risky driving behavior, road factor, and vehicle factors.

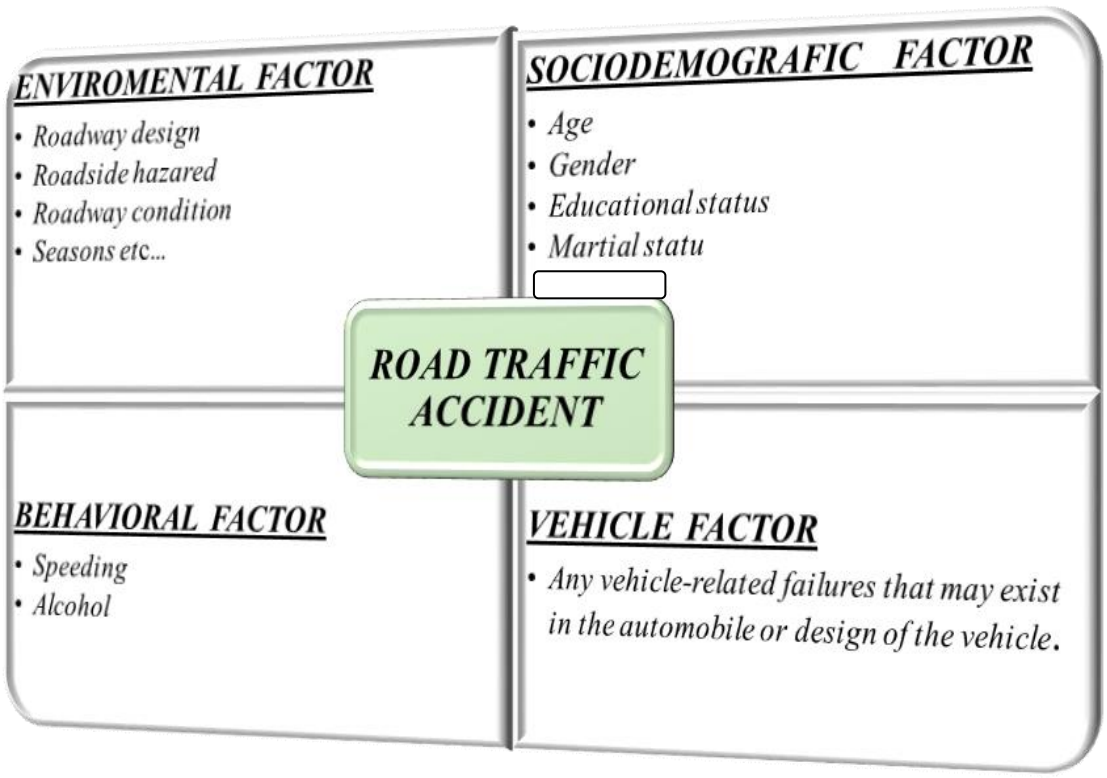

Figure 1 conceptual framework

3. Objective

3.1 General objective

- To assess the prevalence of RTAs and its associated factors among residence of Wolkite Town, south Ethiopia, 2023G.C

3.2 Specific objective

- To determine the prevalence of road traffic accident among residence of Wolkite Town, south Ethiopia, 2023G.C
- To identify factors associated with RTA among residence of Wolkite Town, south Ethiopia, 2023G.C

4. Method and Materials

4.1. Study area and period

The study was conducted in Wolkite Town , southern region ,south west Ethiopia Wolkite town is located in South Nations and Nationalities Peoples Regional State, Gurage zone, Wolkite Woreda, at a distance of 158 km from Addis Ababa, Its astronomical location is 07010' 08'' North Latitude and 370 37'50'' East Longitude. Wolkite town was founded in 1937. Wolkite is one of the reform towns in the region and has a town administration, municipality, three sub-cities and five kebelles. The town has a structural plan. This town has a population of 28,866, including 11,252 males and 11,701 females in 2007 population census .projection in 2022 estimated total population 77,514 including 38,842 Male and Female 38,672 . The study was conducted from January -June 2015E.C

