

ADDIS ABABA UNIVERSITY  
COLLEGE OF HEALTH SCIENCE  
DEPARTMENT OF EMERGENCY MEDICINE AND CRITICAL CARE  
NURSING.



KNOWLEDGE, ATTITUDE, PRACTICE, AND ASSOCIATED  
FACTORS OF FIRST AID SERVICES RELATED TO MOTORCYCLE  
ACCIDENTS AMONG MOTORCYCLE DRIVERS IN DILLA TOWN,  
SOUTHERN ETHIOPIA, 2023

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## **List of Acronyms and Abbreviations**

AOR: Adjusted odds ratio

COR: Crude odds ratio

CI- Confidence interval

CMR- Commercial motorcycle riders

FA-First aid

MC- Motorcycle

MCA- Motorcycle Accident

MCI- Motorcycle injury

OR- Odds ratio

PM- Professional motorcyclist

RC- Road crash

RTA- Road Traffic Accident

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## **Abstract**

**Background:** First aid is care provided initially to a sick or injured person using the resources available until professional medical assistance is available. As a result, the victim's suffering can be reduced until help arrives or until they can be transported to a health facility. It includes carefully chosen words of encouragement and expressions of a willingness to help. Motorcycles are used in developing countries to carry out practical tasks related to mobility, transportation, sport, and economic activity. My understanding is that there is little information about first aid knowledge, attitudes, and practices among motorcycle drivers in my study.

**Objective:** This study aims to assess knowledge, attitude, practice and associated factors of first aid service related to motorcycle accidents among motorcycle drivers in Dilla town, southern Ethiopia, in 2023.

**Methods:** The research was done in four randomly selected kebele in Dilla town using a community-based cross-sectional study design. The data gathered was entered into Epidata 4.6 and exported to SPSS 26 for coding, cleaning, and further analysis. Binary logistic regression was conducted to assess the association between dependent and independent variables. In bivariate analysis, variables with a p-value less than 0.25 are taken into multivariate analysis, and variables with a p-value less than 0.05 are declared statistically significant and reported by using an adjusted odd ratio with a 95% confidence interval. Results are presented through narrative texts, tables, and figures.

**Results:** 272 respondents have participated in the study; the mean age of participants was 26.21 (SD 4.952). Respondents who scored equal and above the mean of 149 (54.8%) had good knowledge. Respondents who attended college or university were four times more knowledgeable than those who were not educated (AOR = 3.937; 95% CI: 1.175-13.194). Age is significantly associated with first aid practice. Study participants categorized in the age group  $\geq 33$  were six times more likely to practice first aid than those in the age group under 17–24 (AOR=5.516;95%CI:1.756–17.325).

**Conclusion and Recommendation:** The study found that almost half of the MC drivers have adequate knowledge of first aid. The majority of respondents believed that first aid was important, but their first aid practice was inadequate. First-aid practice was found to have a statistically

significant relationship with age. First aid training should be given to all MC drivers to improve their knowledge of first aid. Although there is no licensure to drive and age is not restricted, all stakeholders promptly apply formally for licensure to drive a motorcycle as well as implement laws and precautions.

Keywords: First aid, motorcycle accidents, knowledge, attitude, practice

# **1. Introduction**

## **1.1 Background**

First aid is care provided initially to a sick or injured person using the resources available until professional medical assistance is available. As a result, the victim's suffering can be reduced until help arrives or until they can be transported to a medical facility. It includes carefully chosen words of encouragement and expressions of a willingness to help. First aid is a vital initial step for providing effective action that helps reduce serious injuries and improve the chances of survival. Taking immediate action and applying the appropriate techniques makes a difference when saving lives(1).

People from all walks of life use motorcycles for a variety of purposes. Motorcycles serve two purposes: transportation and leisure. In developing nations, motorcycles are employed for a variety of practical purposes, including mobility, transportation, recreation, and economic activities. Because they are small, fuel-efficient, and simple to navigate in crowded situations, motorcycles are becoming a more popular form of transportation(2). Motorcycle use is on the rise because of its accessibility and quick movement. Motorcycles are being used for income-generating activities. Many motorcycle riders disobey speed limits, lack the appropriate driving competencies, and overload the motorcycle with more passengers than recommended. If effective prevention measures are not taken, the number of motorcycle accidents and accompanying injuries and deaths is going to increase as motorcycles become more widely available today(3).

Road accidents are certainly the first example people think of when highlighting the benefits of first aid, and the need for those benefits is increasing all over the world(4). Road traffic accident (RTA) deaths are projected to increase from 1.3 million in 2004 to 2.4 million in 2030, primarily due to increased motorcycle ownership. So, it is expected to increase from the ninth largest cause of death worldwide in 2004 to the fifth in 2030. Over 90% of the world's fatalities on the roads occur in low- and middle-income countries, which have only 48% of the world's registered vehicles. This indicates that those countries' road traffic death rates were twice as high as those of high-income countries(5). For example, a main contributor to road crashes in Vietnam is the rapid increase in the number of vehicles, particularly motorcycles, which increase by 10% every year.

Nearly half of the motorcycle riders are not licensed, and three quarters don't comply with traffic laws. Also, the development of roads and other transport infrastructure has not been able to keep pace with rapid economic growth(6). In a study conducted in West Africa's Guinea on motorcycle (MC) accidents and their outcomes, there were 14,962 RTA victims admitted to hospitals, of whom motorcycle accidents accounted for 58.3%(7).

Traumatic injuries are one of the leading causes of morbidity and mortality in Ethiopia. The bulk of serious injuries are caused by RTA, and they are now a significant public health burden. The health sector is aware that injuries can happen for a variety of reasons, demanding a multi-sectoral approach to effective prevention and prompt response when they do, including initiatives to improve the quality and accessibility of emergency medical services(8). In Ethiopia, RTA injuries are normally transported to the nearest health center for emergency medical care without any professional care at the scene of the accident. Accident victims are transported by the vehicle involved in the accident, a volunteer driver, or an ambulance if one is nearby.

Worldwide, studies about the knowledge, attitude, practice, and associated factors of motorcycle drivers' first aid are limited. As far as the researcher's knowledge is concerned, in Ethiopia, the level of knowledge, attitude, and practice of motorcycle drivers towards providing motorcycle accident first aid is not known. Therefore, this study aims to explore the first aid knowledge, attitude, and practice of motorcycle drivers in Dilla town, southern Ethiopia.

## **1.2. statement of the problem**

From 20 to 50 million individuals sustain non-fatal injuries, and over 1.2 million people die on the world's roads every year. The road traffic injury epidemic is still increasing throughout the majority of the world(9). A small number of studies on traffic accidents in Ethiopia indicate the severity of the issue and encourage the government to pay close attention to motorcycle safety(10).

The dangers of driving a motorcycle are great because there are no full-body safety methods or structures to safeguard drivers and passengers. The primary victims of motorcycle accidents are motorcycle drivers, passengers, and pedestrians. Motorcycle injuries are serious but underreported

emerging public health issues that significantly contribute to overall road traffic injuries, which are the leading causes of disability and death in developing countries(11). Motorcycle accidents are the leading causes of disability and death among the victims(12). The rise in the number of motorcycles is a significant factor in the rising number of fatalities and injuries from road accidents in developing countries(13)(14). According to a study conducted in Brazil, motorcycle accidents accounted for 20.8% of hospitalized cases(15).

In motorcycle accident injuries seen at Kakamega Provincial Hospital in Kenya, tibial fibular fractures predominated at 29.3%, femur fractures accounted for 19.8%, and other injuries included chest (10.3%), soft tissue injuries (20.7%), head injuries (12.1%), foot injuries (3.4%), ankle injuries, hip dislocations, and forearm bone fractures (1.7% each). The fatal cases, which accounted for 4.3%, were all uniformly presented with head injury(16). Lower limb injuries were the most prevalent form of injury (238, or 55.5%) among 429 motorcycle accident victims evaluated in Nigeria, according to a study on lower limb injuries caused by motorcycle accidents(17).

