KNOWLEDGE AND PREVENTIVE EYE CARE PRACTICES AMONG COMMERCIAL MOTORCYCLE RIDERS IN IBADAN SOUTH WEST LOCAL GOVERNMENT AREA, IBADAN, OYO STATE

BY

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ABSTRACT

Commercial motorcycles are the second most used modes and the most common form of informal transport system in Nigeria. This has posed a lot of hazards particularly accidents resulting in injuries and even death in severe cases to the motorcycle rider, passengers and even pedestrians. The knowledge and preventive eye care practices among commercial motorcycle riders has not been thoroughly investigated given that vision constitutes ninety-five percent (95%) of the sensory requirements for driving and riding of motorcycles, as well as good vision presenting as a critical determinant in prevention of road traffic accident while driving. This study was aimed at investigating the knowledge and preventive eye care practices among commercial motor cycle riders in Ibadan South West Local Government Area in Ibadan.

The study adopted a descriptive cross – sectional study design. Two hundred and thirty-five commercial motorcycle riders in Ibadan South West Local Government Area were selected using a four-stage Multi Stage Sampling Technique. Data were collected using validated semi-structured questionnaire which contained a 15-points knowledge scale and a 14-points practice scale, and a visual screening test form. A score of < 8 and <11were categorised as poor knowledge and poor practice, respectively. Data were analysed using descriptive and inferential statistics at p=0.05 level of significance.

Age of respondents was 37.6±8.0 years. The study showed that most of the respondents (39.6%) had fair knowledge of preventive eye care, 38.3% reported that good preventive eye care practice will aid vision and prevent accidents. However, 76.6% of the respondents had poor practice of preventive eye care, 26.8% had their eyes checked at least once a year by a specialist and 32.3% go to the eye doctor to have eyes checked/tested when they experienced problems with their eyes. On reasons why commercial motorcycle riders don't go to a specialist for eye examination

at least once a year, 34.9% reported eye test as being expensive and 3.8% reported poor awareness on eye care. On reasons why commercial motorcycle riders do not wear protective sunglasses when riding motorcycle, 23.8% reported poor awareness of its importance, 20.0% reported non –affordability. Ocular health evaluation of the respondents revealed the presence of Presbyopia (42.6%). There was a statistically significant difference between respondents level of knowledge and their practice of preventive eye care (p=0.000) while there was no significant difference between ocular health of respondents and practice of preventive eye care.

The study revealed that respondents had fair knowledge and poor practice of preventive eye care. This means that their knowledge seemed to be unable to result in good practice of preventive eye care. It is thus recommended that commercial motorcycle riders be made to undergo regular eye test at least once a year at an eye care/health facility. Also, cost of eye test should be subsidized by the Government to make affordable, accessible and quality eye care available to all. Commercial motorcycle riders should be encouraged to wear protective sunglasses while riding their motorcycle through the use of mass media, opinion leaders, peer group and social support groups.

Key words: Motorcycle riders, Commercial, Motorcycles, Preventive eye care practices, Protective sunglasses

Word Count: 500

DEDICATION

This work is dedicated to the Almighty God; the author and finisher of my faith.

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CERTIFICATION

I certify that this work was carried out by IDHUGWE, Ewomozino Mishael in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan under my Supervision.

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GLOSSARY OF ABBREVIATIONS

C.I.……Confidence Interval

FRSC ……Federal Road Safety Corps

NHS ……..National Health Services

NHTSA ……National Highway Traffic Safety Administration

RTAs ……Road Traffic Accidents

SPSS ……Statistical Package for Social Sciences

WHO ……World Health Organization

DEFINITION OF TERMS

Motorcycle: A vehicle with two wheels that is powered by a motor and that can carry one or more people.

Motorcyclist: A person who rides a motorcycle.

Eye: The part of the body used for seeing.

Care: Things that are done to keep someone healthy, safe and in good condition.

Practices: To do something regularly or constantly as an ordinary part of your life.

Commercial: Related to earning of money.

Visual Acuity: Clarity or clearness of vision, measure of how well a person sees.

Ophthalmoscope: An instrument used in viewing the interior of the eye and especially the retina.

