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ROAD SAFETY PRACTICES OF COMMERCIAL MOTORCYCLISTS IN ACCRA

By

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Declaration

I carried out this work independently under the guidance of Dr. Phyllis Dako-Gyeke, my academic supervisor. I hereby declare that, with the exception of other writers' studies which I have duly acknowledged, this work is the outcome of my original research. This dissertation either in whole or parts has not been submitted elsewhere for the award for another degree.

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ACADEMIC SUPERVISOR

Dedication

This research work is dedicated to God Almighty in whom are hidden all the treasures of wisdom and knowledge. I also dedicate this research to my dear parents and siblings for their love, care, enormous support and prayers throughout my academic life.

Acknowledgement

First and foremost thanks goes to the Almighty God who is the source of my strength, ideas, knowledge and wisdom without which this work would not have been possible.

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ABSTRACT

Road traffic injuries among motorcyclists have persisted as a serious public health problem and much of the health burden is in developing countries. Over-speeding, poor enforcement of traffic regulations, non-use of helmets and protective attires as well as overloading of passengers have been highly implicated in road traffic injuries in developing countries. The aim of this study was to determine the level of knowledge, attitude and practice concerning road safety measures in preventing road traffic injuries.

This was a cross-sectional study carried out in Accra, Ghana. Purposive and snowballing sampling methods were used to select the three motor stations used for the study and all the consenting motorcyclists operating within the stations were contacted but only 273 were included in the study. Data was collected with a structured, interviewer-administered questionnaire and analyzed with SPSS statistical software.

The findings showed that, majority of them (93.4%) had a good knowledge of the road safety measures with their main source being the media (TV and radio) (78.4%). It also showed that, in terms of attitude, most of them exhibited a very good attitude towards adherence to the road safety measures but however, failed to practice these regulations.

The riders exhibited high knowledge and attitude towards road safety measures but however, most of them did not practice these measures. There is the need for strict law enforcement of road safety especially in the face of observing road traffic regulations, wearing helmets and protective attires as well as having some for their passengers. There is also the need for education to improve knowledge.

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Operational Definition

Motorcycle: A motorcycle is a vehicle with two wheels and an engine.

Motorcyclist: A motorcyclist is a person who rides a motorcycle.

Knowledge: Knowledge is information and understanding about road safety practices.

Attitude: Attitude is the way that motorcyclist think and feel about road safety practices, especially by showing in the wearing of helmet and protective attire.

Practice: Practice is wearing helmets and protective attire regularly.

Helmet: Helmet is a headgear made of a strong material which a motorcyclist wears to protect the head from injury.

Protective Attire: Any form of garment worn by motorcyclist to protect them from fatal injuries.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of Study

The rate of motorcycle accidents which forms a fatal category of motor traffic accidents in the world is very alarming and Ghana is no exception. Day in day out, the risk of passengers; pedestrians and motorcyclists getting involved in accidents increases making them the most vulnerable road users. Survey and observational studies have shown that, motorcyclists especially have the poorest safety record compared to other road uses, NHTSA, (2007) states that compared to automobiles, motorcycles have a higher fatality rate per unit of distance travelled and also per vehicle mile travelled, and motorcyclists have a risk of a fatal crash of 35 times greater than a passenger car.

NHTSA, (2007) further stated in their research that, road traffic injuries are a growing and predominant issue in public health and development crisis and are predicted to increase if road safety measures are not adhered to or not addressed adequately. This unfortunately, disproportionately affects vulnerable groups of road users including motorcyclists.

In 2010 a United Nations Assembly Resolution proclaimed a decade (2011 to 2020) of action for road safety. The UN anticipated that its programmes and actions during the period would save millions of lives by improving the safety of roads and vehicles; enhancing the behavior of road users and improving emergency services. Before then, a study by WHO (2004) reported that, more than half of the people killed in motor accidents are young adults aged between 15 and 44 years of age. Incidentally most of them are breadwinners of their families. The road traffic

death rate by WHO region and income level showed countries with low and middle income have higher road traffic fatality rate (21.5 and 19.5 per 100,000 population respectively) than high income countries (10.3 per 100,000 population).They further reported that, road traffic injuries cost low income and middle income countries between 1% and 2% of their gross national products, WHO, (2004). This is more than the total development aid received by these countries, WHO, (2004).

Most of the road traffic accidents which occur on the roads have been greatly attributed to the users of the road not adhering to the rules and regulations governing the road and safety measures and also due to bad roads, Astrom, et al., (2006).

According to the US department of transportation's national highway traffic safety administration, motorcyclists are 35 times more likely to experience a deadly accident on the road than those in passenger cars. For instance, in 2006, 88,000 motorcyclists were injured in highway accidents alone; out of which 4,810 were killed, Deutermann, (2004).

In Thailand, for instance 80% of the 20million registered motorized vehicles are motorcycles. When helmet use was not mandatory, 90% of deaths resulting from traffic injuries were motorcycle users whilst almost all were due to head injuries. Legislation passed and supported by enforcement and publicity programs led to a 40% drop in motorcycle deaths within 2 years, WHO, (2004).

A study by Moskal et al., (2008) observed that helmet use among motorcyclists significantly decreased the risk of head and facial injuries. It concluded that helmets protect users of motorized two-wheel vehicles against head and facial injury without increasing the risk of neck or cervical spine injury.

The researcher managed to obtain statistics from the Motor Traffic and Transport Unit to help understand the trend in motorcycle accidents in the country. From the statistics obtained, it was shown that, a total of 2,440 motorcycle injuries were recorded nationwide and Accra recorded the highest with 747 cases and this was for the year 2012, MTTU (2012).

Road safety education is said to be a potential tool for the reduction of motorcycle accidents. This study would determine road user's level of knowledge of road safety measures in preventing road traffic injuries among motorcyclists. It examines the attitude of motorcyclists towards road safety measures. It further determines the practice of road safety measures that seek to prevent accidents among motorcyclists. Preventable measures could be employed to reduce or prevent road traffic injuries especially that concerning motorcycles since they stand to be more at risk than other road users. Thus, findings from the study could be used to address the need for improvement in road planning and management, standards for road construction, control of over speeding and drunk driving, the use of seat belts and the wearing of helmets as well as motorcyclists adhering to the traffic light rules could all be enforced in the intervention strategies on road safety intervention in Ghana.

1.2 Statement of the Problem

A significant proportion of overall injury morbidity and mortality have been greatly attributed to road traffic injuries, Chalya et al, (2010). According to their study, one of the emerging major public health problems in developing countries is motorcycle injuries. However, this has been neglected over the years thereby making it a common cause of road traffic injuries. Another study by Peden, (2004) shows that, 90% of these mortalities tend to occur in low-income and middle-income countries. Ghana happens to be a middle-income country and records show that,

the highest number of death in the country are due to road traffic accidents with most resulting in head injuries, NRSC, (2010).

In a related development, various findings have shown that, motorcycle users stand to be the most vulnerable on the road as they are more exposed to this risk than other road users. Riding motorized two-wheeled vehicles carries a higher risk of being involved in a fatal traffic accident than from using any other common mode of transport. For instance, a study conducted by Koornstra et al., (2003) estimated that, per100 million person travelling hours, 440 motorized two-wheeled vehicle rider fatalities occur, compared to 75 and 25 fatalities for cyclists and car drivers, respectively. Therefore, in order to reduce road traffic injuries, it is most important to target this group of road users.

Recently, the use of motorcycle as commercial transport is on the increase in most urban areas in Ghana. This development is attributable to limited reliable commercial transport and inadequate infrastructure. These motorcycles are used by many on commercial basis for transportation of passengers and they have an advantage of evading traffic jams, passing along narrow paths and relatively affordable costs as compared to motor vehicle taxis. It has thus become problematic and warrants attention for a study.

Most often than not, in the quest of commercial and private motorcyclists maximizing their daily earnings and also being in a hurry, they often drive against traffic and jump traffic lights, a situation that exposes them to accidents.

However, the rise in mortality rate due to road traffic injuries among motorcyclists in the country negates the importance of the motorcyclists in the socio-economic development of the country but this could for instance be drastically reversed by improving and enforcing the rules and regulations governing the road and safety measures. Motorcyclists could be made to acquire the

right knowledge, develop the right attitude as well as practice these rules and regulations. A study by Keng et al., (2005) reported on the effectiveness of motorcyclists abiding by the rules and regulations of the road and safety measures on reducing the mortality from head injury. Motorcycles, although a swift means of transportation in the face of incessant transport snarls, are more vulnerable and more dangerous forms of travel than cars because motorcycles are unenclosed, leaving riders vulnerable to crashes.

It is the interest of this study to identify the motorcyclists' knowledge, attitude and their practice of the road safety measures.

1.3 OBJECTIVES

1.3.1 General

To determine the level of knowledge and practice concerning road safety measures in preventing road traffic injuries.

1.3.2 Specific Objectives

1. To determine the level of knowledge of road safety measures in the prevention of road traffic injuries among motorcyclists.

2. To examine the attitude of motorcyclist towards road safety measures in preventing accidents.

3. To determine the practice of road safety measures that seeks to prevent accidents among motorcyclists.

1.4 Research questions

This section gives an overview of the questions that the study hopes to answer.

1. What is the level of knowledge of motorcyclists on road safety?
2. What is their attitude in preventing road traffic accidents?
3. What is the extent to which they adhere to road safety measures?

1.5 Conceptual Framework

The conceptual framework used for this study draws from the Health Belief Model developed in the 1950s by researchers at the U.S Public Health Service (Hochbaum, Rosenstock and Kegels).