In studies conducted in Ethiopia; the majority of injuries recorded were caused by motorcycle accidents. For example, the study employed in Prevalence and Associated Factors of Road Traffic Accidents among Motorcycle Drivers in Addis Ababa City, Among the respondents who had experienced RTA, the reported consequences of the accident were 44 (18.0%) people with serious injuries and 72 (29.5%) people with minor injuries. In terms of the injured group, 99 (70.7%) motorcycle drivers, 38 (27.1%) pedestrians, and 3 (2.1%) passengers were injured during the accident, respectively(18).

Motorcycle (MC) accidents make up 65.1% of all road traffic accidents, according to a study on the magnitude of RTA and associated factors among commercial motorcycle drivers that was done in the Wolayita zone kindo koyisha woreda(19).

Another study conducted in the south Omo zone to assess MC crashes found that MC crashes were on the rise. A total of 206 motorcycle accidents occurred during the study period, of which 36 (17.5%) resulted in fatalities, 88 (42.7%) in serious injuries, 52 (25.2%) in mild injuries, and 30 (14.6%) in property damage(20). And also, according to a study on the prevalence and associated

factors of motorcycle injuries (MCI) in public hospitals in southern Ethiopia, out of the total 423 road traffic injuries, 213 (or 50.4%) were motorcycle accidents(21).

Due to the need for professional or long-term care, medical costs, and funeral costs, motorcycle accident injuries can also lead to financial losses for individuals, families, and communities(22). In another way, MC accident disability and death to victims are alarming worldwide. It is a neglected type of RTA(23). In Ethiopia, too, the consequence of motorcycle-caused disability was shocking and needed further strategic implementation(21).

This study focuses on motorcycle drivers because it accounts for a large number of drivers, roads, and people's movements and presents the greatest opportunity for motorcycle accident care intervention. If first aid training was given to the MC driver, it would significantly decrease the complications after the scene.

### **1.3. Significance of the study**

The study explores the knowledge, attitude, practices, and associated factors of motorcycle drivers. The data obtained in this study will be used by the Dilla town road and transport office to implement laws and regulations related to MCA. In addition, the Gedeo Zone Health Department may utilize the findings of this study to plan health care delivery to motorcycle accident (MCA) victims and to plan strategic collaboration with other stakeholders to reduce motorcycle-related impacts. This study will also provide baseline information for other researchers to work on further research-related issues.

## **2. Literature Review**

In this literature review, first aid service is explored from motorcycle drivers to know their knowledge, attitude, practice, and associated factors related to motorcycle accidents. The review is taken promptly to collect data from a previously done study regarding first aid among drivers.

### **2.1. Knowledge of motorcycle driver towards first aid**

According to a study done in Benin, professional motorcyclists (PMs) baseline knowledge and practices for the immediate post-crash care system 430 professional motorcycle drivers who participated in the study were all middle-aged men, with an average age of 38.38 and a typical age range of 30-44 years (77.71%). At least one of the three approaches examined was known by 49.53 percent of the PMs. In particular, 21.60% of the PMs were aware of the lateral safety position, whereas 13.15% of the PMs were aware of the management principles of injuries/hemorrhages, and 32.86% of them were aware of the management principles of fractures(24).

Another study on first aid knowledge and practice among commercial motorcycle driver in Ibadan, Nigeria, indicated that the proportions of participants with poor, fair, and good FA knowledge were 79.2 percent, 18.5 percent, and 2.3 percent, respectively. First aid (FA) services were also given at motorcycle accident scenes by the majority of commercial motorcycle riders (CMRs) (76.9%). Primary-educated respondents were more likely to be familiar with FA than those with secondary and tertiary education. In addition, individuals who had FA training were less likely to have poor FA knowledge than those who have not training. The majority of commercial motorcycle riders were willing to train(25).

Furthermore, in a study on boda-boda (motorcycle) drivers in Kenya, the authors examined their knowledge, attitudes, and practices on basic trauma life support. Only 2 women were among the 473 participants, and 99.6% of them were men. The average age was 29(range 17–59). 32% of the motorcycle's drivers were single, while 68% were married. The participants had worked as boda-boda riders for 5 years, with the maximum service period being 12 years. Half of the participants (50%) reported having completed primary school, 40% had completed secondary school, and the remaining 10% had completed tertiary education. Transport to the hospital was the most common type of aid they provided (73 percent). Others (6.5%) gave the victims first aid. Yet, just 4% of participants know how to open a blocked airway, even though 87 percent of participants value open airways(26).

## **2.2. Attitude of motorcycle driver towards first aid**

In a study of Kenyan boda-boda (motorcycle) drivers, 91% said they stopped at the scene of the accident to help the victim. 5% are spectators. 9 percent of people who witnessed the accident left without stopping because they believed they lacked knowledge and were afraid of accidents. 15.6% had first aid training(26).

The study conducted in Benin can professional motorcyclists be an asset in immediate post –crash care system and baseline knowledge and practice the main reason given for the lack of initiative in road crashes (RCs) was lack of knowledge of the course of action to take (19.64%), fear of aggravating the situation (15.18%), and the fact that first-aid response was not part of the PM's remit (13.39%)(25).

## **2.3. Practice of motorcycle driver towards first aid**

The study conducted in Benin found that professional motorcyclists can be an asset in the immediate post-crash care system and baseline knowledge and practice of the 430 PMs, including 313 who witnessed road crashes (RC) at least once, and out of this, 32.27% said they had helped the victims by a first-aid action(27).

In a study of boda-boda (motorcycle) drivers in Kenya, 91% reported that they stopped at the accident scene to assist the victim, and the most assistance that they offered was to transport the victims to the hospital (73%). Others 14% called for help, 6.5% gave first aid, and 1.5% assisted in carrying the victim(26).

### **3. Objectives**

#### **3.1. General Objective**

To assess knowledge, attitude, practices, and associated factors of first aid service related to motorcycle accidents among motorcycle drivers in Dilla town, southern Ethiopia.

#### **3.2. Specific Objective**

To determine the knowledge of motorcycle drivers toward first aid related to motorcycle accidents in Dilla town, southern Ethiopia.

To determine the attitude of Motorcycle drivers toward first aid related to motorcycle accidents in Dilla town, southern Ethiopia.

To determine the practice of Motorcycle drivers to ward first aid related to motorcycle accidents in Dilla town, southern Ethiopia.

To identify factors associated with knowledge, attitude, and practice of first aid service related to motorcycle accidents in Dilla town, southern Ethiopia.

## **4. Methods and Materials**

### **4.1. Study area and study period**

The research was taking place in Dilla Town. It is the administrative center of the Gedeo zone in the SNNPR. It is located 395 km from the capital city Addis Ababa and 94 km from Hawassa. Dilla town had an estimated 81,644 people in the 2007 census. The town encompasses five kebeles, such as Chichu, Harowolaabu, Odaya'a, Haroressa, and Sessa kebeles. Each kebele has 3 ketenas, for a total of 15 ketenas. According to the Dilla town transport authority, there are a total of 4200 MCs that were registered and have number plates. This study was conducted from March 15 to April 15, 2023.

### **4.2. Study Design**

A community-based cross-sectional study design was employed.

### **4.3. Source population**

All motorcycle drivers who were in Dilla town.

### **4.4. Study Population**

sampled motorcycle drivers who were in the selected ketenas and fulfilled inclusion criteria.

### **4.5. Inclusion and Exclusion criteria**

#### **4.5.1. Inclusion criteria**

Motorcycles that have been registered and have a number plate

#### **4.5.2. Exclusion criteria**

Absent drivers at the time of data collection due to different social reasons.