Penlight: A small flashlight that resembles a fountain pen in size and shape.

Visual Acuity Chart: A chart imprinted with block letters that line-by-line decrease in size, corresponding to the distance at which that line of letters is normally visible.

Presbyopia: The loss of the eye's ability to change focus to see near objects that occurs with age.

Glaucoma: A condition of increased pressure within the eyeball, causing gradual loss of sight.

Cataract: A condition in which the lens of the eye becomes progressively opaque, resulting in blurred vision.

Pterygium: A benign growth in the eye that can obscure vision and may require surgery.

Pinguecula: A small yellow region of degeneration of the conjunctiva of the eye.

CHAPTER ONE

1.1 Introduction

A commercial motorcycle also referred to as "Okada" in Nigeria is used to carry a passenger for hire. It is the second most used modes of transport in Nigeria and by far the most common form of informal transport system in the country. Increase in popularity and widespread acceptance of motorcycle has risen fast in recent years. Unfortunately, the increase has been accompanied by increased levels of high risk behaviours and accidents on the Nigerian roads, and as a result they have come under heavy deliberations thereby culminating in legislation restricting or prohibiting their operations in some Nigerian cities (Cervero, 2005). Use of motorcycle for commercial transportation of commuters and goods has resulted in an increase in morbidity and mortality from road traffic injuries over the years. Road traffic injuries are a disaster worldwide. The World Health Organization (WHO) has estimated that about 1.2 million people die and 50 million people are injured yearly from road traffic accidents (Peden, Scurfield, Sleet, Mohan, Hyder, Jarawan and Mathers, 2004). This increase has been fueled largely by increase in use of motorcycles for commercial transportation (Solagberu, Ofoegbu, Nasir, Ogundipe, Adekanye and Abdul-Rahman, 2006, Umebese, and Okukpo, 2001).

A lot of reasons have been put up for the rise in numbers of motorcycles on Nigerian roads. These reasons range from the relative low costs of newer Asian models to their ability to meander through traffic jams and bad roads (Solagberu et al, 2006). Also, it is commonly heard amongst the motor cycle riders that within twenty-four hours of commencement of their commercial motorcycling activity, they often earn enough to feed themselves and a little extra to provide for families. Many local entrepreneurs provide capital for new motorcycles on hired

purchase or simply loan out motorcycles to riders for daily submission of fixed amounts. Viewed against the high unemployment rate, this arrangement is appealing for young men. This seems to be pulling young men from farms, apprenticeships, and even schools. This largely unregulated use of motorcycles for commercial purposes in Nigeria has many present and future consequences. Many of these riders are not trained (Nasir, Bello, Ofoegbu, Abdur-Rahman, Yakub and Solagberu, 2011) and also do not go through any form of medical and visual screening, thus presenting a danger to themselves and other road users. Motor cyclists are predisposed to a number of hazards which results in injuries and even death in severe cases (Sundarlal, Adarsh and Pankaj, 2007). These hazards are caused by factors grouped into three namely:

- Environmental Factors: These consist of inadequate road networks and services, less physical space, overcrowded road conditions and objects on the road.
- Human Factors: These consist of poor visual acuity, impaired hearing, physical defect, negligence/non use of personal protective measures, psychosocial problem, addiction and substance abuse.
- Machine Factors: This includes bad maintenance and poor monitoring.

The above factors predispose motorcyclists to hazards such as eye problems, impaired hearing ability and accidental injuries (accidental injuries include bruises, lacerations, dislocation, fractures and even death in severe situations) (Sundarlal et al., 2007). These motorcycle injuries now represent one of the commonest causes of hospital admission with attendant loss of limbs and life.

1.2 Statement of the Problem

The increase in the use of motorcycles as a means of private, public and commercial urban transport is evident in countries in sub- saharan Africa of which Nigeria is a part (Abuhamound, Rahmat and Ismail, 2011). This has posed a lot of hazards particularly accidents resulting in injuries and even death in severe cases to the motorcycle rider, passengers and even pedestrians. Between 20 to 50 million people are estimated to be injured or disabled each year due to road traffic accidents globally (WHO, 2013; 2015).