1.6.1 Health Belief Model (HBM)

This model attempts to explain and predict a given health-related behavior from certain patterns of belief about the recommended health behavior and the health problems that the behavior was intended to prevent or control, Breslow, (2002).The model takes into consideration a person's motivation to undertake health behavior and suggest that, it can be divided into three main categories: individual perceptions, modifying behavior, and likelihood of action, Breslow, (2002).Furthermore, the model showed that, individual perceptions are factors that affect the

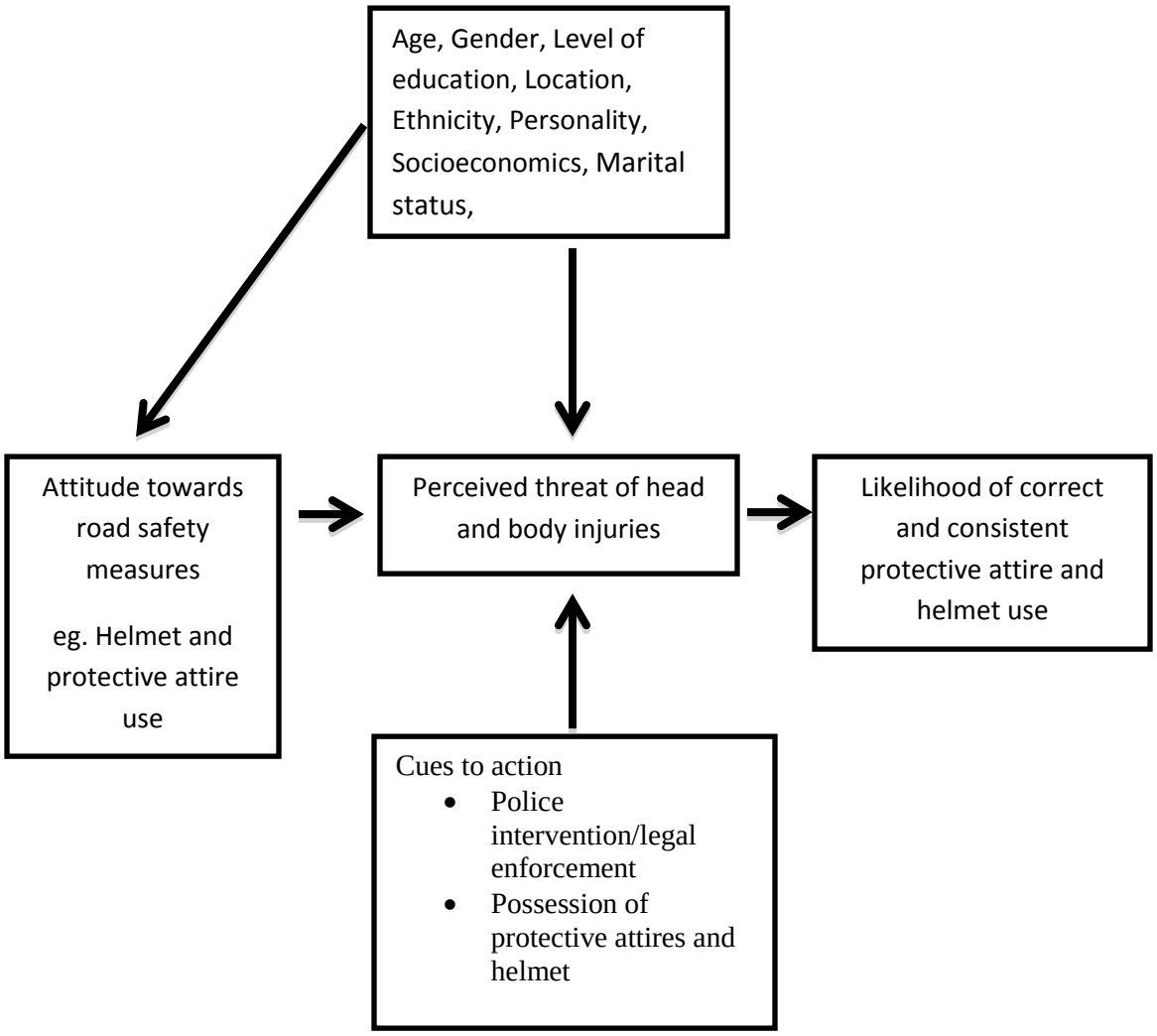
perception of illness or disease; they deal with the importance of health to the individual, perceived susceptibility, and perceived severity. Modifying factors include demographic variables, perceived threat, and cues to action.

The model concluded that, the likelihood of action discusses factors in probability of appropriate health behavior; it is the likelihood of taking the recommended preventive health action, Breslow, (2002).

A study by Breslow, (2002) reported that, the combination of these factors causes a response that often manifests into action, provided it is accompanied by a rational alternative course of action.

Figure 1: Diagrammatic Representation of the Health Belief Model (HBM).

INDIVIDUAL PERCEPTIONS MODIFYING FACTORS LIKELIHOOD OF ACTION



Source: Glanz et al, 2002, p. 52

1.6.2 The Application of the HBM to this study

Concepts of health belief model were adapted for this study. The perceived susceptibility to motorcycle related injury among other things influences the attitude of motorcyclists towards road safety measures which includes the wearing of helmet, protective attires and obeying the regulations. However, the use or non-use of protective attires and helmets as well as adherence to the rules and regulations governing the road and safety measures are influenced by modifying factors such as the level of education, age, gender and location of the people. Adherence to the road safety measures (possible behavior to manifest/likelihood of action) which reflects on the practices of these measures will be ascertained through interview and observation. There is the likelihood that protective attire, helmet usage and adherence to road safety measures would depend on one's attitude about the protective nature of helmet and protective attires against injury secondary to one's perception of being susceptible to injury during an accident; modifying factors, attitude towards the road safety measures and ability to develop a positive attitude of these safety measures.

1.7 Justification

Accra is an urban and cosmopolitan region and traffic is more complicated and intense than the rural areas, for this reason, one needs a high level of alertness on the road because of the number of people and vehicles using the roads. Besides, there is the need for literature to analyze the problem and offer suggestions to assist policy makers. Thus, the need for this study. The findings of this study would provide crucial information, contribute to knowledge and guide policy makers in drawing favorable prevention programs and taking crucial decisions to reduce the prevalence of road traffic injuries by motorcyclists.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews related studies on the knowledge and practices of road safety measures in preventing road traffic injuries among motorcycles. This section is organized thematically. The following themes are covered, knowledge on road safety measures, attitudes towards road safety measures and prevention of road traffic injuries.

The rate of increased frequency of motorcycle related injuries in Ghana have been largely attributed to bad road networks, careless road use by motorcyclists, poor knowledge of and non-compliance with traffic codes and safety measures such as the use of well-fitting crash helmets, inadequate formal training in the use of the motorcycle, and high level of illiteracy, NHTSA's (2007).

Road traffic accidents and injuries have largely depended on three factors: human, vehicle and road situation with most focus on human. Human behavior has been key to solving most road traffic issues, therefore the measures aimed at prevention and decrease of road traffic accidents and injuries should be based on valid information and data on these factors. A study by Demberelsuren and Erdenechimeg, (2010) on the topic "*Prevention and Control of NCDs and Injuries"*, reported on these factors suggesting that, the information database can be divided into four parts: road and traffic data, vehicle data, road traffic injury and mortality data and data on knowledge, attitudes and practices towards traffic safety among people participating in traffic movement. They however concluded convincingly that there is a lack of data on road traffic injury risk factors; especially there is limited data on the behavior of people involved in traffic.

Road traffic injuries form a significant amount of injury related mortality and morbidity around the world with a study from Peden et al., (2004) estimating that 1.2 million people get killed and about 20–50 million get injured on the roads annually. They further revealed that, majority of these injuries and accidents do occur in Low- and middle-income countries with nearly 85% of the global burden of road traffic injuries is accounted for by these countries.

Further studies from Peden et al., (2004) and WHO, (2010) showed that, the road traffic injury mortality rate is highest in Africa (28.3 per 100,000 population when corrected for underreporting, compared with 11.0 in Europe). The rate of road traffic deaths in Sub-Saharan Africa is 40% higher than that in all other low- and middle-income countries (28.3 compared to 20.2 per 100,000) and 50% higher than the world level (28.3 compared to 19.0 deaths per 100,000 population) making traffic injuries the 10th leading cause of death in the region, WHO, (2010).

Motorcycles have increasingly become a popular means of transport in low and middle-income countries and this is also the case in Ghana, WHO, (2006). This is partly because motorcycles are relatively cheaper than other motor vehicles in terms of purchase and maintenance costs moreover, it is relatively easier to operate in terms of road use. Increasingly, motorcyclists are seen easily evading traffic jams, dropping off their passengers and making quick money through faster routine compared to other forms of transportation and this is making them an attractive means of transport in Ghana. Elsewhere in Nigeria, a study by Solagberu et al., (2006), showed that the business of motorcycle taxis was becoming an increasingly popular means of employment and one can earn enough amount of money for daily living out of this business. Interestingly, Nigeria's geographic and historical relations make this study relevant to this work.

Although this study is not a comparative one, Nigeria's experience as reflected in the study offers ample insight into the problem of motorcyclists in the West African Sub-Region.

Despite the advantages that motorcycles have, motorcyclists form a large proportion of those injured or killed on the roads. This is because they often share the traffic space with fast-moving, heavier and bigger cars, buses and trucks, and also because they are less visible. In addition, their lack of physical protection makes their passengers vulnerable to injures whenever they get involved in a collision (WHO, 2006). The problem is further compounded by the fact that motorcycles have much higher risks of being involved in crashes involving fatalities than other vehicles, Deutermann, (2004). Lack of safe driving concepts is another factor that increases the vulnerability of the motorcyclists in road traffic accidents. In a study done in Taiwan, Chang &Yeh, (2006) it has been observed that almost all motorcycle riders (engine capacity lower than 250cc) were self-taught with a lack of appropriate driving education or training and many accumulated their experiences via trial-and-error process.

2.2 Knowledge on Road Safety Measures

Knowledge on road safety measures in the country plays a vital role in efforts aimed at preventing road traffic injuries among road users especially motorcyclists. This study seeks to determine the level of knowledge among the motorcyclists with regards to road safety measures that seek to keep them safe from accidents.

A related study conducted in Nigeria by Adogu and Ilika, (2006) revealed that, two thirds of the respondents included in their study had a very poor knowledge of road traffic codes and safety giving the indication that, most motorcyclists do not undergo any form of formal training where they are given the basics or fundamental principles underlying the road and safety measures.

This is highly the case in Ghana as there are no motorcycling schools like we have for vehicles where people will be taught the road and safety measures.

Another related study Demberelsuren, (2010) also showed a similar trend. The study considered improvement of road quality and conditions, illumination, crossroads and pathways as well as building bicycle roads as the most important measures to improve the traffic safety situation. The results of the study showed that the most common violation among pedestrians is crossing a road at non-designated places. In the case of drivers the most common violation was crossing a red light.20.5% of pedestrians of the study had been involved in a traffic accident. Out of them, 76% were younger than 35 years old. Furthermore the study found that, the knowledge of pedestrians and drivers about traffic rules is not sufficient, regardless of age and gender, but increases with increased education level among all respondents and with age among women. During testing of the knowledge of traffic rules among participating drivers 72% scored satisfactory and 13% were evaluated as having insufficient knowledge. The majority of pedestrians considered the violation of traffic rules and crossing a road at non-designated places as an acceptable thing to do, whereas the majority of drivers are willing to behave well using regularly seat belts, observing rules of traffic lights and avoiding drunk driving and speeding.