## 4.6. Sample size and Sampling procedure

### 4.6.1. Sample size

The sample size was calculated using the sample size determination for a single population proportion. Due to the fact that there is no study conducted in our country, researchers decided to take  $P = 50\%$ . The following formula was used to estimate the minimum number of motorcycle drivers required for the study. Since the population was relatively small (less than 10,000), population correction was used.  $N$  = the total number of motorcycle drivers (826),  $nf$  = the sample desired from a finite population,

$$n = \frac{\left(\frac{z_{\alpha}}{2}\right)^2 P(1-P)}{d^2} = \frac{(1.96)^2 0.5(1-0.5)}{(0.05)^2} = 384$$

where  $n$  = maximum sample size to represent a large population.

$Z$  = with 95% confidence level ( $Z=1.96$ )

$d$  = margin of sample error 5%

where  $z_{\frac{\alpha}{2}}$  (critical value) = 1.96 for 95% CI

Since the population relatively small (less than 10,000) population correction was used.

$N$  = the total number of motorcycle drivers (826)

$nf$  = sample desired from finite population,

$$nf = \frac{n}{1 + \frac{n}{N}} = \frac{384}{1 + \frac{384}{826}} = 262$$

Then by adding 10% of non-response rate, the sample size became **288**.

### 4.6.2. Sampling Procedure:

Dilla town has five kebeles, and then four kebeles are randomly selected. Each selected kebele has three ketenas, of which two were selected by lottery method. Based on the number of motorcycle drivers in each selected ketena, proportional allocation was conducted to allocate study participants, and then systematic random sampling was used to select study participants from each selected ketena. The calculated  $K_{th}$  was 3 (which is calculated by dividing the source population by sample size), so the first responder was identified by the lottery method, then the next responder was two until the desired sample size was fulfilled. (Figure 1).

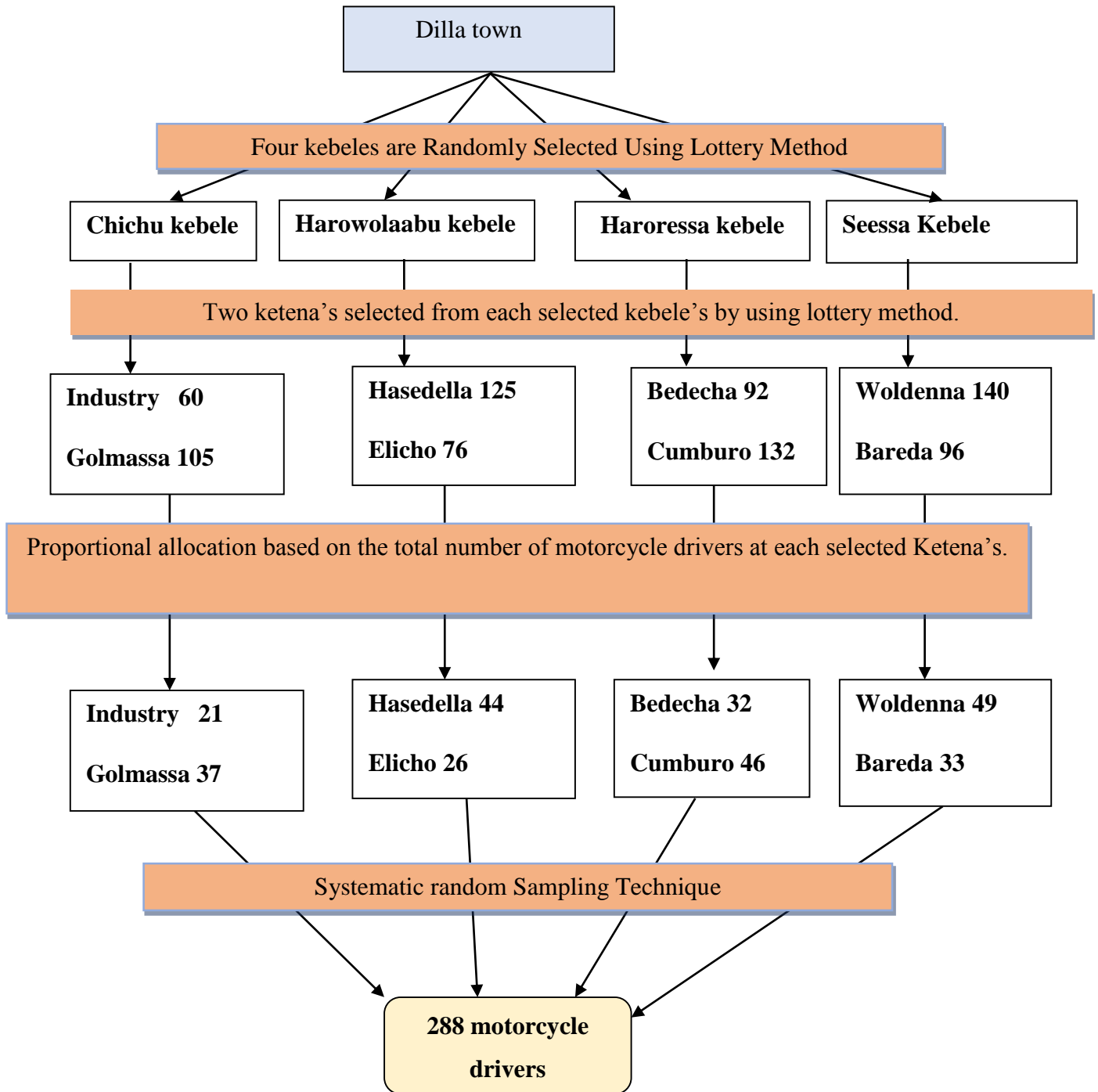


Figure 1: shows schematic representation of the sampling procedure

## 4.7. Study Variables

### 4.7.1. Dependent Variables

Knowledge.

Attitude.

Practice.

### 4.7.2. Independent Variables

Age

Sex

Marital status

Educational level

Work experience

## 4.8. Operational Definition

**First aid:** - Initial care given to a sick or injured individual using the resources at hand prior to the availability of professional medical assistance.

**Motorcycle:** - is any form of two wheeled vehicle with an engine.

**Motorcycle accident:** - injury occurs to a person due to a motorcycle-related accident.

**Knowledge about first aid:** knowledge about components of first aid, signs and management of bleeding, and the position of the victim during an MCA and transportation of the victim. Those who score equal to or above the mean are considered to have good knowledge about first aid, and those who score below the mean are considered to have poor knowledge.

**Attitude about first aid:** - willing to provide first aid at the scene and believe it is necessary to give first aid immediately at the scene. Those who score equal to or above the mean are considered to have positive attitude about first aid, and those who score below the mean are considered to have negative attitude.

**Practice of first aid:** - had a trend of MCA and what action was taken during the victim's respiratory problem, sever bleeding and bone fracture. Those who score equal to or above the mean are considered to have good practice about first aid, and those who score below the mean are considered to have poor practice.

#### **4.9. Data Collections tool and techniques**

A face-to-face interview was conducted to collect the data from study participants. The study tool was taken from similar previous studies. The tool contains sociodemographic characteristics of the study population, and the next section is intended to assess knowledge, attitude, and practice service for motorcycle accidents among motorcycle drivers(27)(28).

It was prepared in English and translated into Amharic. The data collectors were three BSc nurses and one MSc supervisor. The main principal took on the responsibility of coordinating the nurse and discussed the study's purpose.

#### **4.10. Data quality control**

The quality of the data was controlled by applying a pretest to 5% of the sample MC drivers two weeks before data collection time. One full day of training was given for data collectors regarding the study, the interview, and the data collection procedure by the principal investigator. The collected data was checked every day for its completeness, and any problems were discussed with the data collectors overnight. Confidentiality was insured by disclosing the names or any personal identity. Uncompleted questionnaires were omitted before data entry.