In the year 2005, there were 14, 279 reported cases of road traffic crashes of which 5,351 people were killed and 16, 897 people were injured (Federal Road Safety Corps Annual Report, 2006). A large proportion of these burdens were due to motorcycle crashes many of which were used for commercial transport (Federal Road Safety Corps, 2006). Also, motorcycle riders are 30 times more likely than car occupants to die in a traffic crash and 8 times more likely to be injured (National Highway Traffic Safety Administration, 2007). Road traffic injuries are among the leading cause of death and life-long disability globally (WHO, 2015).

Ibadan South West Local Government Area is one of the Local Government Areas and one of the busiest in Ibadan, Oyo State, which is the third largest city in Nigeria. It is home for small, medium and large scale industries and has motorcycles as a major means of public transport.

Poor visual acuity, negligence/non use of personal protective measures (such as use of protective sunshades, helmets while riding their motorcycle, having regular/annual eye test and examination, avoiding self – medications, intake of good diet etc) are features among motorcycle riders in the area. This predisposes the motorcycle riders, passengers and pedestrians to hazards

such as red eyes, brown discolored conjunctiva, pterygium, pingueculum, bruises, lacerations, dislocations and even fractures in severe situations. Also, commercial motorcycle riders are mostly uneducated and poor driving has been related to inability to read and write (Adogu and Illika, 2006).

Studies on knowledge and preventive eye care practices among commercial motor cycle riders have not been conducted in this area. It is based on the above that this study was conducted to investigate the knowledge and preventive eye care practices among commercial motor cycle riders in Ibadan South West Local Government Area, Ibadan.

1.3 Justification

Road transportation involving the use of motorcycles provides benefits both to nations and individuals by facilitating the movement of goods and people (WHO, 2009).

The choice of commercial motor cycle riders for this study is due to the fact that they make up an important but neglected study group as review of literature proves. This study will add to the body of knowledge as regards knowledge and preventive eye care practices among commercial motor cycle riders in Nigeria.

Vision constitutes ninety-five percent (95%) of the sensory requirements for driving, with good vision presenting as a crucial determinant in prevention of road traffic accident while driving and riding of motorcycles.

This research aims to study the knowledge and preventive eye care practices among commercial motorcycle riders.

Results from the study will also be helpful in formulating policies concerning eye care practices among commercial motor cycle riders in the country. Finally, the results of the study can be used as baseline data for future related researches.

1.4 Research Questions

The research questions for the study are:

1) What is the level of knowledge relating to preventive eye care among respondents?
2) What is the respondents' attitude towards preventive eye care?
3) What is the level of practice of preventive eye care among the respondents?
4) What are the factors that act as barriers to the practice of preventive eye care among the respondents?
5) What is the ocular health status of the respondents?

1.5 Research Objectives

1.5.1 Broad Objective

To investigate knowledge and preventive eye care practices among commercial motor cycle riders in Ibadan South-West Local Government Area, Ibadan.

1.5.2 Specific Objectives

The specific objectives of the study is to

1) Assess the level of knowledge on preventive eye care among respondents.
2) Examine the attitude towards practice of preventive eye care among the respondents.
3) Determine the level of practice of preventive eye care among the respondents.
4) Identify the factors that act as barriers to the practice of preventive eye care among the respondents.
5) Determine the ocular health status of the respondents.

1.6 Research Hypotheses

The following null hypotheses will be tested with this study:

Ho1: There is no significant association between knowledge of respondents and their practice of preventive eye care

Ho2: There is no significant association between age of respondents and their practice of preventive eye care

Ho3: There is no significant association between level of education of respondents and their knowledge of preventive eye care

Ho4: There is no significant association between ocular health status of respondents and their practice of preventive eye care

Ho5: There is no significant association between age of respondents and their attitude towards preventive eye care

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual clarification of eye care practices

Maintaining good eye health is essential for everyone, including blind and partially sighted people. Poor eye health can lead to sight loss, over 30% of which may be avoided through early identification of sight-threatening pathologies, proper eye care and even more through correcting refractive error (Future of Sight Loss UK, 2012).