4.2 Study design

A cross-sectional study design was conducted

4.3 Population

4.3.1 Source of population

All People resides in Wolkite town

4.3.2 Study population

All selected adult people resides in Wolkite town

4.3.3 Inclusion criteria

All adult people living in the study area for six months

4.3.4 Exclusion criteria

The exclusion criteria included having hearing and speaking problems, being severely ill, and having psychiatric problems

4.6 Sample size determination and sampling procedure

4.6.1 Sample size determination

Sample required for this study was determined by using single population proportion formula to obtain the sample size needed to estimate the prevalence of RTA in the population of wolkite town. It was determined by the assumptions of 95 % confidence level, 5 % margin of error, and taking the prevalence of injury 56 % [Debrework Tesgera Bashah1 2015].

$n= (Z \alpha/2)2p (1-p)$

Where: n= minimum sample size required for the study

Z= standard normal distribution (Z=1.96), CI of 95% = 0.05

P= prevalence of RTA pattern of injury and associated factors is 56% which was studied in amhara regional state (Debrework Tesgera Bashah1 2015); Hence; p=56 (0.56) was used
d=Absolute precision or tolerable margin of error= 5% (0.05)

$(1.96)2\times0.56(1-0.56)/(0.05)2 =$ **378**

An estimated total population of Wolkite Town **77514**

4.7 Sampling technique

The sampling technique for this research uses simple random sampling technique was taken from adult people resident in Wolkite town was survey to investigate the prevalence of road traffic accident and factors associated with road traffic accident among residence in Wolkite Town. Participants was select randomly from each sub city of Wolkite Town.

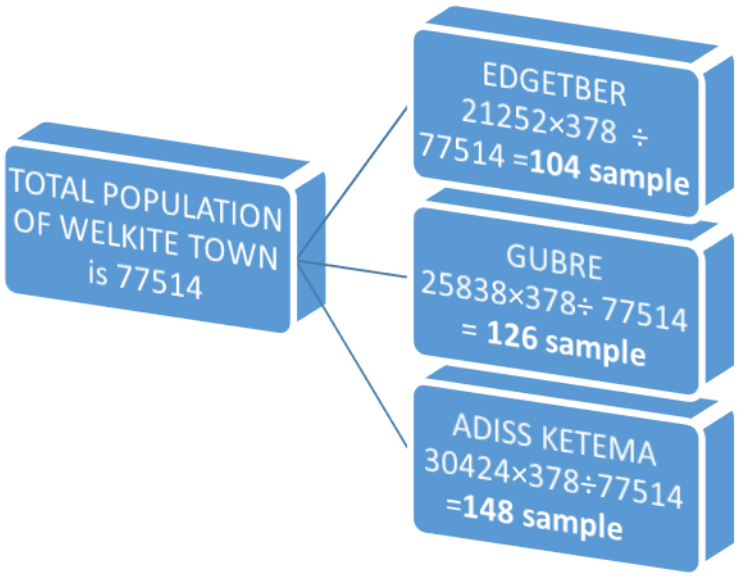

Figure 2 Total population of Wolkite Town

4.8 Variable

4.8.1 Dependent variable

Road traffic accident

4.8.2 Independent variable

- Socio-demographic factors: Age, Sex, Address, Marital Status, Occupational factor, monthly income
- Behavioral factors : Speeding ,Alcohol drinker, Smoking, Khat, Other Drug Abuse
- Environmental factor: Road factor ,season ,
- Vehicle factor:Vehicle type

4.9 Operational definitions

Road traffic accident: In this study is a collision between vehicles; between vehicles and pedestrians; between vehicles and animals; or between vehicles

Passengers: in this study Occupants of vehicles, other than the person in control, including extra seat/pillion passengers.

Pedestrians: in this study People walking or riding or pushing bicycles on the street or footway.

Road: In this study every public road system: state, regional or local road, or city Street.

Road users: In this study Pedestrians, animals and vehicle users which include all occupants (i.e. driver or rider and passengers).

Vehicle: In this study A machine that is used to carry people or goods from one place to another, it could be bicycle, motor cycle or three and above wheeled machine.

Passenger : In this study is any occupant of a transport vehicle other than the driver.

Driver: In this study a person who drive a vehicle a wheel or other part in a mechanism that receives power .