#### **4.11. Data processing and Analysis**

Data was verified, coded, and entered into Epidata version 4.6, and then exported and analyzed by SPSS version 26 software. Categorical variables were summarized using frequency and percentage. Descriptive statistics such as the mean and standard deviation were calculated. To categorize knowledge, attitude, and practices, the questionnaires were modified by recoding the options provided. The correct responses were assigned a value of "1," while the incorrect responses were assigned a value of "0". Then, the total number of correct answers for each respondent and variable was calculated. Using this information, the mean score was determined. By using means as cut points, knowledge and practice were classified as good or poor, and attitude was categorized

as positive or negative. To check the association between dependent and independent variables, binary logistic regression was used. In univariate analysis, variables with p values less than 0.25 are taken to multivariable analysis. In multivariable analysis, variables with a p value less than 0.05 were declared statistically significant and reported by using an adjusted odd ratio with a 95% confidence interval. The results presented by using narrative texts, tables, and figures.

#### **4.12. Ethical Consideration**

AAU College of Health Science, Department of Emergency Medicine and Critical Care Nursing, gave permission for the study to be conducted, and then the title was evaluated and approved. An official letter was written to the Dilla town road and transport office; permission was obtained from Chichu, Harowolaabu, Haroressa, and Sessa kebeles. Prior to the interview, all of the respondents' rights were made known, and their privacy was respected. The respondent was highly secure and well informed about the purpose and significance of the study, and requested to cooperate for the interview through written consent.

#### **4.13. Dissemination of the result**

The result of this study will be disseminated to the Gedeo Zone Health Department and Dilla Town Road and Transport Office.

## 5. Results

### 5.1. Socio demographic characteristics of motorcycle drivers

In the present study, from a total of 288 samples, 272 respondents have participated in the study, this makes the participation rate 94.5%. The mean age of participants was 26.21 (SD 4.952), and 261 (96%) study participants were male. In terms of the marital status of respondents, 138 (50.7%) were single and 134 (49.3%) were married. Most respondents 166(61.0%) had 1–5 years of driving experience on motorcycles, followed by 6–10 years 55 (20.2%). Educational background of respondents: 109 (40.1%) attended primary school (1–8), whereas 90 (33.1%) and 55 (20.2%) attended secondary (9–12) and above secondary, respectively. (Table 1).

Table 1: The Sociodemographic characteristics of the motorcycle drivers, Dilla town, southern Ethiopia,2023

Variable	Response	Frequency	Percentage
Age	17-24	102	37.5
	25-32	139	51.1
	>=33	31	11.4
Sex	Male	261	96.0
	Female	11	4.0
Driving experience	<1year	51	18.8
	1-5years	166	61.0
	6-10yeras	55	20.2
Level of education	No formal education	18	6.6
	Primary (1-8)	109	40.1
	Secondary (9-12)	90	33.1
	College or university	55	20.2
Marital status	Single	138	50.7
	Married	134	49.3

## **5.2. First aid knowledge of motorcycle drivers**

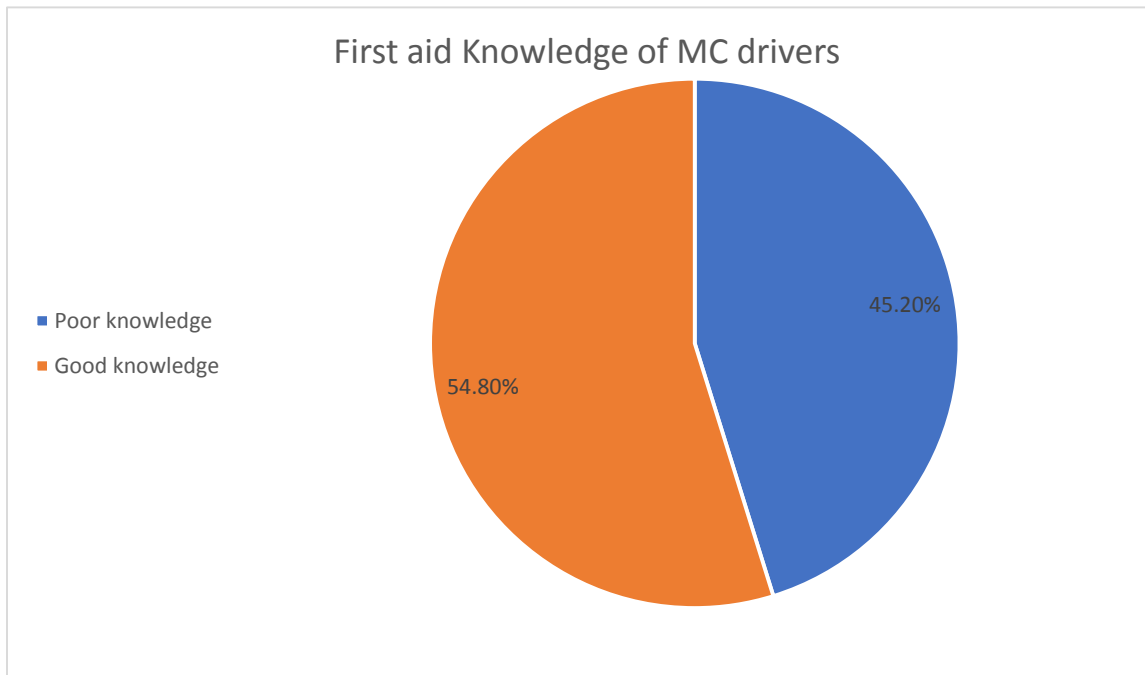
The result of the assessment on the knowledge area showed that the majority of the study participants, 191 (70.2%) of the motorcycle drivers, were able to define first aid as Immediate or initial care given to victims before trained medical workers arrive, while 81 (29.8%) of them were defined as Care given to victims by only trained medical professionals. Similarly, the necessity of first aid being given immediately during the scene 174(64.0%). More than half of study participants believed first aid should be given by trained bystanders 152(55.9%). Regarding The result of the assessment on the knowledge area showed that the majority of the study participants, 191 (70.2%) of the motorcycle drivers, were able to define first aid as immediate or initial care given to victims before trained medical workers arrive, while 81 (29.8%) of them were able to define it as care given to victims by only trained medical professionals. Similarly, the necessity of first aid being given immediately at the scene was identified 174(64.0%). More than half of study participants believed first aid should be given by trained bystanders 152(55.9%). Regarding their knowledge of the procedure to open the airways for the victim, the majority of the study participants didn't know how to open a blocked airway 127(46.7%). Only 102 (37.5%) participants knew priority was given to MCA victims during first aid. Regarding important actions to stop severe bleeding, the majority of 248(91.2%) of drivers responded by applying a tourniquet, tying the bleeding site with a cloth or bandage, applying pressure, and lifting the injured part above body level. Regarding important actions to stop severe bleeding, the majority of 248(91.2%) of drivers responded by applying a tourniquet, tying the bleeding site with a cloth or bandage, applying pressure, and lifting the injured part above body level. Similarly, only 18 (6.6%) of respondents knew safe positions for a traumatic victim as both placing the victim sideways and keeping the neck and head from moving and a face-up position. One hundred seventy-four (64%) of the study participants knew about immobilization using splinting for the management of MCA victims. Their knowledge of the procedure to open airways for the victim majority of the study participants didn't know how to open blocked airway 127(46.7%). Only 102 (37.5%) participants knew priority was given to MCA victims during first aid. Similarly, only 18 (6.6%) of respondents knew safe positions for a traumatic victim as both placing the victim sideways and keeping the neck and head from moving and a face-up position. One hundred seventy-four (64%) of the study participants knew immobilization using splinting for the management of MCA victims. (Table 2)