Vision is regarded as the most important source of information during driving. The need for good eye care practices among the commercial drivers and motorcyclists therefore cannot be overemphasized (Chidi-Egboka, Bolarinwa, Awoyemi and Patrick, 2017). Good eye care practice especially regular eye check at the hospital can help in early detection of poor visual function to enable prompt intervention, this is because poor vision can lead to road traffic crash and the consequences of road traffic crash could be very fatal. It is therefore very imperative that commercial drivers and motorcyclists always exhibit good eye care practices bearing in mind the major role of vision in driving (Chidi-Egboka et al, 2017).

During driving, the central vision or visual acuity which is the finest spatial detail is used to discern detail, identify, and/or recognize what the driver/ motorcyclist is looking at. Certain visual conditions may impair the central vision thereby impair individual's ability to drive safely. Visual acuity impaired by one or more vision conditions can result in the driver failing to read road signs and/or recognize hazards in a timely manner thereby resulting in road traffic accidents (State of California, Department of Motor Vehicles, 2016). In the last two decades there has been a burst of research activity focused on the role of vision in driving, much of which has been

centered on what types and degrees of vision impairment hamper driver safety and performance (Owsley and Mcgwin 2010).

Visual impairment results based on different eye diseases/conditions which include uncorrected refractive error and cataract, this impairment may be mild, moderate, severe or blindness (World Health Organization, 2018). Blindness is defined as a presenting visual acuity of worse than 3/60 or a corresponding visual field loss to less than 10° in the better eye. Severe visual impairment is defined as a presenting visual acuity of worse than 6/60 and equal to or better than 3/60, moderate visual impairment is presenting visual acuity worse than 6/18 and equal to or better than 6/60 while mild visual impairment is presenting visual acuity worse than 6/12 (WHO, 2018).

Pingueculum and Pterygium is the most common eye disease among outdoors workers including commercial motorcyclists. These eye diseases cause pathologic tissue change and they are caused by exposure to sun, wind, dust and dryness. These eye conditions are response to irritants in environment (e.g. Smoke and fumes) making the eye to become red and inflamed, thereby attracting attentions (Roger and Marianne, 2005). Pterygium, an eye disorder is common among outdoor workers who are daily exposed to sunlight and dust thereby causing repeated conjunctiva/corneal drying and micro trauma especially in the tropics. Commercial motorcyclists in Nigeria are outdoor workers who spend the greater part of the day outdoors under the intense heat and dust, a characteristic of this part of the world and would therefore be largely predisposed to developing this conjunctiva disorder (Achigbu and Ezepue, 2014).The treatment requires the frequent use of artificial tears, sun goggles for outdoor wear and use of Topical vasoconstrictors.

The prevalence for Pterygium in Nigeria was 19.3% in a study by Achigbu and Ezepue (2014), Pterygium was common among riders who had been riding for 5 years or more and the relationship between duration of riding and Pterygium severity was significant and was unaffected by the use of regular sun glasses.

A commercial motorcycle also referred to as *Okada* in Nigeria is a vehicle with two wheels that is powered by a motor and used to carry a passenger for hire. It is one of the chief modes of transport in Nigeria and by far the most common form of informal transport system in the country. The popularity and widespread acceptance of *Okada* has rapidly risen in recent years. Unfortunately, the rise of *Okada* has been accompanied by increased levels of high risk behavior and accidents on the Nigerian roads as a result they have come under heavy flak culminating in legislation restricting or prohibiting their operations in some Nigerian cities (Cenvero, 2005). Commercial drivers and motorcyclists are considered to be very important, in Nigeria, because majority of the people go on public transport. Sadly, most drivers with inadequate vision for driving are often not aware of it because they have never been exposed to any form of eye test (Adekoya, Owoeye, Adepoju and Ajaiyeoba, 2009). It is therefore very imperative to know that comprehensive eye exam often reveals much more than just to determine the prescription for glasses or contact lenses (National Health Services, 2014). An eye examination can reveal signs of many systemic diseases, including diabetes and high blood pressure which can cause visual impairment if not properly managed. It will also reveal some eye conditions such as glaucoma which usually has no symptoms but can lead to irreversible loss of sight (NHS, 2014).