4.10 Data collection instrument and technique

A structured questionnaire was used to collect information's related to socio demographic characters, road related factors, vehicle related factors adopted from various studies [9,11,12,20] and modified to our context. The questionnaire was translated to local language Amharic version and retranslated back to English by a second translator to check for consistency. Data was collected with the data collecter wolkite Town. Each questionnaire was check for completeness and consistency immediately

4.11 Data quality assurance.

The questionnaire was pretested on 10% sample of population one week before the actual data collection and was adjust if needed. Pretest of the questionnaire was carried out among 45 participant in Wolkite Town .During the pretest, the questions which are frequently asked was documented for further consideration. Attention was given to check all questionnaires for completeness and accuracy. Data was be checked again manually for completeness and internal consistency missing data or incomplete data was be excluded to assure quality control. Data was check and clean for completeness and consistency at the same time incomplete records was discard. Data cleaning and editing was be done by using SPSS version 21.Both the interviewers was planned to assess for clarity, understandability and completeness of questions. After the result of the pretest, some correction and changes was be done made as necessary. After data collection process, the data was check for completeness and any incomplete or misfiled questionnaires was sent back to the respective data collector for correction

4.12 Data processing and analysis

Data was entered, clean and analyze using SPSS version 21. First descriptive analysis was carried out to explore the socio demographic characteristics related to the people, characteristics related to direct or in direct cause of the accident occurrence of RTA. Chi-square was used to assess the association between the dependent and independent variables with 95% confidence interval (CI) and P values , $P< 0.05$ was considered statistically significant

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4.13 Ethical consideration

Permission letter was obtained from Wolkite University, college of health science and medicine. At the time of data collection, a verbal consent was asked from the participant was give the right to do so. Confidentiality and privacy of responses was be ensured (the names of respondents was not be included and ensuring to participants that their identification was not be public. also clearly putting the objective of this study to respondents may help to keep the confidentiality of the respondents) throughout the research process.

5 RESULTS

5.1. Socio Demographic Characteristics of the Respondents

A total of 378 respondents participated in our study with 100% respondent rate. Among them, 275 (72.8%) were male and the rest 103 (27.2%) were female. The age of the respondents range from 18 to 60 and the mean and standard deviation of their age were 31.66 and 10.12 respectively. Majority of the respondents, 97 out of 378 (25.7%) attended only primary school, 154(40.8%) up to secondary school, 84(22.2%) above grade 12 and small amount of them, 43(11.3%) had no formal education. 168(44.3%) of the respondents were government employee whereas 86(22.6%) 54(14.4%), 46(12.4%), 14(3.7%), 10(2.6%) were merchants, students, other(driver,daily labor worker), house wife, and farmer respectively

On the basis of the Town‟s experience of RTA, 82 out of the 378 respondents (22.1%) responded that Wolkite Town is a town experiencing RTA and the rest 296(78.9%) didn‟t. Regarding the place of crossing roads, 196(51.8%) of the respondents cross road at any point, 91(24.6%) cross at junction and 81(21.4%) of them cross at mid-block. 164(54.7%) of the respondents thought that lack of traffic signs and behavior of pedestrian can be cause of RTA

Table 1: Socio demographic characteristics of the respondents, Wolkite Town, 2023

Variable		**Frequency**	**Percent**
Age	18-30	59	15.5
	31-45	199	52.4
	46-59	102	26.9
	>60	23	6.08
Sex	Male	275	72.8
	Female	103	27.2
	Total	378	100
Occupation	Government employee	168	44.3
	Merchant	86	22.6
	Farmer	10	2.6
	House wife	14	3.7
	Student	54	14.4
	other	46	12.4
Educational level	No formal education	43	11.3
	Only primary school	97	25.7
	Up to secondary school	154	40.8
	Above grade 12	84	22.2
	Total	378	100
income of respondent	<1000	130	34.4
	1000-6000	189	50.0
	>6000	44	11.6
	not known	15	4.0
	Total	378	100.0

5.2. Causes of RTA in the Town

Concerning the causes of RTA, 162(42.8%) majority of them were caused by over speed, 86(22.7%) by poor road condition, 50(13.6%) by number of vehicles, 33(8.8%) by lack of drivers experience, 26(6.8%) by not giving priority to pedestrian and 21(5.6%) by driving while getting drunk.