Table 2: Frequency distribution of first aid knowledge of motorcycle drivers, Dilla town, southern Ethiopia, 2023

Variable	Response	Frequency	Percentage
Define first aid	Care given to victims by only trained medical professionals	81	29.8
	Immediate or initial care given to victims before trained medical workers arrive	191	70.2
Timing of and place for first aid	Immediately at scene	174	64.0
	At health facility	92	33.8
	I don't know	6	2.2
Provider of first aid	Health care workers only	119	43.8
	Trained bystanders including drivers	152	55.9
	I don't know	1	0.4
Procedures to open air way	Jaw thrust	88	32.54
	Head tilt and chin lift	57	21.05
	I don't know	127	46.75
Not component of the first aid management	Air way problem maintenance	38	14.0
	Stopping bleeding through applying pressure	21	7.7
	Splinting fracture	34	12.5
	Giving oral fluid for unconscious	107	39.3
	Transported the victim to hospital	5	1.8
	I don't know	66	24.3
Prioritized/first done for victims	Airway problem maintenance	102	37.5
	Transport to hospital	55	20.2
	Stopping bleeding	92	33.8

	Splinting fracture	6	2.2
	I don't know	17	6.3
Sign of air way problem	Unconscious	54	19.9
	No breathing	192	70.6
	Unconscious, no breathing	25	9.2
	I don't know	1	0.4
Ways to give breath	Mouth to mouth	102	37.5
	Mouth to nose	61	22.4
	I don't know	108	39.7
Important action to stop sever bleeding	Apply tourniquet	60	22.1
	Tying the bleeding site with close/bandage	141	51.8
	Apply pressure and lift the injured part above the body level	47	17.3
	Apply tourniquet and Tying the bleeding site with close/bandage	10	3.7
	I don't know	14	5.1
Safe position during traumatic event	Placing the victim sideways	69	25.4
	Keeping the neck and head not to move and face up position	135	49.6
	Keeping the patient face down position	18	6.6
	Placing the victim sideways and Keeping the neck and head not to move and face up position	18	6.6
	I don't know	32	11.8
Management of the bone fracture	Immobilization	174	64.0
	Using splinting		
	Try twist back into the place by force	54	19.9
	I don't know	44	16.2

In this study, the knowledge part has 11 questions, with the correct answer coded as 1 and the incorrect answer coded as 0. The mean knowledge of respondents was 6.7. (Figure 2)



**Figure 2:** First aid Knowledge of MC drivers, Dilla, Ethiopia, 2023

### 5.3. First aid attitude of motor cycle drivers

Regarding the attitude of the study participants, the majority of them believe first aid should be given immediately during scene 220 (80.9%). In addition to that, 198 (72.2%) of them have the willingness to give first aid whenever an accident happens. The reasons for those motorcycle drivers who are not willing to provide first aid for the victims include the risk of applying the wrong treatment and causing harm 32(11.8%), fear of infection 15(5.5%), lack of skill to give first aid 26(9.6%), and overcrowding of the incident area 1 (0.4%). Conversely, the majority of the study participants showed their interest in being trained in first aid, if applicable 254(93.4%). In a similar manner, 70 (25.7%) of the participants believe that training in first aid should not be given to non-professionals. About 140 (51.5%) had a positive attitude towards first aid, whereas the rest 132(48.5%) had a negative attitude. (table 3)

Table 3: Frequency distribution of first aid attitude of motorcycle drivers, Dilla town, southern Ethiopia,2023

Variable	Response	Frequency	Percentage
Believe first aid immediately at scene	Yes	220	80.9
	No	37	13.6
	Uncertain	15	5.5
Willingness to provide first aid	Yes	198	72.8
	No	74	27.2
Interest to train first aid	Yes	254	93.4
	No	18	6.6
Neck injury aggravated by moving	Yes	114	41.9
	No	51	18.8
	Uncertain	107	39.3
Lay people training	Yes	151	55.5
	No	70	25.7
	I don't know	51	18.8

#### 5.4. First aid practice of motorcycle drivers

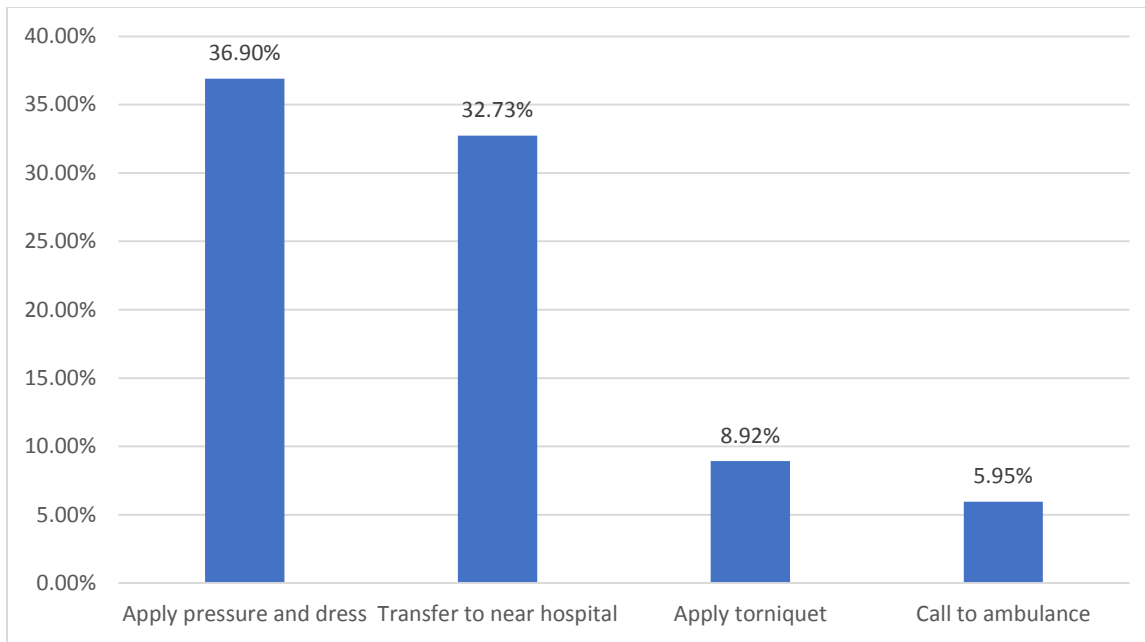
Regarding the practice of first aid among study participants, almost all of the study participants 259(95.2%) experienced an accident scene. From those who experienced accident scenes, they revealed that 89 (34.36%) of MCA occurred by the respondents and 170 (65.64%) by another motorcycle driver. Only 109 (42.1%) gave first aid to the victim, and the majority of them did not. The reasons behind not giving first aid include another person having done it 65 (43.33%), crowdedness of the scene site 33 (22%), not being trained 27 (18%), and fear of doing harm 25 (16.67%). Seventy-eight (30.1%) witnessed an airway problem, and 34 (43.59%) of them transported a victim to the hospital. Those attending MCA and observing a bone fracture 97 (37.45%) said immobilization using splinting was their major first action 51(52.58%). In contrast, a few study participants 7(2.7%) also experienced other injuries like death, lower extremity burning with a gas outlet, and broken teeth. Of respondents' first actions, transporting the victim to the hospital was 3 (42.86%). (Table 4)

Table 4: Frequency distribution of first aid practice of motorcycle drivers, Dilla, southern, Ethiopia, 2023