It is worthy of note to state that the increase in commercial motorcycles is associated with corresponding increase in hazards to both the riders and the passengers and according to Sunderlal, Adarsh and Pankaj (2007), motorcyclists are predisposed to a number of hazards

which results into injuries and even deaths in severe cases. Such hazards are caused by factors which include:

1. Environmental Factor: - This factor includes inadequate road networks and surfaces, less physical space, overcrowded road conditions and objects in the road.

2. Human Factor: - This includes poor visual acuity, impaired hearing, physical defect, negligence/ non-use of personal protective measures, psychosocial problems, addiction and abuse of substance.

3. Machine Factor: - Bad maintenance and poor monitoring.

These factors predispose the motorcyclists to hazards such as eye problems, impaired hearing ability and accidental injuries.

2.2 Prevalence of eye problems among commercial motorcycle riders

Globally, glaucoma- an eye disease called the disease of the optic nerve is the leading cause of irreversible blindness and the second leading cause of blindness after cataract (Quigley and Broman 2006). It is estimated that over 67 million people worldwide have glaucoma, of which over 4.5 million are blind (Quigley and Broman 2006). Reports indicated that by the year 2020, the number of people with eye disease related to optic nerves will increase to 79.6 million (Quigley and Broman 2006) with an estimated 5.9 million being bilaterally blind (Budenz, Barton, Whiteside-de, Schiffman, Bandi, Nolan and Herndon, 2013).

WHO (2011) fact sheet on visual impairment and blindness stated that globally 285 million people were visually impaired; 39 million were blind and 246 million had low vision, about 90% of the world's visually impaired lived in developing countries and globally, uncorrected refractive errors were the main cause of visual impairment while cataracts remained the leading cause of blindness in middle- and low-income countries. The number of people visually impaired

from infectious diseases had greatly reduced in the last 20 years and 80% of all visual impairments could have been avoided or cured by appropriate eye care practices (WHO, 2011).

In a cross sectional study of prevalence of eye diseases and visual impairment among the rural population in Malaysia, Cataracts was the most common eye disease reported among the study population followed by retinal diseases, ocular trauma, glaucoma and retinopathy. Cataract was singled out as the cause of severe visual impairment among most screened patients (Thevi, Basri and Reddy, 2012). The study also indicated that visual impairment is more among people living in the rural area which maybe probably due to poor healthcare facilities and accessibility. Visual impairment in children was established to be due to refractive errors but in adults, it was due to cataracts (mostly caused by ageing and prolong exposure to ultraviolet ray), diabetic retinopathy and glaucoma.

Commercial motorcycle riders and roadside traders have been reported to have a high risk of having an eye problem called Pterygium. In a three-month data obtained by a Lagos Eye Hospital, Pterygium was reported to be mostly found among Okada riders and roadside traders which consequently formed one-third of diagnosed cases. The reason for the high prevalence of the disease among this group was because; they are exposed all day to the cause of the defect, which are dust, smoke, wind, and sunlight. Pterygium is a patch of tissue that obstructs vision by developing sideways from the lens, and ends up obstructing vision. Once it develops, surgery is the only solution. The best prevention was said to include limiting exposure to the causes which includes using sunshades. Cataract and glaucoma was also reported to be on the increase.

Also, visual impairment is a significant health problem worldwide. The World Health Organization estimated that over 80% of global visual impairment is preventable or treatable. In spite of this, millions of people remain at risk of visual loss due to the lack of eye-care services.

With almost 90% of blind and visually impaired people living in low- and middle-income countries, including some of the world's poorest communities, access to eye care is often unavailable (WHO, 2010).

In a survey in Sokoto State Nigeria among all population groups including commercial motorcyclists and drivers, it was found that eye disorder was high and ocular morbidity was reported to have a prevalence of 19% among the study population (Nasiru and Adamu, 2014). The majority of those that were studied were male and disorders affecting the lens were the most common followed by conjunctiva lesions. The most common diagnosis was lens opacity followed by conjunctivitis. While the most common subspecialty requirements in the population are cataract microsurgery and cornea/anterior segment. The study demonstrates high burden of ocular diseases most of which are either preventable or treatable if proper eye care were being done.