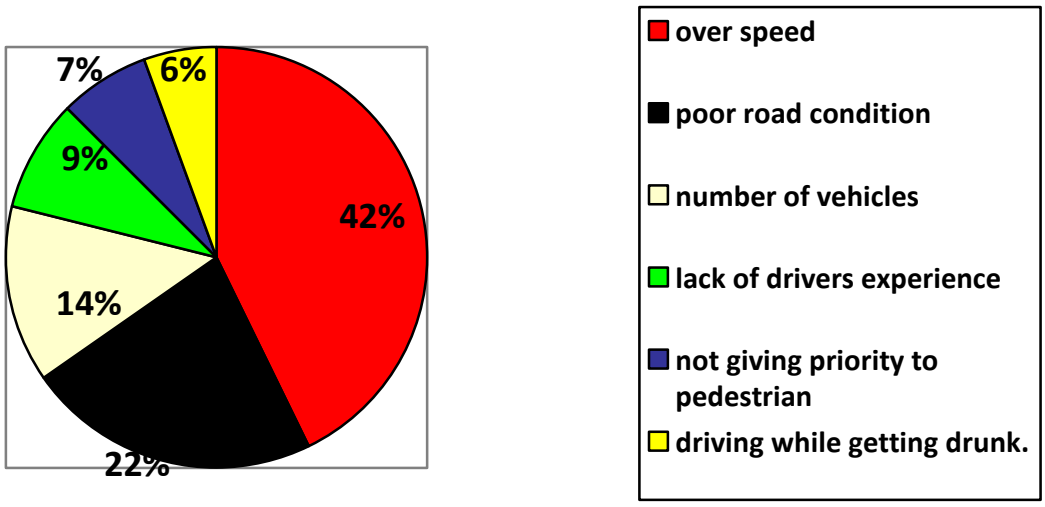

Figure 3 Graph showing cause of RTA in the town

Regarding the difficulty of crossing the main road of the Town, 206(54.4%) responded that it‟s very difficult to cross it, 95(24.2%) said difficult, 49(12.9%) less difficult and 38(10.5%) replied it was easy. Concerning the sources of knowledge, 177(46.8%) of them got from media, 113(29.9%) from schools, 54(14.3%) from themselves, 23(6.08%) from traffic polices and the rest 11(2.9) got from their parents.

On the basis of commitment of traffic polices to their duties, 160(42.3%) of the respondents disagreed, 115(30.5%) agreed, 50(13.5%) said indifferent, 28(7.4%) strongly disagreed and small amount of the respondents 25(6.3%) strongly agreed. Regarding the use of roads, 240 (68.9%) of them used to travel facing to oncoming vehicle, 75 (19.8%) of them used to travel while the oncoming vehicle comes from their back and the rest 63(16.7%) used to travel on both ways while they are traveling on the main road.

Table 2: Respondent’ s perception regarding the level of RTA in Wolkite town, 2015 e.c

Respondents Perception	Frequency	Per cent
Big problem	207	54.8
Moderate problem	119	31.5
Not a problem	52	13.7
Total	378	100.0

Among the participants, 214(56.6%) of them perceives Traffic signs, signals and road marks while they are moving on the streets and crossing the road, while the rest 164(43.4%) don“t.

5.3. Level and prevalence of RTA in the Town

Among the participants recruited on data collection, 296(78.9%) of them had no previous history of RTA, while the rest 82(22.1%) of them had previous history of RTA Concerning the mode of transportation of the participants, 214(56.6%) of them mostly uses bajaj as a mode of transportation, while 104(27.5%) of them were pedestrians, 40(10.7%) use „Moter cycle“ and 20(5.2%)private car.