Variable	Response	Frequency	Percentage
Attended to MCA victims	Yes	259	95.2
	No	13	4.8
by whom (n=259)	by respondent	89	34.36
	by another driver	170	65.64
gave first aid (n=259)	Yes	109	42.1
	No	150	57.9
If no, reason (n=150)	I am not trained	27	18
	Someone else did it	65	43.33
	Crowdedness of the incident site	33	22
	Frightened of doing harm than help	25	16.67
if yes, your action (n=109)	Call to ambulance	17	15.6
	Transfer to near hospital	41	37.61
	Give first aid for victims	51	46.79
Attended airway problem	Yes	78	30.1
	No	181	69.9
If yes, your action (n=78)	call to ambulance	17	21.8
	Transfer to near hospital	34	43.59
	Give first aid and manage airway problem	27	34.61
Attended head and neck injury	Yes	171	66.02
	No	88	33.98
If yes, your first action (n=171)	keep the neck and head not move and transfer to nearest hospital	77	45.02
	Call to ambulance	87	50.88

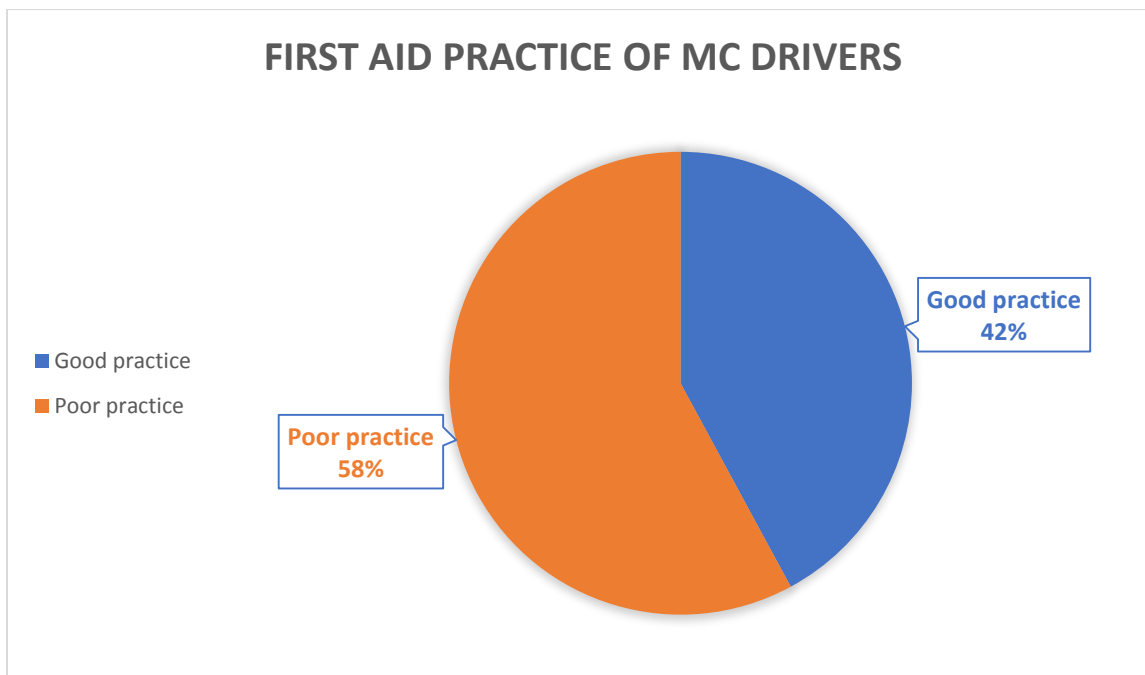
	Call to ambulance and keep the neck and head not move and transfer to nearest hospital	3	1.76
Attended bone fracture	Yes	97	37.45
	No	162	62.55
If yes, your first action (n=97)	Call to ambulance	39	40.20
	Immobilization using splinting	51	52.58
Attended other than above mentioned	Yes	7	2.7
	No	252	97.3
If yes, type of injury (n=7)	Broken teeth	1	14.29
	Burning of leg in gas outlet	2	28.57
	Death	2	28.57
	Nasal bleeding	1	14.29
	Swelling of lower extremity	1	14.29
If yes, your first action	Add coffee powder on it	1	14.3
	Cold compress	1	14.3
	Nothing	1	14.3
	Pinch the nose	1	14.3
	Transport to hospital	3	42.8

Among study participants about 168 (64.87%) attended severe bleeding, their first action was to apply pressure and dress 62(36.9%), transfer to near hospital 55 (32.72%), apply tourniquet 15 (8.92%) and call to ambulance 10 (5.95%). (Figure 3)



**Figure 3:** Practice of study participant’s for sever bleeding victims, Dilla, Ethiopia, 2023

From study participants who attended MCA, one hundred nine (42.1%) had good practice, whereas 150 (57.9%) had poor practice. (Figure 4)



**Figure 4:** First aid Practice of MC drivers, Dilla, Ethiopia, 2023

## 5.5. The factors associated with knowledge, attitude, and practice among motorcycle drivers

### 5.5.1. The factors associated with first aid knowledge

Age, marital status, driving experience, and level of education were associated with binary logistic regression, with a p-value <0.2. Level of education was only significantly associated with first aid knowledge in multivariate logistic regression. Respondents who attended college or university educated (AOR=3.937;95% CI: 1.175-13.194) and secondary educated (AOR = 3.40;95% CI: 1.1-10.3) were about four times more knowledgeable than those who were not educated. (Table 5)

Table 5 Factors associated with first aid knowledge among motorcycle drivers, Dilla, southern Ethiopia,2023.

Factors		Knowledge		COR (95%CI)	p-value	AOR (95%CI)	p-value
		Good	Poor				
Age	17-24	40(39.2%)	62(60.8%)	1			
	25-32	89(64%)	50(36%)	2.76(1.6-4.67)	<0.001*	1.9(0.96-3.96)	0.064
	>=33	20(64.5%)	11(35.5%)	2.81(1.2-6.5)	0.015*	1.98(0.61-6.4)	0.256
Marital status	Single	62(44.93%)	76(55.07%)	1			
	Married	87(64.93%)	47(35.07%)	2.269(1.39-3.69)	0.001*	1.39(0.6-2.89)	0.373
Level of education	No education	6(33.34%)	12(66.66%)	1			
	Primary education	49(44.96%)	60(55.04%)	1.63(.571-4.66)	0.360	2.11(0.69-6.4)	0.190
	Secondary education	55(61.1%)	35(38.9%)	3.14(1.081-9.14)	0.036*	3.40(1.1-10.3)	0.031**
	College/university	39(70.9%)	16(29.1%)	4.87(1.56-15.23)	0.006*	3.9(1.1-13.19)	0.026**
Driving experience	<1year	19(37.26%)	32(62.74%)	1			
	1-5 year	100(60.24%)	66(39.76%)	2.5(1.33-4.87)	0.005*	1.61(0.7-3.28)	0.192
	6-10 year	30(54.55%)	25(45.45%)	2.02(0.93-4.4)	0.076*	0.71(0.26-1.9)	0.508

Note: \*p-value <0.25 on COR, \*\*p-value <0.05 on AOR

### 5.5. 2. The factors associated with first aid Attitude

In binary logistic regression age, marital status, and level of education were associated with attitudes toward first aid and were candidates for multivariate logistic regression. But none of the factors had a significant association with the attitude of the respondents. (Table 6)

Table 6: Factors associated with first aid attitude among motorcycle drivers, Dilla, southern Ethiopia,2023.