Eye diseases probably constitute a significant public health problem though most of them do not result in loss of vision. The major causes of blindness and visual impairment in Nigeria was updated recently following a National blindness survey (Kyari, Gudlavalleti, Sivsubramaniam, Gilbert, Abdull and Entekume, 2009).

Different eye disorder including Pterygium has been reported to be more prevalent among commercial motorcyclists who are exposed to outdoor ultraviolet radiations. The eye disorder has been reported to be significantly associated with exposure to sunlight or sand (Asokan, Venkatasubbu, Velumuri, Lingman and George, 2012).

Another major type of eye disorder is Primary open angle glaucoma, which is a chronic, progressive eye disease that is the leading cause of blindness among African Americans. Glaucoma progresses more rapidly and appears about 10 years earlier in African Americans as

compared to whites. African Americans are also less likely to receive comprehensive eye care when glaucoma could be detected before irreversible blindness (Owsley et al, 2015).

Nigeria has a high prevalence of avoidable causes of blindness (Rabiu, 2001; Abdul et al, 2009) such as cataract, glaucoma, uncorrected aphakia and trachoma. It was documented that couching (a traditional method of treating cataract by dislocating the lens into the vitreous) accounts for almost half of all procedures for cataract in Nigeria (Gilbert et al, 2010) despite the fact that this practice ultimately leads to blindness. This practice may have proliferated due to weak primary eye care services and limited access to cataract surgical services. Prevention, early detection of these common eye diseases and timely treatment or referral at the Primary health care level can reduce the burden of avoidable blindness and bad eye practices.

In a survey conducted by Ukponmwan et al, (2007) in Benin city Nigeria to find out the prevalence of Pingueculum (an eye disorder caused by exposure to ultraviolet radiation) and Pterygium among commercial motorcycle riders, the age range of the motorcycle riders was documented to be between 18 and 65. Pterigium was reported to have a prevalence rate of 12.5% and Pingueculum with a prevalence rate of 21.5%. This prevalence report shows that poor eye care practice among commercial motorcycle riders is a public health problem.

2.3 Knowledge of preventive eye care practices among commercial motor cycle riders

Various population-based studies have shown that awareness and knowledge of eye disease especially glaucoma among both rural and urban populations is low in developed countries and even worse in the developing countries (Glaucoma Research Foundation, 2012). In a cross-sectional descriptive study carried out among 328 registered commercial drivers in Ilorin metropolis, Kwara State, Nigeria, most of the commercial drivers were reported to have clear knowledge on good eye care practices while majority of them had poor eye care practice and

one-fifth of the drivers who practice good eye care had never been involved in road traffic crash in the last five years (Chidi-Egboka et al, 2017).

The role of commercial drivers in motor vehicle related injuries have been reported in Ghana since the 1990s (Mock, Amegashie and Darteh, 1999). Some of those study revealed that majority of the commercial drivers had good knowledge on the importance of vision in relation to road traffic crashes but only a few had ever had any eye examination. The study concluded that commercial vehicle drivers are an important group to target in road safety programs and adequate knowledge of preventive eye care practices should be emphasized. Also, in a study on knowledge, attitude, and perception of barriers for eye care among diabetic persons registered at employee health department of a tertiary eye hospital of Central Saudi Arabia by Al-Alawi et al (2016),it was reported that majority have excellent knowledge but at the same time the attitude was found to be intermediate between positive and negative. With today's knowledge and technology, up to 80% of global blindness is preventable or treatable and cost-effective interventions are available for the major causes of avoidable blindness (WHO, 2010).Research has demonstrated that inadequate knowledge and awareness about the importance of eye care and strategies for minimizing barriers to care contribute to African - Americans' compliance problems with eye disease management plans and their low eye care utilization rate (Hartnett, Key, Loyacano, Horswell and DeSalvo, 2005; Owsley et al, 2010).