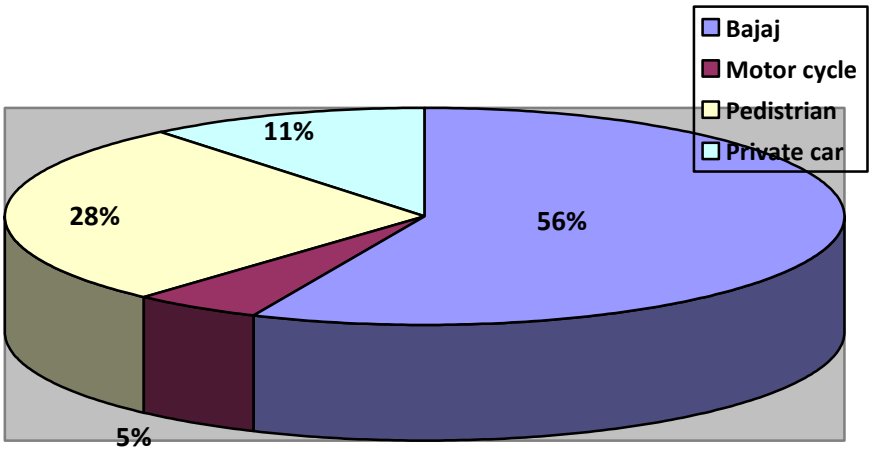

Figure 4 Graph showing the mode of transportation in Wolkite town, 2023

On the basis of drivers giving priority to pedestrians, 155(41.0%) of them believed as drivers poorly gives priority to pedestrians as required by law, while 110(29.1%) believed that it was very poor and the rest believed that it was good (60(15.9%)), very good (30(7.9%)) and excellent

(23(6.08%)). In case of punishment given to drivers who fail to maintain traffic rules and regulations, 204(54.0%) of them believed that drivers who failed to maintain traffic rules and regulations in the presence of traffic police sometimes get penalized according to their law effectively, 98(25.9%) of them believed that they always get penalized while the rest 76(20.1%) believed that they never got penalized On the behalf of education by concerned officials about road safety rules, 302(79.9) of them had never got education about by concerned officials while the rest 76(30.1%) had got the education.

Regarding the solutions sought by the respondents for the problem, 168(44.4%) of them believed that the solution for the existing RTA is Creating awareness on the society, limiting and controlling the speeds vehicles(90(23.8%)),50(13.2%) of them believed that it is by repairing the road and increasing the road capacity, while the rest puts making rules and regulation(23(6.1%)), punishing those who disobey the rules and regulations (19(5.0%), reducing corruption (10(2.6%)), of giving priority for pedestrians (8(2.3%)), planting and assigning traffic signs in the streets(5(1.3%)),avoiding alcohol while driving(3(0.8%)), qualifying the drivers well and restricting those who drive without licenses(2(0.5%)).

Results from chi-square showed that age and RTA had positive association at $p< 0.05$ (0.01) taking 95% confidence interval.in wolkite town, 2015 e.c

	Value	**Df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	67.685[a]	41	.006
Likelihood Ratio	76.362	41	.001
N of Valid Cases	378		

Table 3 Chi square analyses of factors associated with road traffic accident among Wolkite Town residences (n=378)

Variables		**Road traffic accident**		**Df**	**Asym p. Sig. (2-sided)(p-value)**	**remark**
		YES of (Ef)	**NO of (Ef)**			
Sex	Male	204(198.6)	71(76.4)	3	0.165	Its is not significant at p <0.05
	Female	69(74.4)	34(28.6)			
Age	18-30	20(42.6)	39(16.4)	2	0.001	Its significant at p< 0.05
	31-45	188(143.7)	11(55.3)			
	46-60	55(86.7)	47(33.3)			
	>60	15(26.4)	8(15.2)			
Educational level	No formal education Only	18 (18.1)	7 (6.9)	3	0.348	Its is not significant at p <0.05
	primary school	23 (26.7)	14 (10.3)			
	Up to secondary school	133 (135.1)	54 (51.9)			
	Above grade 12	99 (93.2)	30 (35.8)			
Occupation	Governme nt employee	122 (121.3)	46 (46.7)		0.004	Its is
	Merchant	63 (62.1)	23 (23.9)			
	Farmer	6	4			

		(7.2)	(2.8)	5		significant at p <0.05
	House wife	10 (10.1)	4 (3.9)			
	Student	38 (39.0)	16 (15.0)			
	other	34 (33.2)	12 (12.8)			
income of respondent	<1000	95 (93.9)	35 (36.1)	3	0.108	Its is not significant at p <0.05
	1000-6000	133 (136.5)	56 (52.5)			
	>6000	37 (31.8)	7 (12.2)			
	not known	8 (10.8)	7 (4.2)			

DISCUSSION

This study was conducted with the aim of assessment of prevalence of RTA in Wolkite Town and its associated factors. This study has found out that, RTA is big problem of the Town, 207(54.8%) of the respondents responded as its big problem. This number is slightly higher than a study done in Bahir Dar (51%) [26]. this may be due to poor road condition of Wolkite Town when compared to Bahir Dar.