Another literature considered in this study was an article by Sufiyan and Ahmed (2013) on the topic Knowledge, attitude and compliance with safety protective devices among commercial motorcyclists in Tudun-Wada Zaria, North-Western Nigeria. This study was conducted among 250 commercial motorcyclists who were randomly selected using multistage sampling technique. Their findings revealed that, a significant proportion of the respondents (88.0%) were aware of safety protective devices but however, majority of them (89.2%) have poor knowledge of what a safety protective device is. The only safety protective devices known by the respondents were;

crash helmet and visibility jacket constituting 92.7% and 22.7% respectively. This implies that, most of them had knowledge of the safety measures in relation to helmet and protective attire use.

The findings also showed a significant statistical relationship between educational level of respondents and knowledge of safety protective device (χ^2 =5.143; df = 1; $p<0.05$) those with higher level of education were found to be more knowledgeable. This implies that, a person's educational level does have an effect on the knowledge towards road safety measures among motorcyclists and thus suggested education be given to all motorcyclists.

2.3 Attitude towards road safety measure by motorcyclists

One's attitude towards another; object; or idea can be positive or negative or both. According to Brehm et al., (2002), attitude can be seen to be an evaluative reaction to a concept such as road safety measures. They also noted that, attitudes towards a concept may be mixed and not necessarily be consistent within the individual.

Riding safely is held in high regard among dedicated motorcyclists. However, the enjoyment of taking risks and the enjoyment of speed, in particular, are higher for motorcyclists than for car drivers. That notwithstanding, although speed violations are a significant predictor of at-blame accidents, the biggest predictor of crash involvement among motorcyclists is not attributed to non-deliberate errors but rather than violations of the safety measures. A study by Crundall et al, (2008) on "*Car drivers' attitudes towards motorcyclists"* reported on negative attitudes of car drivers towards motorcyclists on the road suggesting that, most of these drivers are the least experienced ones. The further reported that, men have greater empathy for motorcyclists on the

whole, but actually show less empathy in their behaviour, for example female drivers give motorcyclists more room when overtaking or when entering at intersections and junctions. Greatest empathy comes from those who are motorcyclists themselves or know motorcyclists. Car drivers who are motorcyclists or have motorcycling relatives are less likely to collide with a motorcycle.

The non-use of protective attires and helmets have been associated with the notion that use of helmet increases rather than decreases the risk of an injury by reducing field of vision as well as the attires creating discomfort. A study by Dandona, (2005), stated other reasons for not wearing helmets and protective attires by motorcyclists. According to the study, the idea that helmets are necessary for the drivers of powerful engine motorcycles that travel in a high speed and not necessary for moped and scooter drivers; inconvenience of carrying the helmet as it could be stolen if left on the vehicle, and the inconvenience of removing it now and then for taking calls on the hand-held mobile phones while driving lack of comfort, negative social perception and inconvenience of helmets particularly in relation to storage of helmets when not riding and being a good driver as an excuse of not wearing helmet.

Findings by Sufiyan and Ahmed (2013) among 250 commercial motorcyclists who were randomly selected using the multistage technique in Tudun-Wada Zaria, North-Western Nigeria revealed that, in terms of willingness to wear safety protective devices by motorcyclists while riding was very high as confirmed by 84.4% of the motorcyclists involved in this study. The findings also revealed that, majority of these motorcyclists representing 75.6% were eager to advice their friends to use safety protective devices while riding motorcycles.

However, they findings showed that, most of these motorcyclists were not willing to use their own money to buy protective devices nor will wish to be forced by the government authorities to

use safety protective devices. This however, gives the indication that, if given these protective devices free of charge by the government or their friends or unions, they were willing to use them but they were not willing to buy it themselves with the belief that, it was quite expensive.

2.4 Preventing Road Traffic Injuries

Several attempts have been carried out in the quest of reducing and preventing road traffic accidents and injuries in Ghana. Laws and regulations have been passed and implemented by the government of Ghana but the enforcement of these laws by both governing body and the officers in charge of enforcing these laws have not been rather poor as we see how indiscipline motorcyclists are on the roads especially in obeying the rules of traffic.

In light of the above observations, the health sector in collaboration with the transport, finance, justice and environment have tried to play a distinctive and more active role along with other sectors involved in preventing road accidents. Their main goal is how to effectively bring about a reduction in road traffic injuries in Ghana. To achieve this, they adopted an effective preventive strategy through multi-sectoral approaches.

A study by Peden et al., (2004) showed that, the development of a publication on the European public health perspective on preventing road traffic injuries has been inspired by the preparation of the *World report on road traffic injury prevention* published by WHO and the World Bank for World Health Day 2004. As such, this publication would be best read in conjunction with the *World report on road traffic injury prevention*.

Developing an European publication that capitalizes on the vast amount of evidence brought together in the *World report on road traffic injury prevention* and complements. It was considered an excellent opportunity to bring added value by:

1. Raising awareness among European citizens and enhancing commitments among European policymakers at various levels of government and decision-makers in the private sector to further their efforts towards preventing road traffic injuries;
2. Highlighting the burden of disease from road traffic injury in the European Region
3. Describing policy approaches and options that have been successful at reducing the occurrence and severity of road traffic injuries, building on the experience of a number of European Member States and making these experiences broadly available
4. Describing comprehensive, multi-sectoral and evidence-based road safety strategies within the framework of sustainable transport and taking into account the broader European policy framework
5. Highlighting the role the health sector can play in preventing and treating road traffic injuries, including by mainstreaming this issue into the health agenda
6. Making recommendations for specific actions that could be taken forward to improve road safety in the European Region, with a special focus on the role of the health sector.

Another literature reviewed in this study was that of Emmanuel GeofreyMwakapasa (2011)on the topic Attitude towards and practice of helmet use among commercial motorcyclists in Dar es Salaam region, Tanzania. His study also looked at the location of the motorcyclists and compared which of them tend to practice helmet wearing more. His findings revealed that, the location to where the motorcyclists work had no significant influence on helmet wearing, in both interview and observation ($p = 0.114$ and $p= 0.103$ respectively). However more commercial motorcyclists, 85.6% (n=101) in the urban areas reported to wear helmet than their peri-urban counterparts, 78.1%, (n=121). This finding

concurs with observation results whereby 58.9%, (n=63) in the urban areas put on helmet than their peri-urban counterparts 48.8%, (n=81). This is in line with the findings of other author whereby it has been shown that more people in the urban areas tend to put on helmet than those in per-urban areas (Xuequn et al., 2010). However, according to the current study, the location of motorcyclist (urban vs. peri-urban) during both interview and observations had no significant influence on helmet wearing (p= 0.114 and p= 0.103 respectively).

His study further looked that factors that could predict the wearing of helmets among motorcyclist. He observed that, the level of education is a significant predictor of helmet wearing (p=0.048). With reference to those who never gone to school, and by controlling for other factors in the multiple regression models, those who had primary education were more likely to wear helmet than those who never gone to school (AOR=6.146; p=0.019; 95% CI=1.345-28.097).

2.4 Economic implications

Studies have shown that, road traffic accidents have significant burden and effect on the economy of Ghana, Kudebong et al, (2011). According to their study, Ghana spends about US$ 1.2 million on motorcycle related problems annually. Out of the US$1.2 million, 52% were accident-related costs (that is, property damage and administration). Similarly 48% was casualty-related costs (that is, medical costs, out-of-pocket expenses, lost labour outputs, intangible costs and funeral expenses).Furthermore; their study showed that, most of the victims of these motorcycle accidents were males in their productive ages. Unfortunately, only a third of the

victims are insured. Their study also showed that, most of the riders representing 71% did not have or were in possession of fake driving license and usually avoided the police. Main motorcycle injuries were head injuries, fractures, lacerations and contusions. Majority of the accidents were caused by lack of formal motorcycle riding training, abuse of alcohol, unrestrained animals and donkey carts.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter gives an overview of the research methodology employed in this study. It involves, the type of study used, location/area, variables, population, sampling technique and method, data collection methods and tools, quality control, data processing and analysis, ethical consideration/issues and finally pilot of the study.

3.2 Type of Study

The cross-sectional quantitative design was employed for this study (Motorcyclists Knowledge, Attitude and Practice of road safety measures in preventing road traffic injuries). This study involved interviewing and observing the commercial motorcyclists right at their selected parking points.

3.3 Study Location/Area

Accra is Ghana's capital since 1877. Its population currently is about 1,801,606with an annual growth rate of 4.3% (National Population Census 2002). Accra was derived from Akan "Nkran" meaning "an army of ants". Dr Kwame Nkrumah, who was Ghana's first president, declared Accra a city of Ghana and the seat of government in 1961. Accra occupies a total land surface of 3,245 square kilometers or 1.4% of the total land area in Ghana and it is the smallest region of the 10 administrative regions of Ghana in terms of size. The Region is bordered on the north by

the Eastern Region, on the east by the Volta Region, on the south by the Gulf of Guinea and on the west by Central region (ama.ghanadistricts.gov.gh)

Accra's outlet and inlet cover sea, air and land including rail and motorways. The growth and development of Accra could be attributed to the building of 3 European fortes as trading posts. These were, the Ussher Fort, James Fort and the Christiansburg Castle which was renovated later to befit the seat of the Ghana Government and renamed the Castle.

Korle-Bu Teaching Hospital is the premier and leading national referral hospital in the country and it is located between Korle-Gonno and Latebiokoshie in Accra.

Given such a background, a study of the metropolis was not feasible in view of time constraints and resources. I therefore had to limit my study to Korle-Gonno, Wato and Agbogbloshi. These three suburbs are largely populated and most of their road networks are bad. Also because of the traffic situation, most people prefer to use the motorcycles as their source of transportation because it is more convenient and less time consuming. The major markets are also located there which makes these areas a major trading area, hence the need for public transport.

3.4 Variables of Interest

Knowledge, attitude and practice of Road safety practices are the concepts under consideration.

Independent variables: Motorcyclists Knowledge, Attitude and Demographic Factors of Motorcyclists.

Dependent variable: Practices of Road Safety Measures.

3.5 Study Population

The population for this study was motorcyclists from Korle-Gonno, Agbogbloshi and Wato (central Accra). These motorcyclists operate from various allocated stations within these areas and are seen with their motorcycles in small groups of about twenty.

3.6 Sampling

3.6.1 Sampling size:

An adapted prevalence of 23.1% based on the findings of Hung, Stevenson and Ivers (2008) titled "Barriers to and factors associated with observed motorcycle use in Vietnam" was used to calculate the sample size because there was limited resource of this type of study in Ghana

The formula for the sample size calculation is as follows, kirkwood, (2003)
From the population, two hundred and seventy three motorcyclists were sampled for the study.

$$n = \frac{Z^2 P (1-P)}{d^2}$$

n=sample size

Z= Z statistic for a confidence level of 95%

P=prevalence of 23.1% based on the level of practice of road safety measures by Hung, Stevenson and Ivers (2008).

d=precision of 5%

Sampling size=273

3.6.2 Sampling method

The adopted sampling technique that was used is purposive sampling. The respondents were selected by the use of the snowball technique, a non probability sampling technique that is used by researchers to identify potential subjects in research where respondents are difficult to locate or limited to a very small subgroup of the population. This type of sampling method works like a chain referral. The researcher asks for assistance from the respondents after observing the initial respondents to help identify people with a similar trait of interest. The researcher continues in the same way until the required number of subjects is obtained. I applied this technique to aid in my data collection by first approaching one motorcyclist who I explained my mission to and he in-turn introduced me to several of his colleagues. This helped with dissemination of information to other riders.