Vision impairment especially uncorrected refractive error, cataract, glaucoma, and diabetic retinopathy is on the increase among African - Americans (Johnson et al, 2002). The public health challenge is that if these eye problems were detected early, through adequate knowledge of the condition, much of this disease and vision impairment could be reversible and even preventable with currently available ophthalmic treatments. The increase in eye diseases may be

due at least in part to some African - Americans' lower eye health literacy that is, inadequate knowledge about basic symptoms, risk factors, and effective treatments available for common eye conditions. Other factors potentially contributing to reduced eye care utilization in this population are cost, transportation, social support, and other health problems competing for attention especially acute medical conditions (Johnson et al, 2002).

It is very pertinent to state that eye care health promotion involves a combination of three components; first is, health education directed at behavior change to increase adoption of prevention behaviors and uptake of services. Secondly, the improvement in health services such as the strengthening of patient education and increased accessibility and acceptability and the third component is the advocacy for improved political support for blindness prevention policies (Hubley and Gilbert, 2006).

In a study in Bangladesh, it found out that among the rural population group in the community especially among the work force, the majority of participants had heard of cataracts, trachoma and Pterygium, yet only 4% had heard of diabetic retinopathy, 7% of glaucoma and 8% of Age-related macular degeneration while most of the participants did not know vision loss could be prevented (Islam, Chakrabarti, Islam, Finger, and Critchley, 2015).

Aside from the fact that non-medical personnel including artisans and commercial motorcyclists have been reported to have poor knowledge of eye-care, some nurses have also been documented to lacking some knowledge and practices regarding eye care (Imad et al, 2013).

However, in a qualitative and quantitative study among primary healthcare workers in Northern Nigeria by Abdul Rahman et al (2015), good knowledge scores of the common eye diseases were documented while skills in recognizing common eye diseases and their management were weak and practices of eye care was often not according to guidelines.

Also, in a study on eye care among primary school teachers, a huge gap of knowledge and practices among the population was documented regarding eye care, and it demonstrate an essential area of need for improved strategies to train teachers and students about the importance of eye health and the importance of proper hand washing, good nutrition, and other preventive measures for their eye care (Habiba et al, 2017).

2.4 Attitude towards preventive eye care among commercial motorcycle riders

The attitude towards taking treatment for eye disease and regular eye care have been reported to be very positive (Islam et al, 2015) and there was no difference in attitudes between age groups or level of education. However, the people with sufficient funds most of the times were almost twice more likely to have positive attitudes towards eye care compared to those with insufficient funds. Most people do not go for eye care or visit the healthcare facility for eye examination.

Provision of effective and accessible eye care services is a key for effectively controlling visual impairment including blindness and positive attitude of individual and is also instrumental in good eye care. The WHO recommended that preference should be given to strengthening eye care services through their integration into the health system rather than through their provision in the vertical programme approach. There is ample evidence that comprehensive eye care services need to become an integral part of primary health care and health systems development (WHO, 2013).

In a recent study on attitudes towards eye care by Islam et al (2015), majority of the participants in the study area had never had a previous eye examination and just two per cent of the people reported having had an eye check within the previous year, and another 2% reported having 2–3 eye checks per year. However, of those who had regular eye checks, 62% reported to have an eye problem. People with secondary school certificate or above level of education compared to those

with no schooling and people with sufficient funds most of the time compared to people with insufficient funds and are more concern about their eye health.

In a Nigerian study on the level of knowledge of glaucoma and attitudes toward prevention and treatment of blindness, it was reported that people with a relative who had a diagnosis of glaucoma, older people, females, and people with correct knowledge of common eye diseases were significantly more likely to have good attitude towards eye care and to be practicing good eye care practices (Adegbehingbe and Bisiriyu, 2008).

In a study among eye care provider in Nigeria, Ogbonnaya et al, (2016) reported that attitude of Nigerian Ophthalmologists to glaucoma screening was high but actual screening practice was below expectation in view of their presumed high knowledge of the risk of blindness from glaucoma while the perception towards glaucoma screening was found to be high. There was no correlation between positive perception/glaucoma screening practice and sex, age group, religion, professional status, positive family history, and presence of myopia. This highlights the need for an in-house promotion campaign by eye health educators aimed at enhancing self-eye care of even the eye care providers. In addition, affordable high technology-based glaucoma screening should be made possible through provision of effective health insurance program by government and health care policy makers in Nigeria (Ogbonnaya et al, 2016). The study also observed that 48.7% of participants had regular and routine eye examination and glaucoma screening while a small but modest 14.8% have never received an eye examination or glaucoma screening tests which unequivocally suggests that knowledge do not necessarily translate to positive attitude or behavioral/screening practice.