In this study prevalence of road traffic accident found to be 56.2% the prevalence of road accident lower than reported in Ghana[25], but the prevalence is higher than study reported in Hawassa University comprehensive specialized hospital [15], Tikur Anbessa Specialized Teaching Hospital[23]

This study has found that poor road condition is the the second most common cause of RTA (33.4%), but according to research done in Addis Ababa; it was found that Failure to give way for pedestrians is most common cause of RTA (53.8%) [25]. according to research done in Bahir Dar, the most common cause of RTA was found to be driver‟s error [26]. This is probably for the reason that failure to give priority to pedestrians was high in Bahir Dar (10.7%).

This study found that the risk of being involved in road traffic injuries in those who have completed primary education is 1.1 times higher than in those that have no formal education (95% CI: .530-1.779). according to research done in A population-based cross-sectional study conducted in Ethiopia found that the risk of being involved in road traffic injuries in those who have completed primary education is 1.4 times higher than in those that have no formal education (95% CI: 1.002-1.992)

Regarding perception of traffic signs, in this study, only 32 (36%) of all pedestrians indicated, as they perfectly understood traffic signs, but in our study it was 71.1% and this may be due to good education given by traffic polices and concerned officials.

According to this study, 182(48.1%) of the respondents believed as drivers poorly gives priority to pedestrians as required by law, this number is comparable with study done in Addis Ababa which showed 41(41 percent) of drivers do not give priority to pedestrians [21]. This is probably due to negligence of the rules and regulation of drivers. The study also showed that 101(26.7%)respondents agreed that traffic polices are committed to their job and when this is compared to the above study done in Addis Ababa, it was found to be higher (20%) and this may be due to good coordination of the traffic polices with themselves and the community.

CONCLUSION

The prevalence of RTA was found to be high. The result from chi square analysis showed that there is positive association between age and prevalence of RTA. The study also revealed that: RTA is big problem of the Town and the Town is experiencing it.

- ✓ The most common mode of transportation is three wheel (bajaj) .
- ✓ Majority of the participants perceive traffic signs.
- ✓ The most common cause of RTA is over speed and three wheel (bajaj) are most commonly involved in the accident.
- ✓ It‟s very difficult to cross the main road

RECOMMENDATION

- ✓ public meeting and improving the road condition
- ✓ Address coverage of education for the whole community Work together with government
- ✓ Give priority for road construction rather than other infrastructure.
- ✓ The traffic police should take their responsibility
- ✓ Educating the community in creating awareness on RTA
- ✓ Penalizing drivers who go beyond the rules and regulations of road traffic

Strength and limitaton

Strength

- ➢ Data was collacted from primary sources
- ➢ Data collaction methiod was employed 100% response rate
- ➢ This study was community based quantitative cross sectional study only

Limitation

- ➢ There was no enough literature done on prevalence of road traffic accident and its associated factor in our region or country to compare our finding

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Annex 1- consent form

Code number: _____
Date: _____

Information sheet and consent form of study participant on the study conducted on Prevalence of Road traffic accident and its associated factor among resident of Wolkite town Gurage zone, southwest Ethiopia

Hello! I am .....; I am a 4th year Nursing student and the principal investigator of this study. The purpose of this study is to assess the Prevalence of road traffic accident and to determine its associated factor .the findings of this study will be helpful to gain valuable data and information about the RTA black spots, trend, cause and impact of RTA in the town, which in turn, could help to develop countermeasures that could reduce the frequency and severity of road traffic accidents. If you are willing to participate in this study, you need to understand and sign the agreement form and then you will be asked to give your response by the data collector.