By obtaining subjects for my study, I opted to use snowballing sampling since it was difficult to reach the commercial motorcyclists and using one of the motorcyclists initially will thus lead me to more cyclists for my study. Each selected participant was briefed on the purpose of the study to gain their consent. The process was also cheap, simple and cost-efficient.

3.7 Data Collection Technique

Data collection was done by administering a questionnaire face-to-face and a checklist was used to observe for actual practice by the commercial motorcyclists from their selected parking points.

An observational study was also conducted to monitor the attitude and practices of these motorcyclists as they go about their daily activities. The observation was done prior to

administering the questionnaires. An introductory letter was obtained from the School of Public Health, University of Ghana to the various groups to obtain permission to carry out the study. Each selected participant was briefed on the purpose of the study to gain their consent. Pretesting was done at James Town to identify unforeseen challenges and also to refine questions that respondents needed clarification on or based on their feedback.

However, trying to convince them to participate initially was difficult since they claimed they were arrested each time they spoke about their work and even gave an instance where after speaking to a gentleman who claimed to be interested in their work, resulted in the arrest and incarceration of some of their colleagues who could not pay the imposed fines given by the judge after they were sent to court.

I thus, had to reassure them that this exercise was purely academic. After several hours of trying to convince them on the first day, I was given the name and telephone number of their president. I immediately contacted him and booked an appointment to personally meet him and he in-turn introduced me to the chairman of their association. The chairman was then tasked to take me round and introduce me to the heads of the various stations as well as the motorcyclists. The process of collecting data took a period of two weeks. A total of seven research assistants participated in the collection of the data. There was debriefing after each day's work as well.

3.8 Quality Control

To achieve quality data collection and accuracy, research assistants were educated on the rational for the exercise and the need to abstain from influencing respondent's answers. They were also

trained to ensure uniformity. Supervision by the investigator was done effectively to enhance implementation of the methodology. The supervisor observed the research assistants in their initial administration of the questionnaire to the respondents. Debriefing was done also after each day's work.

3.9 Data Processing and Analysis

The data collected from the field was analyzed using Statistical Package for the Social Sciences, version 16, (SPSS 16) (Argyrous, 1948). This software was also used for the data entry and data cleaning. Some of the analysis performed included, frequency and chi-square. Results were presented in tables and chart formats.

3.10 Ethical Consideration/Issues

Ethical approval for the study was obtained from the Ghana Health Service Ethical Review Committee. Clearance for the study was obtained from the University of Ghana. Participants were thoroughly informed about the study and their written consent was also sought. A consent form was signed upon agreement of participation in the study. Confidentiality was also guaranteed through participants' "state of anonymity". Participant's rights such as freedom to withdraw from the study, freedom from not answering some questions and other rights were also addressed and observed. Privacy was given to the respondents because of current threats by the police to arrest and discourage them from using their motorcycles for commercial purposes. The potential risk was fear of prosecution and fear of taxation by agreeing to participate. I went all out to assure the motorcyclists that my work is strictly for academic purposes and there was no

police involvement and in some cases, I further signed an undertaking to back my claim. The benefit for the study was obtained from the results of the study which would be used by policy makers and healthcare providers as well as other stakeholders in designing interventions on safety on our roads. It will also help in further research.

Data storage and usage was done strictly under lock and key and data will be kept for a year. The researcher would be the only one to have access to the data.

The exercise is voluntary and therefore there was no compensation for respondents.

The project was self financed. Currently I am not engaged in any other research or academic pursuit. I am also not employed or engaged in any internship to necessitate conflict of interest with regard to this study.

3.11 Pretest or Pilot Study

A pilot study was conducted to pre-test the questionnaire and the accessibility of the target population. Twenty motorcyclists were randomly selected from a commercial motorcycle parking points at James Town in the Greater Accra Region for the pilot study and they were different from the ones to be selected for the study. It was important to conduct a pretest as it is a very crucial element of a good study design and also might give advance warning about why the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter gives an overview of the findings of the study. A total of 273 motorcyclists were included in this study and each was presented with series of questions to respond to. Their responses were used to realize the objectives of the study. This chapter is sub-divided into five sections namely, demographic characteristics, knowledge on road safety measures, attitude towards helmet and protective attire use, practice of helmet and protective attire use. Statistical Package for the Social Sciences (SPSS 16) was used to analyze the data. Results were displayed in table formats.

4.2 Demographic Characteristics

This section gives a brief overview of the socio-economic background of the motorcyclists. This includes their gender, age, marital status, educational level and their religious affiliations.

With the kind of risks involved in riding motorcycles around and on our roads, it takes the brave hearted and adventurous people to get involved. The findings revealed that, about 99% of motorcyclists used for commercial purposes were by men which give the indication that, it was rare to find women riding motorcycles around. Therefore, all the people included in this study were men.

Table 1: Socio – Demographic Data

Age	**Frequency**	**Percentage**
18-25 years	89	32.6
26-35 years	152	55.7
36-45 years	30	11.0
46-55 years	2	0.7
Marital Status		
Single	105	38.5
Married or living together	164	60.1
Divorced/Separated	4	1.5
Level of Education		
Pre-School	45	16.5
Primary/JSS	140	51.3
Secondary/SSS/SHS/Tech/Voc	45	16.5
No response	43	15.8
Religious Affiliation		
Christian	86	31.5
Islam	184	67.4
Rastafarian	3	1.1
Member of Association		
Yes	84	30.8
No	163	59.7
No response	26	9.5

As observed in table 1, majority of them were between the ages of 26-35 years as they represented 55.7%, while 32.6% were between the ages of 18-25 years. This clearly gives the

indication that; most of these motorcyclists were in their youth. It was also observed that, majority of these motorcyclists representing 60.1% were married or, they were cohabiting with their wives. Probing them also revealed that, most of them had not performed any kind of customary marriage rites for their "wives". 38.5% of them said they were single with only 1.5% saying they were either divorced or separated

The study sought to investigate the educational background of these motorcyclists as it was important in determining their level of knowledge and understanding of the road and safety measures. As observed on table 1, majority of them had attained primary/JSS level of education as their highest educational level. This gives the indication that, at least most of them had the basic education to understand the safety measures governing road use. The table also showed that, 16.5% of them said they had pre-school and secondary/SSS/Tech/Vocational education respectively as their highest educational level with 15.8% not responding at all. Furthermore, when asked to state their religious background, most of them said they belonged to the Islamic religion as this represented 67.4% while those who belonged to the Christianity religion also represented 31.5% with only 1.1% said they believe in Rastafarianism

Finally, it was observed from their response that, most of them responded no as they represented 59.7%. Interaction with them revealed that, since the use of motorcycles for commercial use was an illegal means of transport in the country, they did not associate themselves to any kind of association. However, some of them readily acknowledged that, they belonged to associations but these associations were not recognized in the country due to its illegality. They represented 30.8%. Bimbila station, Motorcycle association, Netrunia association and Okada association were the names of the association these motorcyclists belonged to. Those who did not respond represented 9.5%.

4.3 Knowledge of Road Safety Measures

Table 2: Knowledge of Road Safety Measures

Length of riding a motorcycle	**Frequency**	**Percentage**
1-3years	171	62.6
4-6 years	51	18.7
7+ years	51	18.7
Knowledge of practices that help ensure road safety		
Yes	255	93.4
No	18	6.6
Source of Knowledge		
GPRTU	15	5.5
Radio	36	13.2
TV/Radio	214	78.4
No response	8	2.9
Make calls while riding		
Yes	50	18.3
No	223	81.7
Riding license		
Yes	153	56%
No	120	44%
Motorcycle Insured		
Yes	193	70.7
No	80	29.3

The findings revealed that, majority of these motorcyclists representing over 60% have been riding their motorcycles between 1-3 years, while 18.7% of them said, they have been riding between 4-6 years and 7+or more years respectively as observed on table 4. This information gives the indication that, at least these motorcyclists have been riding for quite a long time, enough for them to know about the rules and regulations governing the road safety measures.

When asked if they know of any practices that help ensure road safety, majority of them representing 93.4% responded yes whiles only 6.6% responded no. This gives the indication that, at least most of them were fully aware of the road safety practices. A follow-up question requested those with knowledge on the practices of road safety to state their source of information. As observed on table 5, most of them representing 78.4% cited TV and Radio as their main source of information while 5.5% cited GPRTU as their source of information with 13.2% citing RADIO as their only source of information.

The motorcyclists were further asked to state some of the road practices that they believed could lead to road accidents. Some of the practices mentioned by them included; absent mindedness and receiving calls whiles riding, consumption of alcohol and riding, overconfidence, over speeding, break failure, careless riding, ignoring traffic light, inexperience, taking of drugs, overtaking on the roads, lack of motorcycle maintenance and also wrong parking on the roads. Other practices highlighted included, overloading, running away from police, poor eyesight and wet roads.

It was again revealed that, 81.7% of them said that, they do not make calls when riding. This implies that, most of them were fully aware of the dangers involved in making calls while riding as such do not engage in that while at work. However, there were some who responded yes to

indicate that, they received phone calls whiles riding their motorcyclists and they also represented 18.3%. This give the indication that, even though these group of motorcyclists were fully aware of the dangers it poses to them when making calls and riding, they totally ignored the rules and regulations as well as regard for their lives.

The study further sought to find out whether these riders had any form of riding license which permits them to be riding their motorcyclists on the roads. The findings revealed that, only a little above 50% of these motorcyclists did have riding license while about 44% of them said they did not have riding license.

It was also revealed that most of the motorcycles used by the motorcyclists were insured as confirmed by 70.7% of the respondents with only 29.3% saying their motorcycles were not insured.

Finally, the findings showed that majority of them representing 76.2% did not have First Aid kits readily available in case of any form of accident. Only a few of them representing 23.8% said they kept first Aid kit on their motorcycles.

4.4 Attitude towards Helmet and Protective Attire Use

Questions posed to respondents were divided into two sections namely positive attitude towards helmet and protective attire use and negative attitude towards helmet and protective attire use.