Factors		Attitude		COR (95%CI)	p-value	AOR (95%CI)	p-value
		Positive	negative				
Age	17-24	41	61	1			
	25-32	79	60	1.95(1.16-3.29)	0.011*	0.36(0.12-1.08)	0.070
	>=33	20	11	2.70(1.17-6.23)	0.020*	0.71(0.30-1.68)	0.442
Marital status	Single	62	76	1			
	Married	78	56	1.70(1.05-2.75)	0.029*	0.97(0.48-1.95)	0.941
Level of education	No education	12	6	1.43(0.47-4.39)	0.524	2.14(0.65-6.95)	0.206
	Primary education	48	61	0.56(0.29-1.09)	0.089*	0.91(0.410-2.02)	0.817
	Secondary education	48	42	0.82(0.41-1.61)	0.569	1.08(0.52-2.25)	0.829
	College or university	32	23	1			

Note: \*p-value <0.25 on COR, \*\*p-value <0.05 on AOR

### 5.5.3. Factors associated with first aid practice

To know association of variables with first aid practice, logistic regression was used. In bivariate logistic regression, age, marital status, and driving experience were associated with the first aid practices of the respondents. In multivariate logistic regression, only age was significantly

associated with first-aid practice. Study participants categorized in the age group  $\geq 33$  were six times more likely to practice first aid than those in the age group under 17-24 (AOR=5.516;95%CI:1.756-17.325). (Table 7)

Table 7: Factors associated to first aid practice among motorcycle drivers, Dilla, southern Ethiopia,2023

Factors		Practice		COR (95%CI)	p-value	AOR (95%CI)	p-value
		Good	Poor				
Age	17-24	31(32.98%)	63(67.02%)	1			
	25-32	59(44.03%)	75(55.97%)	1.59(0.92-2.76)	0.094*	1.98(0.96-4.06)	0.063
	$\geq 33$	19(61.3%)	12(38.7%)	3.21(1.38-7.46)	0.006*	5.51(1.75-17.3)	0.003**
Marital status	Single	49(38.28%)	79(61.72%)	1			
	Married	60(45.8%)	71(54.2%)	1.36(0.83-2.23)	0.221*	0.81(0.41-1.62)	0.561
Driving experience	<1 year	17(34.7%)	32(65.3%)	1			
	1-5 year	70(44.87%)	86(55.13%)	1.53(0.78-2.98)	0.210*	1.14(0.54-2.38)	0.727
	6-10 Year	22(40.74%)	32(59.26%)	1.29(0.58-2.88)	0.528	0.61(0.22-1.65)	0.332

Note: \*p-value <0.25on COR, \*\*p-value<0.05 on AOR

## 6. Discussion

Similar studies on KAP and associated factors among motorcycle drivers were not done in Ethiopia. In this study, 96% were male. The mean age of participants was 26.21 (SD  $\pm$ 4.95), typical age range of 26–32. A similar study done in PMs in Benin showed all respondents were male, with an average age of 38.38 and a typical age range of 30-44. In a Kenyan study on boda-boda drivers, the average age was 29 with an age range of 17–59. When compared to the study participants in Benin and Kenya, the mean age of our respondents was younger. This might be due to the study setting and time of study(24) (26).

Respondents who were educated a college or university were more knowledgeable about FA than those who were not formally educated or primary educated. A similar study in Nigeria showed that respondents with primary education were more likely to be familiar with FA knowledge than those with secondary and tertiary education. Although 64% of study participants believed that FA was given immediately at the scene, compared to the Nigerian study's 76.9%, our study is lower. This might be due to differences in countries' laws and different knowledge of drivers regarding the importance of FA(24).

In our study, placing a victim in a lateral safety position was 69 (25.4%). However, a study done in Benin in PMs revealed that 21.6% knew the lateral safety position. This indicated that placing the victim in a lateral position was almost similar to that of the Benin study. A large number of respondents believed placing the victim in a lateral position was safer compared to that in Benin(23). In this study, 88 (32.5%) of study participants knew how to open a blocked airway; similarly, in the Kenyan study, only 4% knew the procedure to open a blocked airway. This might be because of the sample size(26).

In this study, more than half of the study participants 149(54.8%) had good knowledge, whereas 123(45.2%) had poor knowledge. Another study done in Nigeria revealed that 2.3% of respondents had good knowledge and 79.2% had poor knowledge. This study's result was higher compared to a Nigerian study related to FA knowledge. This might be because of the difference in knowledge of FA among motorcycle drivers(26).

The majority of participants in this study, 72.8 percent of MC drivers, were willing to give first aid to MCA victims; the remaining participants were not. The reasons given by respondents who weren't willing to provide first aid were that 9.6% didn't know how to provide it. Similarly, in Kenya, 91% of them were willing to provide first aid, and of the remaining 9% who were not willing to provide FA, the main reason was a lack of knowledge. The difference might be due to the study setting. In the Benin study as well, their reasons not to provide FA were 19.64% lack of knowledge. The difference might be the sample size and policy of the country(24)(26).

In this study, 95.2% of the participants had attended to MCA victims before. From those participants who attended MCA victims, 42.1% gave first aid, and 57.9% didn't. From those who gave first aid, 14% called an ambulance, and 37.6% transferred to a nearby hospital. 46.79% gave first aid to victims. Regarding a similar study done in Benin, 32.27% helped the victims by FA action, whereas in the Kenyan study, the most assistance or FA done was to transport the victim to the hospital (73%). Others (14% called for help, 6.5% gave first aid to the victim(31)(32).

Of all the 259 respondents, 34.36% reported being involved in an accident themselves. In the Kenyan study, 53% reported being involved in an accident(26).

## **7. LIMITATION AND STRENGTH**

### **7.1. Limitation**

- There was lack of similar studies conducted in our country and around the world.
- Lack of data (previous studies) on MCA in Ethiopia made the result of this study difficult to compare with those of the previous study.
- MC drivers are a very mobile group of people; therefore, it is tedious to collect data from a selected registered plate number.
- Most MC drivers demanded to be paid for the interview.

### **7.2. Strength**

- Motorcycle drivers were there in every accident, whether to help or to transport the victims to a health facility.
- Motorcycle drivers' willingness to be trained in FA might indicate their concern for giving FA to those injured at the scene.

## **8. Conclusions and Recommendation**

### **8.1. Conclusion**

The study found that almost half of the MC drivers have adequate knowledge of first aid. The majority of respondents believed that first aid was important, but their first aid practice was inadequate. First-aid practice was found to have a statistically significant relationship with age. Dilla Town Road and Transport Office should consider guidelines for motorcycle-related accidents. The study found that almost half of the MC drivers have adequate knowledge of first aid. The majority of respondents believed that first aid was important, but their first aid practice was inadequate. First-aid practice was found to have a statistically significant relationship with age. Dilla Town Road and Transport Office should consider guidelines for motorcycle-related accidents.

### **8.2 Recommendation**

SNNPR, road transport bureau: -

- to implement laws regarding traffic rules and regulations regarding motorcycles.
- The dangers of driving a motorcycle are great because there are no full-body safety methods. So, it is important to consider safety measures when driving.

Dilla town road and transport office: -

- to plan FA trainings for MC drivers regarding MCA and inform the community about the risk of driving a motorcycle.
- should set guidelines that include age, license, and FA training for those who request plate numbers.

Gedeo zone health department: -

- Motorcycles play a vital role in transporting a victim within a minute's range, so collaborating with other sectors aware of MCA and how FA service could save the lives of victims.

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## **ANNEX**

### **Annex I: English Version participant Information Sheet and Informed Voluntary Consent**

#### **Information Sheet**

**Greeting:** Good morning/afternoon!

My name is----- . I am working as a data collector for the study being conducted on the assessment of knowledge attitude and practice of first aid supervision related to motorcycle accident among motorcycle drives in Dilla town, southern Ethiopia, 2023.

**The Aim of this study is;** to assess knowledge attitude and practice of first aid supervision related to motorcycle accident among motorcycle drivers in Dilla town, southern Ethiopia, 2023.

**Risk/Discomfort:** There is no risk in participating in this research project.

**Benefits:** If you participate in this research project, there may not be direct benefit to you and you will not be provided any incentives to take part in this project, but your participation is likely to help us in assessing knowledge attitude and practice of first aid supervision among motorcycle drivers and this will help the concerned bodies for developing appropriate interventions.

**Confidentiality:** The information collected from this research project will be kept confidential and information about you that will be collected by this study will be stored in a file, without your name, but a code number assigned to it and it will not be revealed to anyone except the principal investigator.