Throughout the process of data collection you have a full right to withdraw yourself at any time or you may reserve to response some parts of the questionnaire

All the responses given by the participants and results obtained will be kept confidential using coding system whereby no one will have access to your response.

If you agree to be involved in this study please sign below.

Signature of participant: _____

Name and signature of supervisor _____ Date _____

Name and signature of data collector_____ Date_____

Annex 2- Questionnaire

A questionnaire prepared to collect information on Prevalence of Road traffic accident and its associated factor among resident of Wolkite town Gurage zone, southwest Ethiopia 2015
Dear respondent first of all I would like to thank for your comparativeness interim of !accepting to participate by devoting your precious time, your valuable information will help me as to successful computation of my study, therefore, please respond it honestly and trustily.

PART I - Socio demographic data

No	Questions	Code		Skip
Q 1	How old are you?			
Q 2	What is your current marital status?	Single	1	
		Married	2	
		Divorced	3	
		Widowed	4	
Q 3	Which ethnic group you belong to?	Gurage	1	
		Amhara	2	
		Oromo	3	
		Tigre	4	
		Others_____	5	
Q 4	What is your religious practice?	Orthodox	1	
		Muslim	2	
		Protestant	3	
		Other_____	4	
Q 5	What is the educational level you attended?	No formal education	1	
		Grade 1-6	2	
		Grade 7-12	3	
		Diploma and above	4	
Q 6	What is your occupation?	Gov’nt employee	1	
		Merchant	2	
		Farmer	3	
		Housewife	4	
		Student	5	

		Other_____	6	
Q 7	What is your average monthly income (in ETB)?	----------	1	
Q 8	How long have you been in wolkite town?	< 1 year	1	
		1-2 years	2	
		3-5 years	3	
		6-and above	4	

PART II pedistrean related questioner

1	Do you think that wolkite is a town which experiences high level traffic accidents?	Yes	1	
		No	2	
		No answer	3	
2	. Do you believe that road traffic accident is due to the number of cars moving on the road?	Yes	1	
		No	2	
		No answer	3	
3	Have you given priorities to vehicles as required by law?	Always	1	
		Sometime	2	
		Never	3	
4	Where do you usually cross the main roads?	At traffic light	1	
		At junction	2	
		At mid-block pedestrian crossing away from junction	3	
		At any point	4	
5	. Crossing the main roads in the city is:	Difficult	1	
		Easy	2	
6	. Do you think that the infrastructure (road condition) of the city is the cause of road accidents?	Yes	1	
		No	2	
		No answer	3	
7	Do you think that the road traffic management and licensing system is the cause of road accident?	Yes	1	
		No	2	
		No answer	3	
8	Out of the following road traffic accident causes, please choose three and rank them 1st, 2nd, 3rd	Over speed	1	
		Driving while drinking	2	
		Not giving priority to pedestrian	3	
		Not moving at right distance	4	
		incompetency of the driver	5	
9	Do you think that the lack of traffic sign and	Yes	1	

	behavior of pedestrians can be potential cause of road accident?	No	2	
		No answer	3	
10	. Have you get a chance of road accident awareness-lessons from Wolkite traffic bureau?	Yes	1	
		No	2	
		No answer	3	
11	How do you rate the traffic police commitment to their duties?	strongly agree	1	
		Agree	2	
		indifferent	3	
		disagree	4	
		strongly disagree	5	
12	Who is your source of knowledge and	My self	1	
		Parents	2	
		Schools	3	
		Traffic police	4	
		Media	5	
		Other source	6	
13	How frequent do you leave sidewalks/walk along roads and walk on the vehicles road?	Always	1	
		Sometimes	2	
		Never do this	3	
14	While walking along roads, do you walk with your	Face to the oncoming vehicles	1	
		Back to the oncoming vehicles	2	
15	Do you correctly perceive traffic sign, signals and road marks when you moving on the street and crossing the road?	Yes	1	
		No	2	
		No answer	3	
16	. In your opinion, drivers in Wolkite town give priorities to pedestrians as required by law.	Strongly agree	1	
		Agree	2	
		Indiffrent	3	
		Disagree	4	
		Strongly disagree	5	