Table 3a: Positive Attitude towards Road Safety

Statement	Low	Medium	High	Aggregate response
Motorcyclist should wear helmet and use protective attire	0%	0%	100%	Strongly agree
Helmet is important for rider's safety	0%	0%	100%	Strongly agree
Protective attire is important for rider's safety	1.5%	2.2%	96.3%	Strongly agree
Wearing protective attire is more needed in urban than rural areas	64.1%	21.6%	14.3%	Disagree
Wearing helmet is important just to avoid police fines	83.5%	4.0%	12.1%	Disagree

From table 3a, it can be concluded that, there was a general positive attitude towards the use of helmets and protective attire use. This was confirmed by the majority who strongly agreed and agreed to claims like, motorcyclist should wear helmet and use protective attire stressing on the point that, helmet use is important for rider's safety. They however also strongly agreed to the claims that, helmet and protective attires are important for riders' safety but remained neutral to the claim that, wearing protective attire is more needed in urban than rural areas. This however signifies the fact that, they acknowledge the importance of wearing these helmets and protective attires and not only needed in specific places.

Table 3b: Negative Attitude towards Road Safety

Statement	Low	Medium	High	Aggregate response
Helmet is not necessary for passengers	75%	3.3%	21.7%	Disagree
Protective attire is not necessary for passengers	76.5%	6.6%	16.9%	Disagree
Wearing protective attire and helmets is uncomfortable	71.1%	8.8%	20.2%	Disagree
Wearing a helmet reduces peripheral vision	82%	5.1%	12.9%	Disagree
Wearing protective attire is not necessary during the day time than night time	75.1%	12.5%	12.4%	Disagree
Wearing helmet is not necessary during the day time than night time	74.4%	19.4%	6.2%	Disagree
There is no need for an experienced rider to use protective attire and helmets	90.4%	2.9%	6.6%	Strongly Disagree
Protective attire use is not important when there are no police around	92.7%	3.3%	4%	Disagree
Helmet is not important when there is no police around	91.6%	4%	4.4%	Strongly Disagree
Wearing a helmet is not necessary when riding a short trip (less than 1km)	82.8%	6.2%	11%	Strongly Disagree
Wearing a helmet does not reduce the severity of head injury in a crash	98.5%	0%	1.4%	Strongly Disagree
Wearing helmet is more necessary when riding on the highways than small roads	63.7%	7.7%	28%	Strongly Disagree

They were further subjected to series of negative attitudes and also asked to respond to them using the same scale. From their responses, it was observed that, majority of them generally strongly disagreed or disagreed to all the negative claims. When posed with the claims that, wearing helmet and protective attire is uncomfortable and also wearing a helmet reduces peripheral vision, most of them representing over 80% responded disagree and strongly disagree.

4.5 Practice of Helmet and Protective Attire Use

4.5.1 Practice of Helmet Use

A third objective of the study was to investigate the extent to which motorcyclists practices these road safety measures especially in relation to wearing of helmets and protective attires. This was because, wearing of helmet and protective attires was the major practices aside obeying the rules and regulations governing the use of roads.

Interaction with them revealed that, almost all of them had their helmets as required whenever they are working on the road. This according to them was to protect their head in situations of accidents causing head injury. They represented 98.5% as observed on table. Only 0.7% of them said they do not have helmets as such responded no while another 0.7% did not respond.

The above information gives the indication that, these respondents were fully aware of the dangers of having a head injury accident as it could lead to instant death.

Table 4: Helmet Use Among Riders

Helmet use	Frequency	Percent
Yes	269	98.5
No	2	0.7
No response	2	0.7
Often Use of Helmets		
Everyday at every trip	97	35.5
Everyday but not every trip	3	1.1
No response	173	63.4

Source: Fieldwork

A follow-up question posed to them sought to find out whether they used their helmets during their last ride. Again, it was observed that, almost all of them responded yes they did. They

represented 97.8%. There were some who responded no and they also represented only 1.5% with 0.7% not responding.

Furthermore, they were asked if they had helmets for passengers or other people they pick in their line of duty as they are also exposed to the same kind of dangers as the riders themselves. From their responses, 98.5% representing the majority responded yes with only 0.7% responding no and no responses respectively.

Interestingly enough, when asked how often they use their helmet when riding or working, majority of them representing 63.5% decided not to respond while 35.5% responding that, they wear it every day at every trip with 1.1% also responding that, they wear it every day but not on every trip as observed on table 4 above.

The analysis of the data again revealed that, there were times that, these riders do not wear their helmets. It was observed that, days like when they are at home and not working, during hot weather, when riding on a short trip, weekends and also during the night which according to them blocks their vision during riding. Nevertheless, there were those who claimed that, they never stop wearing their helmets.

4.5.2 Practice on Protective Attire Use

The purpose of the protective attire was to protect the body of the rider in situations of accidents. This is used together with the helmets to protect the entire body during accidents. Due to this, the study sought to find out whether these riders had protective attires and if so, whether they use them in their line of duty.

A Cross tabulation between "Do you have protective attire against use of protective attire" showed that, majority of them representing 60.3% claimed they had protective attire but only 91.3% of them used their protective attires as observed on table 5. The table further showed that, 39.7% of the riders do not have protective attires.

Table 5: Use of Protective Attire by Possession of Protective Attire

		Use of Protective Attire			
		Yes	No	No response	Total
Possession of protective Attire	Yes	147	14	0	161
		91.3%	8.7%	0.0%	60.3%
	No	0	103	3	106
		0.0%	97.2%	2.8%	39.7%
Total		147	117	3	267
					100.0%

Source: Fieldwork

When asked how often they wear these protective attires, 31.5% responded they never use it while 28.9% and 27.5% said they use it every day at every trip and also every day but not every trip respectively as shown on table 6.

Table 6:

Often Use of Protective Attires	**Frequency**	**Percent**
Everyday on every trip	79	28.9
Everyday but not every trip	75	27.5
Never used it	86	31.5
No response	33	12.1
Protective Attires and Helmets readily available to purchase		
Yes	213	78.0
No	54	19.8
No response	6	2.2
Total	273	100.0

Further findings also showed that, during hot weather, during weekends, when ridings for short trips (1 mile), when not working or riding, sometime during the day, and when at home were the times some of these riders claimed not to wear their protective attires but they formed the minority representing less than 40%. The majority did not respond while others said because they do not have protective attires, that question does not apply to them.

Finally, they were asked if these protective attires and helmets were readily available on the open market for them to purchase. From their responses, it can be concluded that, the attires and helmets were available for purchase as confirmed by the majority of the riders representing, 78.0%. However, there were about 19.8% of them who believed otherwise and therefore responded no. This gives the indication that, these groups of riders were not aware of the availability of the protective attires and helmets on the open market or did not know the right places to purchase them. 2.2% did not respond as shown on table 6 above.

The use of helmet does increase with the educational background of the motorcyclists with significant difference. This indicates that, at the basic level of education, respondents are able to

tell what is wrong from right. However, this was not the case in the use of protective attire as there was no significant difference with $p>0.05$.

There was no significant difference in age in relation to helmet and protective attire use among the motorcyclists with $p>0.05$. This implies that, a person's age does not influence or have an effect on whether he will use helmet or protective attire when riding.

The location of these riders showed a significance on the wearing of helmets as motorcyclists from KorleGonno exhibited a good practice of wearing helmets while riding than the other motorcyclists from the other towns. This was confirmed with $p<0.05$ as shown on the table below. However, this was not the case in relation to wearing of protective attires while riding. The findings showed that, most of the motorcyclists from the various towns did not have protective attire or even if they had, observation showed that, they were not wearing them in the course of their work.

Table 7: Socio-demographic factors associated with reported helmet wearing and protective attire use among motorcyclists.

N = 273

Background characteristics	Helmet use	p-value	Protective attire use	P-value
	YES n (%)		YES n (%)	
Age				
18-25	85(97.7)		45(52.9)	
26-35	152(100.0)		87(57.2)	
36-45	30(100.0)	**0.235**	13(46.4)	**0.404**
46-55	2(100.0)		2(100.0)	
Educational Level				
Pre-school	43 (95.6)		22(48.9)	
Primary/JSS	138(100.0)		82(60.3)	
Secondary/SSS/Tech/ Voc	45(100.0)	**0.018****	20(46.5)	**0.313**
No response	43(100.0)		23(53.5)	

P-value from $\chi 2$ test for differences in proportions

**Indicates statistical significance at 5% level.

4.6 Results from the observation checklist

There was a significant difference in the helmet use or wearing among the motorcyclists in relation to their location with $p>0.05$ using a Chi-Square test. Majority of them representing 71% were observed to wear their helmets from the various towns. However this was not the case in the wearing of protective attires where majority of them representing 71.7% were observed not wearing protective attires during their working hours as observed on table 8.

Table 8: Distribution of observed motorcyclists wearing helmet by location N = 273

	WEARING A HELMET			
	NO	YES	Total	p-value
Agbogbloshie	21(36.8%)	36(63.2%)	57(100.0%)	0.017
Korle-Gonno	1(4.3%)	22(95.7%)	23(100.0%)	
Wato	7(42.9%)	13(57.1%)	14(100.0%)	
Total	29(29.0%)	71(71.0%)	100(100.0%)	

Table 9: Distribution of observed motorcyclists wearing protective attire by location

	WEARING OF PROTECTIVE ATTIRE			
	NO	YES	Total	p-value
Agbogbloshie	39(68.4%)	18(31.6%)	57(100.0%)	0.686
Korle-Gonno	17(73.9%)	6(26.1%)	23(100.0%)	
Wato	15(84.6%)	4(15.4%)	13(100.0%)	
Total	71(71.7%)	28(28.3%)	99(100.0%)	

Further observation revealed that, for most of the riders who had their helmets on, about 98.6% of them had buckled it correctly which also indicated it was worn properly or correctly. It was also observed that, of the 28 riders who were wearing their protective attires, exactly 50% of them had worn it correctly.

68% of the motorcycles observed had 2 people including the rider on it while 31% had only 1. Finally, it was observed that, majority of them had helmets for their passengers. They represented 86%.

CHAPTER FIVE

5.0 DISCUSSION

With the aim of investigating the level of knowledge, attitude and practice of road safety measures among motorcyclists in the Accra metropolis, the study sampled a total of 273 motorcyclists and each was subjected to a series of questions and their responses were used to realize the objectives of the study.

5.1 Socio-Demographic Characteristics of the Motorcyclists

The findings revealed that, there was male predominance in motorcycling than females and this could be attributed to the high and numerous risks involved or associated with motorcycling. Therefore, all the respondents sampled were male. However, there are no cultural norms or laws forbidding women from using motorcycles in the country.

Further findings also revealed that, majority of these motorcyclists were between the ages of 26-35 years and also in their youthful and productive age group as observed on the table below.