**Right to refuse or withdraw:** You have full right to refuse from participating in this research. You can choose not to respond to some or all questions if you do not want to give your response. You have also the full right to withdraw from this study at any time you wish.

**Procedure and duration:** Totally the questionnaire contain 37 questions. And some of the questions may have more than one answer as alternatives.

Do you agree to participate?

Yes  continue to the next page      No  Thank the participant

### **Individual Consent Form**

First, I would like to thank you for taking your time and participating in our study.

I the undersigned participated in the study on “assessment of knowledge attitude and practice of first aid supervision related to motorcycle accident among motorcycle drivers in Dilla town, southern Ethiopia 2023.” on my free will and interest after being oriented about the purpose of the study.

Can you sign for your voluntariness?

Yes ----- NO-----

Interviewer name: ----- Signature -----

Date -----

**Person to Contact:** If you want more information and check about this project, you can contact the following people.

Principal Investigator Name and Address:

**Name:** Mesafint Tilahun Alemayehu    Phone number: +251938950349

Email: [messitila706@gmail.com](mailto:messitila706@gmail.com)

Do you have any question that you want to ask me about the study?

## **QUESTIONNAIRE FOR INTERVIEW**

### **PART I. SOCIODEMOGRAPHIC CHARACTERISTICS AMONG STUDY PARTICIPANTS**

1. Ages in year\_\_\_\_\_
2. Sex a. Male b. Female
3. Driving experience
  - a. <1 year
  - b. 1-5 years
  - c. 6-10 years
  - d. >10 years
4. Level of education
  - a. No education
  - b. Primary (1-8)
  - c. Secondary (9-12)
  - d. College and university
5. Marital status
  - a. Single
  - b. Married
  - c. Divorce
  - d. Widowed

### **PART II. FIRST AID KNOWLEDGE AMONG STUDY PARTICIPANTS**

6. What is first aid?
  - a. Care given to victims by only trained medical professional.
  - b. Immediate or initial cares given to victims before trained medical workers arrive.
  - c. Other specify -----
7. When and where should be first aid given during Motorcycle Accidents?
  - a. Immediately at scene
  - b. When reaching at hospital
  - c. I don't know.
  - d. Other (specify)\_\_\_\_\_
8. Who should give first aid during MCA?
  - a. Health care workers only
  - b. Trained bystanders include drivers.
  - c. I don't know.
  - d. Other (specify)\_\_\_\_\_
9. Which of the following procedures are used to open the air way?
  - a. Jaw thrust
  - b. Head tilt and chin left.
  - c. I don't know.
  - d. Other (specify)\_\_\_\_\_
10. Which of the following is not component of first aid management of MCA victims?
  - a. Airway problem maintenance
  - b. Stopping bleeding through applying pressure
  - c. Splinting fractures
  - d. Giving oral fluid for unconscious
  - e. Save transport the victim to hospital.
  - f. I don't know.
11. Which of the following is prioritized/done first for MCA victims?
  - a. Airway problem maintenance
  - b. Transport to hospital
  - c. Stopping bleeding

- d. Splinting fractures
  - e. I don't know.
12. Which of the following are sign of air way problem for MCA victim? (You can give more than one answers)
- a. Unconscious
  - b. No breathing
  - c. I don't know.
  - d. Other (specify) \_\_\_\_\_
13. Which of the following are usually used for to give breath?
- a. Mouth to mouth
  - b. Mouth to nose
  - c. I don't know.
  - d. Other (specify)\_\_\_\_\_
14. Which of the followings are important to stop severe bleeding? (You can give more than one answers)
- a. Apply tourniquet.
  - b. Tying the bleeding site with cloth/bandage
  - c. Apply pressure and lift the injured part above the body level.
  - d. I don 't knows.
  - e. Other, specify\_\_\_\_\_
15. Which position is safe for a patient after atraumatic event? (You can give more than one answers)
- a. Placing the victim sideways.
  - b. Keep the neck and head does not move and face up position.
  - c. Keep the patient face down position.
  - d. I don't know.
  - e. Other (specify) \_\_\_\_\_
16. Which of the following is management of MCA victims with bone fracture?
- a. Immobilization using splinting.
  - b. Try twist back into the place by force.

- c. I don't know.
- d. Other (specify)\_\_\_\_\_

**PART III. FIRST AID ATTITUDE AMONG STUDY PARTICIPANTS**

17. Do you believe that it is necessary to provide first aid immediately for MCA patient at scene?
- a. Yes
  - b. No
  - c. Uncertain
18. Do you have willingness to provide first aid for MCA victim?
- a. Yes
  - b. No
  - c. Uncertain
19. If your answer for question number 18 is 'No', what is your reason?
- a. Could apply wrong treatment and cause harm
  - b. Fear of infection
  - c. I don't know how to give first aid
  - d. Fear of legal concern
  - e. Other specify.....
20. Do you have interest to train first aid?
- a. Yes
  - b. No
21. If a victim has neck injury, do you think that moving the neck of victim aggravates his problem?
- a. Yes
  - b. no
  - c. uncertain
22. Do you think lay people should be trained to give first aid?
- a. yes
  - b. No

- c. I don't know

#### **PART IV. FIRST AID PRACTICE AMONG STUDY PARTICIPANTS**

23. Have you ever attended to MCA victims?
- a. Yes
  - b. No            If NO skip to question number 36
24. If 'yes' for Q. no. 23 the accident occurs by whom?
- a. by respondent
  - b. by another driver
25. If 'yes' for Q. no. 23 did you give first aid?
- a. Yes
  - b. No
26. If 'No' for Q. no. 25, what is your reason not give first aid?
- a. I am not trained
  - b. Someone else did it
  - c. The incidence site was crowded
  - d. Frightened of doing harm than help
  - e. Fear of legal issue
  - f. Other (specify) \_\_\_\_\_
27. If "yes", for Q. no. 25, what was your action?
- a. Call to ambulance
  - b. Transfer to near hospital
  - c. Give first aid for victims
  - d. Call to police station
  - e. Other (specify) \_\_\_\_\_
28. Have you ever attended to MCA victim with airway problem?
- a. Yes
  - b. No            If NO, skip to question number 30
29. If 'yes' for Q. no. 28, what is your first action?
- a. Call to ambulance

- b. Transfer to near hospital
  - c. Give first aid and manage airway problem
  - d. Call to police station
  - e. Other (specify) \_\_\_\_\_
30. Have you ever attended to MCA victims with severe bleeding?
- a. Yes
  - b. No            If NO, skip to question number 32
31. If 'yes' for Q. no. 30, what was your first action? (More than one answer is possible)
- a. Transfer to near hospital
  - b. Apply tourniquet to stop bleeding
  - c. Apply pressure and dress
  - d. Call to ambulance
  - e. Call to police station
  - f. Other (specify) \_\_\_\_\_
32. Have you ever attended to MCA victims with head and neck injury?
- a. Yes
  - b. No            If NO skip to question number 34
33. If 'yes' for Q. no.31, what was your first action? (more than one answer is possible)
- a. Keep the neck and head not move and transfer to nearest hospital
  - b. Call to ambulance
  - c. Call to police station
  - d. Other (specify) \_\_\_\_\_
34. Have you ever attended to RTA victims with bone fracture?
- a. Yes
  - b. No            If NO, skip to question number 35
35. If 'yes' for Q. no. 33, what is your first action?
- a. Call to ambulance
  - b. Immobilization using splinting
  - c. Call to police station

d. Other (specify) \_\_\_\_\_

36. Have you ever attended to MCA victims other than the above-mentioned injuries?

- a. Yes
- b. No

37. If 'yes' for Q. no.35, what types of injured victims? \_\_\_\_\_

38. If 'yes' for Q. no. 35, what was your first action? \_\_\_\_\_

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