Age	Frequency	Percentage
18-25 years	89	32.6
26-35 years	152	55.7
36-45 years	30	11.0
46-55 years	2	0.7

This finding thus confirms the findings of Oginni et al., (2005) .Their study revealed that, most of motorcycle riders are in their youth and they form the majority of the labour force or are in their productive age.

It was also observed that, majority of these motorcyclists have had some form of education whether formal or non-formal as such were able to identify some of the road safety measures they ought to follow in order to save the lives of other road users as well as their lives, thus preventing morbidity and mortality.

5.2 Knowledge of Road Safety Measures

It was further observed that, at least majority of the riders had attained primary/JHS level of education.

Educational Level	Frequency	Percentage
Pre-School	45	16.5
Primary/JSS	140	51.3
Secondary/SSS/SHS/Tech/Voc	45	16.5
No response	43	15.8

This, confirms the findings of Oginni et al (2005), conducted in Ile Ife which implies that there is the possibility that the commercial motorcyclists are informed about the hazards of motorcycling, they may have knowledge of safety protective devices and it may also be much easier to educate them on it. This also confirms the findings of Sufiyan and Ahmed (2013) on the topic Knowledge, attitude and compliance with safety protective devices among commercial

motorcyclists in Tudun-Wada Zaria, North-Western Nigeria. Their findings showed that, majority of the motorcyclists in Nigeria had at least some basic education which equips them to be able to understand the road safety measures governing the use of motorcycles on the roads.

Further analysis into whether these motorcyclists have had any form of riding lessons as in the case of driving lessons for four-wheeled vehicles revealed that, none of them had gone for any riding school rather, they had taught themselves how to ride. This confirms the findings of Chang &Yeh (2006) who in their study observed that, almost all motorcycle riders (engine capacity lower than 250cc) were self-taught with a lack of appropriate driving education or training and many accumulated their experiences via trial-and-error process.

Significantly, most of the motorcyclists had a good knowledge of the road safety measures governing the use of the road as well as protecting their lives and the lives of other road users. Apparently most of them have been riding for quite a long time and as such exhibited advanced knowledge of the rules and regulations. It was further revealed that, the media like Television and radio were their main source of information while others cited GPRTU (Ghana private road transport union) as their source of information. This implies that, the best way in Ghana to reach out to the public especially road users, educating them about the road safety measures will be through the media and more especially through radio.

Length of riding a motorcycle	Frequency	Percentage
1-3years	171	62.6
4-6 years	51	18.7
7+ years	51	18.7
Knowledge of practices that help ensure road safety		
Yes	255	93.4
No	18	6.6
Source of Knowledge		
GPRTU	15	5.5
Radio	36	13.2
TV/Radio	214	78.4
No response	8	2.9
Make calls while riding		
Yes	50	18.3
No	223	81.7

Observational study conducted revealed that, these road users do have some small devices they use to listen to news on radio in the course of their duty.

Knowledge about not making calls whiles riding, over speeding and overloading were very much exhibited by the motorcyclists. When further asked to state other knowledge of road safety measures which they believe if not adhered to could lead to accidents, some of them stated, consumption of alcohol and riding, overconfidence, over speeding, break failure, careless riding, ignoring traffic light, inexperience, taking of drugs, overtaking on the roads, lack of motorcycle

maintenance and also wrong parking on the roads. Other practices highlighted included, running away from police, poor eyesight and wet roads.

The above information gives the indication that, these motorcyclists have extensive knowledge of the road safety measures. This findings was in contradiction to the findings of Adogu and Ilika, (2006) revealed in their study that, two thirds of the respondents included in their study had a very poor knowledge of road traffic codes and safety giving the indication that, most motorcyclists do not undergo any form of formal training where they are given the basics or fundamental principles underlying the road and safety measures.

It was again revealed that, the level of education of the motorcyclists had a significant statistical relationship with their knowledge of road safety measures. This implies that educating the commercial motorcyclists will increase their knowledge on road safety measures and more especially in the use of helmet and protective attires. There is also significant statistical relationship between the duration of employment of the commercial motorcyclists and their knowledge of safety protective devices. This implies that riders who have worked for a longer duration are better informed on safety protective devices by virtue of their experience in the occupation. This finding confirms the study of Demberelsuren, (2010). According to this study, the knowledge of pedestrians and drivers about traffic rules is not sufficient, regardless of age and gender, but increases with increased education level among all respondents.

It can therefore be deduced that with the requisite knowledge of road safety measures that were exhibited by the motorcyclists as shown by their responses to the questionnaire. It therefore indicates a reduction in motorcycle accidents in Accra and possibly Nationwide. However, this is not the case as was observed by data collected from the MTTU in Accra titled "*motor accidents*

returns full year, 2012 nationwide report" which states that a total of 2,440 motorcycles were involved in road traffic accidents in Ghana and Accra recorded the highest number of 747 accidents. Subsequent reviews also shows that morbidity and mortality are increasing as a result of motorcycle accidents as shown by the reports of 2010 and 2011 "*motor accidents returns full year report"*. A total of 1,121 and 1,897 were recorded respectively with Accra again recording the highest each year with 451 and 530 accidents respectively. Road traffic injuries forms a significant amount of injury related mortality and morbidity around the world as well. According to Peden et al.,(2004) an estimated number of 1.2 million people get killed and 20-50 million get injured on the roads annually.

5.3 Attitude towards Road Safety Measures

Furthermore, investigation into their attitude towards road safety measures and the use of the roads revealed that, majority of them had a good or positive attitude as they ensured and warmly embraced the claims that, motorcyclist should wear helmet and use protective attire, helmet is important for rider's safety and protective attire is important for rider's safety while discarding the claims that, there is no need for an experienced rider to use protective attire and helmet, Wearing helmet and protective attire is uncomfortable and also wearing a helmet reduces peripheral vision. Nevertheless, they readily acknowledged the fact that, helmets could be stolen when motorcycles are parked as well as it feeling a little uncomfortable when on a speed trip. The reason that helmet use is uncomfortable corresponds to another study conducted in Iran which explains the reason for poor compliance of helmet use was that helmets were designed to

be used in temperate countries and were uncomfortable to be used in hot weather, Zargar et al., (2006).

The above information confirms the findings of Dandona, (2005), who stated other reasons for not wearing helmets and protective attires by motorcyclists. According to that study, helmets are necessary for the riders of powerful engine motorcycles that travel with high speed and however it sometimes creates inconvenience by carrying the helmet because it could be stolen if left on the vehicle.

They also exhibited a positive attitude towards the non usage of mobile phones whiles riding as majority of them, vehemently spoke against the use of mobile phone with the reason being that, it leads to absent mindedness while riding and more especially it leads to accidents. It was revealed that, investigation in relation to alcohol consumption while riding was wrong as most of them said they were against it because it also leads to accidents and moreover, they would not get passengers or customers due to intake of alcohol.

Finally, the study revealed that, majority of these motorcyclists did practice the wearing of helmet whiles riding with their reason being that, it helps prevent head injuries in situations of accidents. This implies that, they were fully aware of the imminent dangers involved when motorcyclists do not wear their helmets when riding. It was also revealed observationally that, most of these motorcyclists did wear their helmets with only a few of them not adhering to this measure.

That notwithstanding, in relation to the wearing of protective attires which intends to keep the body safe in situations of accidents, majority of them defaulted. It was also observed that, most of them did not have protective attire let alone to wear it. Some of them gave their reason for not

wearing protective attire to be that, the weather was warm while others said they did not have money to buy some.

5.4 Practice on Road Safety Measures by the Motorcyclists

An observational study portraying actual practice through the use of a checklist revealed that, in situations where traffic lights indicated red, these motorcyclists rode through which endangered their lives and the lives of the other road users. This continues to be a major negative practice of road safety measures exhibited by most motorcyclists in the country as well as other countries. They were also observed to be wearing helmets which were well buckled and their passengers as well, however just a few riders were observed to be wearing protective attire as majority of them were seen wearing normal attire.

5.5 Modifying Factors That Influences the Practice of Helmet and Protective Attire Usage.

5.5.1 Age

The findings revealed that, in relation to their ages, there was no significant age association to helmet or protective attire wearing among the motorcyclists. This gives the indication that, a person's age does not have a significant influence on whether he/she will be wearing helmet or protective attire during riding or in the course of their work. This was confirmed with a chi-square test conducted at the 0.05 significance level. This produced a $p>0.05$ in relation to both helmet and protective attire wearing.

Background characteristics	Category	Helmet use	p-value	Protective attire use	p-value
	18-25	85(97.7)		45(52.9)	
	26-35	152(100.0)		87(57.2)	
Age	36-45	30(100.0)	**0.235**	13(46.4)	**0.404**
	46-55	2(100.0)		2(100.0)	

5.5.2 Location

A further Cross tabulation analysis conducted between the location of the motorcyclists and their tendency to wear helmet or protective attire also revealed that, the people of Korle-Gonno showed a positive attitude and practice towards helmet wearing with $p<0.05$ on a chi-square test. This was confirmed by majority of them representing 95.7% as compared to the people of Agbogbloshie and Wato who also recorded 63.2% and 57.1% respectively for those who wore helmets during riding. This was confirmed with an observational study by the researcher.

However, there was no significant difference in the wearing of protective attire as far as locations of the motorcyclists were concerned. This was also confirmed through observation and a chi-square test which produced a $p>0.05$.

Background characteristics	Category	Helmet use	p-value	Protective attire use	P-value
	Agbogbloshie	36 (63.2%)		18 (31.6%)	
Town of Riders	Korle-Gonno	22 (95.7%)	**0.017****	6 (26.1%)	
	N/R	5 (83.3%)		2 (33.3%)	**0.682**
	Wato	8 (57.1%)		2 (15.4%)	

This finding contradicts the findings of Emmanuel Geofrey Mwakapasa (2011) on the topic Attitude towards and practice of helmet use among commercial motorcyclists in dares salaam region, Tanzania. In his study, he observed that, the location to where the motorcyclists work had no significant influence on helmet wearing, in both interview and observation (p = 0.114 and p= 0.103 respectively). He however also stated that, more commercial motorcyclists, 85.6% (n=101) in the urban areas reported to wear helmet than their peri-urban counterparts, 78.1%, (n=121).

5.5.3 Level of education

Finally, the findings revealed that, the level of education did have a significant influence on the level of knowledge, attitude and practice of helmet use among the motorcyclists. It was observed that, majority of them representing 95.6% have had at least basic education which was enough to know the wrongs and rights of road safety measures in relation to motorcycles. This was confirmed with a chi-square test also conducted at the 0.05 significance level. This produced a

p<0.05. That notwithstanding, there was no significant effect of education on protective attire use among the motorcyclist with p>0.05 as only the minority of them representing 48.9% were observed to be using or possessed protective attire.

Background characteristics	Category	Helmet use	p-value	Protective attire use	P-value
Educational Level	Pre-school	43 (95.6)	**0.018****	22(48.9)	**0.313**
	Primary/JSS	138(100.0)		82(60.3)	
	Secondary/SSS/Tech/Voc	45(100.0)		20(46.5)	
	No response	43(100.0)		23(53.5)	

The above information confirms the findings of by Sufiyan and Ahmed (2013) on the topic Knowledge, attitude and compliance with safety protective devices among commercial motorcyclists in Tudun-Wada Zaria, North-Western Nigeria. They observed a significant statistical relationship between educational level of respondents and knowledge of safety protective device (χ^2 =5.143; df = 1; p<0.05) as those with higher level of education were found to be more knowledgeable. They concluded that, a person's educational level does have an effect on the knowledge towards road safety measures among motorcyclists and thus suggested education be given to all motorcyclists.

It also confirms the findings of Emmanuel Geofrey Mwakapasa (2011). In his study, he found that, the level of education was a significant predictor of helmet wearing among the motorcyclists irrespective of their location or ages (p=0.048).

5.6 Cues for the usage of helmet and protective attire.

The results of the study showed that most of the commercial motorcyclists had helmets (98.5%). (1.1%) mentioned that they did not wear helmets consistently, especially for short trips and also when they did not anticipate the presence of the policemen on the road.

Majority of respondents (91.3%) also had protective attire but when asked if they wore it regularly,(31.5%) said that they never wore it whiles (28.9%) wore it every day and at every trip.

5.7 Limitation of the study

The study was limited by certain factors beyond the control of the researcher. Time and financial constraints posed the major limitations to this study. The study was conducted within one semester of the academic calendar therefore the time for data collection was limited and funds were also not readily available.

Another limitation is that, data was collected during the hot and dry season April and May2013 and at a time where the police were arresting commercial motorcyclists because the use of motorcycles for commercial purposes was against the Laws of Ghana and thus illegal. Also there was mass coverage of road accidents by the mass media within the period of March and May which put the usage of motorcycles in a bad light This could have increased the proportion of commercial motorcyclists who wore helmets and also decreased the number who wore protective attire because less focus and attention was paid to the use of protective attire by the police.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

All the commercial motorcyclists in this study were males and majority of these riders were within the age group of 26-35 years. A vast majority of them also had a minimum of primary school / JSS education. It can therefore be implied that the commercial motorcyclists maybe well informed about the hazards of motorcycling and they have knowledge of road safety measures. It may thus be much easier to educate them concerning road safety and accidents. This could go a long way in saving the lives of other road users by thus reducing morbidity and mortality.

The motorcyclists at Agbogbloshie, Korle-Gonno and Wato used in the study generally had a positive attitude towards helmet use, however the use of protective attires were patronized but were minimally used. According to these riders the police paid more attention on the use of helmets rather than protective attire. This could be associated with the high rate of the use of helmets.

Observational studies conducted also showed most of the commercial motorcyclists wearing helmets however just a handful of the riders were observed wearing protective attires.

The motorcyclists at Korle-Gonno showed a positive attitude and practice towards helmet use as compared to those from Agbogbloshi and Wato. However the level of education was the most predictor of helmet use.

The inconsistent use of protective attire was clearly evident by these motorcyclists and this could be attributed to the weak enforcement of protective attire use by the law enforcers. Further explanations revealed that even though most of them had it they did not see the relevance in

wearing it partly because of the discomfort caused by the hot and humid climate and also because they were not threatened by the police to wear it. However, there was no significant difference in the wearing of protective attire as far as locations of the motorcyclists were concerned.

The level of education did have a significant influence on the level of knowledge, attitude and practice of helmet use among the motorcyclists.

6.2 Recommendations

Although majority of the commercial motorcyclists claimed to own and wear helmet as evident with their positive response to helmet use, not all of them were wearing it consistently. Also, a greater proportion of those who reported to own protective attire did not wear them. Therefore, there is the need for continuous legal enforcement towards helmet use as well as protective attire use. Also the enforcement of helmet use should be parallel to protective attire use because the use of protective attire can protect the life of the rider in terms of reducing the severity of injury and deformity. Legal enforcement towards helmet and protective attire use by passengers should also be strengthened.

Since most of the commercial motorcyclists reported to listen to radio and watch television, there is the need for regular education through these mediums as well as educational campaigns at their packing stations to create awareness about the importance and usefulness of helmet and protective attire use as well as the consequences of not wearing these protective road safety items.

There is also the need to nurture the good knowledge, attitude and practice of helmet and protective attire use among these motorcyclists by encouraging them and helping them develop a positive attitude towards road safety measures.

A further study is needed to explore the use and non use of helmets and protective attire among motorcyclists and also to unearth the non adherence to road safety measures.

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APPENDICES

Appendix A

Participant ID……..

Location/parking point……

SECTION A DEMOGRAPHIC DATA

Please tick or [√] or write where appropriate

1. Sex: Male [ ] Female [ ]

2. Age: 18-25 [ ]

26-35 [ ]

36-45 [ ]

46-55 [ ]

56 and above [ ]

3. Marital status: Single [ ] married or living together [ ] widowed [ ]

Divorced/separated [ ]

4. Level of education: Pre-school [ ] Primary/JSS [ ] Secondary/SS/SHS/Tech/Voc.

[ ] Tertiary [ ] Higher [ ]

5. Religion affiliation: Christian [ ] Islam [ ] Traditional [ ] other [ ]

6. Are you a member of any association? Yes [ ] No [ ]

If yes, which one? ……

KNOWLEDGE OF ROAD SAFETY MEASURES.

1. How long have you been riding a motorcycle. 1-3yrs. [ ] 4-6yrs [ ] 7+ [ ]

2. Do you know about practices that help ensure road safety? Yes [ ] No [ ]

3. If yes, where did you hear about road safety?
TV …….
Radio……
GPRTU…….

4. What are some road practices that can lead to road accidents.
……
……
……

5. Do you make calls whiles riding your motorcycle? Yes [ ] No [ ]

6. Do you have a riding license? Yes [ ] No [ ]

7. Is your motorcycle insured? Yes [ ] No [ ]

8. Do you have a first aid kit? Yes [ ] No [ ]

SECTION C.ATTITUDE TOWARDS HELMET AND PROTECTIVE ATTIRE USE.

For each statement please give a single response using any of the 5 options in a scale of 1 to5.

1 = strongly disagree (SD)
2 = disagree (D)
3 = neither agree nor disagree (N)
4 = agree (A)
5 = strong agree (SA)

NO	Statement	SD	D	N	A	SA
1	Motorcyclist should wear helmet and use protective attire	1	2	3	4	5
2	Helmet is important for rider's safety	1	2	3	4	5
3	Protective attire is important for rider's safety	1	2	3	4	5
4	Helmet is not necessary for passengers	1	2	3	4	5
5	Protective attire is not necessary for passengers	1	2	3	4	5
6	Wearing protective attire is uncomfortable	1	2	3	4	5
7	Wearing helmet is uncomfortable	1	2	3	4	5
8	Wearing a helmet reduces peripheral vision	1	2	3	4	5
9	Wearing a helmet and protective attire is not necessary during hot	1	2	3	4	5

	weather					
10	Wearing protective attire is not necessary during the day time than night time	1	2	3	4	5
11	Wearing helmet is not necessary during the day time than night time	1	2	3	4	5
12	Wearing protective attire is more needed in urban than rural areas	1	2	3	4	5
13	Wearing a helmet is more needed in urban than rural areas	1	2	3	4	5
14	There is no need for an experienced rider to use protective attire	1	2	3	4	5
15	There is no need for an experienced rider to use a helmet	1	2	3	4	5
16	Protective attire use is not important when there are no police around	1	2	3	4	5
17	Helmet is not important when there is no police around	1	2	3	4	5
18	Storage of helmets when the motorcycle is parked is a problem.	1	2	3	4	5
19	Wearing helmet is important just to avoid police fines	1	2	3	4	5
20	Wearing a helmet is not necessary when riding a short trip (less than 1km)	1	2	3	4	5
21	Wearing a helmet does not reduce the severity of head injury in a crash	1	2	3	4	5
22	Wearing helmet is more necessary when riding on the highways than small roads	1	2	3	4	5

SECTION D.PRACTICE OF HELMET AND PROTECTIVE ATTIRE USE.

HELMET USE

21. Do you have a helmet? 1. YES [ ] 2. NO [ ]

22. Do you use the helmet during your last ride? 1. YES [ ] 2. NO [ ]

23. Do you have helmet for others who ride with you? 1. YES [ ] 2. NO [ ]

24. How often do you use it?
1. Every day at every trip [ ]
2. Every day but not every trip [ ]
3. Never use it [ ]

25. When do you not wear helmet?
1. When riding for a short trip (1 mile) [ ]
2. When I don't anticipate meeting a policeman [ ]
3. During the hot weather [ ]
4. During the day [ ]
5. During the night [ ]
6. During weekdays [ ]
7. During weekend [ ]
8. Others (specify)……..

PROTECTIVE ATTIRE USE

26. Do you have Protective Attire? 1. YES [ ] 2. NO [ ]

27. Do you use Protective Attire? 1. YES [ ] 2. NO [ ]

28. How often do you wear it? 1. Every day at every trip [ ]

2. Every day but not every trip [ ]

3. Never use it [ ]

29. When do you not wear it? 1. When riding for a short trip [ ]

2. When I don't anticipate meeting a policeman [ ]

3. During the hot weather [ ]

4. During the day [ ]

5. During the night [ ]

6. During weekdays [ ]

7. During weekend [ ]

8. Others (specify)……..

30. Are they readily available to purchase? 1. YES [ ] 2. NO [ ]

Observation Checklist

ATTITUDE AND PRACTICE OF HELMET AND PROTECTIVE ATTIRE USE AMONG MOTORCYCLITS IN ACCRA

TOOL 2: OBSERVATION SHEET

Date: Day: _____Month:_____Year:_____

Time: ____:_____ A.M. _____:_____ P.M.

Place **:**_____

Motorcycle parking point ID_____

Motorcycle plate number_____

Observer _____

Number of people on motorcycle 1 ☐ 2 ☐ 3 ☐ others (specify) _____

Rider Sex	Male □	Female □
Wearing a helmet	Yes ☐…01	No □…02
Wearing Protective attire	Yes ☐…01	No □…02
Type of helmet*	1 ☐ 2 ☐ 3 ☐ 4 ☐ other (specify) _____NA ☐….99	
Helmet buckled correctly	Yes ☐…01	No ☐…02 NA ☐….99
Did s/he have helmet for the passenger (s)?	Yes ☐…01	No ☐…02 NA ☐….99
Did s/he ensure that his/her passenger(s) wore helmet correctly?	Yes ☐…01	No ☐…02 NA ☐….99
Is protective attire worn correctly?	Yes ☐…01	No ☐…02 NA ☐….99
Other observations	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

_____

√*1-Full face (with chin guard), 2- Open-face (covers ears and neck), 3- Half-face (above ears)
4- Other (e.g. bicycle helmet, construction hat, horse-riding hat, etc.).

Appendix B

Informed Consent Form

Research Topic: Road safety Practices of Motorcyclist in Accra.

Introduction

My name is Audrey Sowa. I am a student from the School of Public Health, University of Ghana. I am conducting a study on **Road safety practices of motorcyclist in Accra**. The aim of this study to determine the level of knowledge, attitude and practices concerning road safety measures in preventing traffic injuries.

Procedures

The study will involve answering questions on individual practices that ensure road safety during your work. This is an academic research which forms part of my work for the award of a Masters Degree.

Risks and Benefits

The results of the study will be used by policy makers and healthcare providers as well as other stakeholders in designing interventions on safety on our roads. It will also help in further research. There are no known related risks in participating in this study

Right to refuse participation

Participation in this study is voluntary and you can choose not to answer any individual question or all the questions. You are at liberty to withdraw from the study at any time. However, your views and contributions in the study would be very much appreciated.

Anonymity and Confidentiality

I would like to assure you that whatever information you will provide will be handled with strict confidentiality and will be used purely for research purposes. Your responses will not be shared with anybody who is not part of the study team. Data analysis will be done at the aggregate level to ensure anonymity.

Before taking consent

Do you have any questions you wish to ask about the study? Yes ☐ No ☐

(If Yes, questions to be noted below)

……

……..…….

……..…….

……

……..…….....

CONSENT

I,……....declare that the purpose, procedures as well as risks and benefits of the study have been thoroughly explained to me in plain language and I have understood.

I hereby agree to answer the questionnaire

Signature of participant …….

Date……. / …… / ……....

Interviewer's statement:

I, the undersigned, have explained this consent form to the subject and that she/he understands the purpose of the study, procedures to be followed as well as the risks and benefits involved. The subject has freely agreed to participate in the study.

Signature of interviewer ……..

Date ……./ ……../ …….

Researcher's Contact Details

In case of any further clarification or discussion with the researcher, please use the address below;

Name: Audrey Sowa

Address: School of Public Health University of Ghana, Box LG 13, Legon.

Phone: 0244675722

Contact of Ethical Review Committee

Ms. AbenaKwaaAddai-Donkor. Tel. 0244-712-919

GHANA HEALTH SERVICE
ETHICAL REVIEW COMMITTEE ON RESEARCH INVOLVING HUMAN SUBJECTS (ERCRIHS)
(CHECKLIST)

PI NAME:

Project ID (To be given by the Secretariat **Title of Project:**	PI TO COMPLETE			
	Yes	No	N/A	

Vulnerable/High Risk Group				
1	Is a vulnerable population being studied?	☐	☐	☐
If yes, tick the vulnerable population being studied?				
☐Pregnant women ☐ Adolescents Children	☐Elderly ☐Refugees ☐Those who cannot give consent (unconscious)	Prisoners Persons with mental or Behavioural disorders Others		
2	Is the justification for studying this vulnerable population adequate?	☐	☐	☐
3.	Have adequate provisions been made to ensure that the vulnerable population is not being exploited?	☐	☐	☐
Responsible Technical Officer's Comments:				
Scientific and Technical Issues				
1.	Is the rational for the study clearly stated in the context of present knowledge?	☐	☐	☐
2.	Is the hypothesis to be tested fully explained?	☐	☐	☐
3.	Is the project design scientifically sound?	☐	☐	☐
4.	Where present, is the control arm adequate?	☐	☐	☐
5.	Are the inclusion and exclusion criteria complete and appropriate?	☐	☐	
6.	Are the types and methods for subject allocation appropriate?	☐	☐	☐
7.	Are the procedures for participant recruitment, admission, follow up and completion appropriate?	☐	☐	☐
8.	Are the drugs and/or devices to be used fully described?	☐	☐	☐
9.	Does the project design include appropriate criteria for stopping and discontinuing the research?	☐	☐	☐
10.	Are the clinical procedures to be carried out fully described and	☐	☐	☐

	appropriate?			
11.	Are the laboratory tests and other diagnostic procedures fully described and appropriate?	☐	☐	☐
12	Is the Statistical basis for the study design appropriate and is the plan for analysis of the data appropriate?	☐	☐	☐
Responsible Technical Officer's Comments:				

GHANA HEALTH SERVICE
ETHICAL REVIEW COMMITTEE ON RESEARCH INVOLVING HUMAN SUBJECTS (ERCRIHS)
CHECKLIST

PI NAME:

Project ID (To be given by the Secretariat) PI TO COMPLETE				
Yes	**No**			**N/A**
Informed Consent, Decision-making & Confidentiality				
1.	Is the information sheet free of technical terms, written in laypersons' language, easily understandable, complete & adequate?	☐	☐	☐
2.	Does it make it clear that the proposed study is research?	☐	☐	☐
3.	Does it explain why the study is being done and why the subject is being asked to participate	☐	☐	☐
4.	Does it clearly state the duration of the research**?**	☐	☐	☐
5.	Does it provide participants with a full description of the nature, sequence and frequency of the procedures to be carried out?	☐	☐	☐
6.	Does it explain the nature and likelihood of anticipated discomfort or adverse effects, including psychological and social risks, if any-and what has been done to minimize these risks, and the action to be taken if they occur?	☐	☐	☐
7.	Does it outline the possible benefits, if any, to the research participants	☐	☐	☐
8.	Does it outline the possible benefits, if any, to the community or to society?	☐	☐	☐
9	If confidentiality is not possible due to the research design, has this been conveyed to all relevant persons?	☐	☐	☐
10	Does it inform the research participants that their participation is voluntary and refusal to participate (or discontinue participation) will involve no penalty or loss of medical benefits to which the participant was otherwise entitled?	☐	☐	☐
11.	Does it describe the nature of any compensation or reimbursement to be provided?	☐	☐	☐

12	Does it provide the alternatives to participation?	☐	☐	☐
13.	Does it provide the name and contact information of a person who can provide more information about the research project at any time?	☐	☐	☐
14.	Has provision been made for subjects incapable of reading and signing the written consent form (e.g. illiterate patients)? (Please attach)	☐	☐	☐
15	Does it conclude with a statement such as ‘’I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any question I have asked have been answered to my satisfaction. I consent voluntarily to participate as a subject in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my further medical care’’	☐	☐	☐

GHANA HEALTH SERVICE

ETHICAL REVIEW COMMITTEE ON RESEARCH INVOLVING HUMAN SUBJECTS (ERCRIHS) CHECKLIST

PI NAME:

Project ID (To be given by the Secretariat PI TO COMPLETE				
Yes	No			N/A
16.	Does it provide information to the research participants on the costs to the participants involved in terms or time, travel, man-days lost from work, etc. and reimbursements, if any?	☐	☐	☐
17.	Has provision been made for subjects incapable of giving personal consent (e.g. for cultural reasons, children or adolescents less than the legal age for consent in the country in which research is taking place, subjects with mental illness, etc)? (Please attach).	☐	☐	☐
18.	Does it outline the procedure that will be followed to keep participants informed of the progress and outcome of the research?	☐	☐	☐
Responsible Technical Officer’s Comments:				
Other materials, documents and study instruments (Patient recruitment material, Questionnaires				
1	Is the Participant Recruitment Material (e.g. advertisements, notices, media articles, transcripts of radio messages) provided both in English and in the local language?	☐	☐	☐
2.	Do these materials make claims that may not be true?	☐	☐	☐
3.	Do they make promises that may be inappropriate in the research setting (e.g. provide undue incentives or emphasize remuneration?	☐	☐	☐
4.	Does the study involve questionnaires, diaries, study instrument?	☐	☐	☐

5.	Are these attached to the proposal (In English and local language)?	?	?	?
6.	Are the questionnaires written in lay language and easily understood?	?	?	?
7.	Are the questionnaires relevant to answer the research question?	?	?	?
8.	Are the questionnaires worded sensitively?	?	?	?
9.	Does the consent information and form describe the nature and purpose of the questions to be asked?	?	?	?
10.	If applicable, does the consent information and form make it clear that some of the questions may prove embarrassing for the participant?	?	?	?
11.	Does the proposal describe how confidentiality of the questionnaires will be maintained (i.e. will they be coded or anonimized)?	?	?	?
12.	Does the consent information and form state that the participant is free to not answer any question?	?	?	?
13.	Where applicable, does the informed consent form make it clear that the in-depth interview or focus group discussion is likely to be audio or video taped?	?	?	?
14.	Where applicable, does the consent form mention how and for how long these tapes are going to be stored?	?	?	?
Responsible Technical Officer's Comments:				

GHANA HEALTH SERVICE
ETHICAL REVIEW COMMITTEE ON RESEARCH INVOLVING HUMAN SUBJECTS (ERCRIHS)
(CHECKLIST)

PI NAME:

Project ID (To be given by the Secretariat) Yes	No		N/A	
Clinical Trials				
1.	Is this a new drug or vaccine trial?	☐	☐	☐
2.	If applicable, is clearance from the national drug regulatory authority attached? *	☐	☐	☐
3.	Is the Investigator's Brochure (including safety information) attached?	☐	☐	☐
4.	Is the Adverse Drug Reaction/Adverse Event Reporting form attached?	☐	☐	☐
5.	Has a Data Safety Monitoring Board been established	☐	☐	☐
6.	Are the names of the chairperson and members of the DSMB available for the records?	☐	☐	☐
Responsible Technical Officer's Comments:				
Human Biological Materials				
1,	Will human biological materials (tissues, cells, fluids, genetic material or genetic information) be collected as part of the	☐	☐	☐

	research?			
2.	Does the consent information and form fully described the nature, number and volume of the samples to be obtained and the procedures to be used for obtaining them?	☐	☐	☐
3.	Does the consent information and form indicate if the procedures for obtaining these materials are routine or experimental and if routine, are more invasive than usual?	☐	☐	☐
4.	Does the consent information and from clearly describe the use to which these samples will be put?	☐	☐	☐
5.	Does the consent information and form include the provision for the subject to decide on the use of left-over specimens in future research of a restricted, specified or unspecified nature?	☐	☐	☐
6.	Does the consent information and form cover for how long such specimens can be kept and how they will be finally destroyed?	☐	☐	☐
7.	Does the proposal describe how specimens will be coded/anonimized	☐	☐	☐
8.	Where applicable, does the consent form mention that genetic testing/genomic analysis will be carried out on the human biologic materials?	☐	☐	☐
Responsible Technical Officer's Comments:				