2.5 Practice of preventive eye care among commercial motorcycle riders

Drivers are critical to road safety. Commercial drivers and motorcyclists are responsible for their safety as well as the safety of all the people who share the road with them (Federal Motor Carrier Safety Administration, 2016). The medical and safety precautions they take such as good eye care practice, to maintain eligibility to drive confirms their ability to safely perform the demanding job of commercial vehicle driving and keeping the roads safe.

At the Sixty-first World Health Assembly in 2008, Member States requested that an action plan be developed that would address the eye-health agenda, and complement the existing Action plan for the global strategy for the prevention and control of non-communicable diseases (WHO, 2010). In order to prevent avoidable visual impairment at the community level, it is necessary for primary eye-care services to be strengthened. At the national level, provision of adequate eye-care services requires the development of specific human resource skills, technology and infrastructure. Also, further development of sustainable, affordable, equitable, and comprehensive eye-care services as an integral part of national health systems is needed (WHO, 2010).

Poorer populations are more affected by visual impairment including blindness (WHO, 2013). Therefore, in order to ensure effective eye care for members of the global population, the World Health Organization at the 65th world health assembly in 2011 developed an Action plan for the prevention of avoidable visual impairment for the period of 2014-2019 (WHO, 2013). The global eye health action plan is built using the health system approach, which encompasses the integration of eye care programs into the wider health care system at all levels (primary, secondary, and tertiary).

Routine eye examination especially targeting individuals with identifiable risk factors for the purpose of pre-symptomatic or early detection of glaucoma and appropriate treatment are the recommended practice for prevention of blindness from glaucoma. This is because the loss of vision often occurs gradually over a long period of time, and symptoms only occur when the disease is quite advanced (Altangerel, Nallamshetty, Uhler, Fontanarosa, Steinmann, Almodin, Chen and Henderer, 2009).

The prevalence of visual impairment and various eye diseases can be reduced greatly by providing health education and awareness on eye care in primary health care centers and through regular visits to ophthalmologist and optometrist by members of the community. Also, every individual especially those with outdoors work especially commercial motorcyclists, drivers and artisans should always practice regular eye care by ensuring the preventive eye care practices like the use of protective eye wears (Goggles), routine eye screening, reduced exposure of eyes to ultraviolet radiation from the sun and the avoidance of dust entering into the eyes (Thevi, Basri and Reddy, 2012).

Eyes are an area where micro-organisms potentially can gain access into the body (Glasper & Richardson 2010). However, there is usually no need to clean the eye due to their natural self-regulatory process, as the conjunctiva is protected by a film of tears (containing antibacterial properties) and the constant blinking mechanism of the eyes flushes and cleanses the eye surface (Harrison 2006).

2.6 Barriers to the practices of preventive eye care

Identified barriers militating against preventive eye care in a study in Saudi Arabia was found to include distance to healthcare facilities, high cost, fear, complacency, preoccupied with job and gender preference of care giver (Al-Alawi, Al-Hassan, Chauhan, Al-Futais and Khandekar,

2016). A lot of other barrier factors have been identified to affect the practice of preventive eye care. These factors include inadequate knowledge about basic symptoms, risk factors and treatments for common eye diseases and conditions including glaucoma, lack of awareness about the importance of routine preventive care, cost for eye examination, co-pays, and spectacles, transportation challenges, and communication and trust issues with the doctor and staff (Alexander, Miller, Cotch and Janiszewski, 2008).

Factors associated with lower awareness regarding common eye diseases were increasing age, lack of formal schooling, and lower socio-economic status. A lower proportion of people with no schooling compared to those who had attained at least secondary school certificate education did not know that vision loss could be prevented and care less about eye care (Islam, Chakrabarti, Islam, Finger, and Critchley, 2015).

The top four most frequently mentioned barrier to eye care problems in a study by Owsley et al (2006) include clinic accessibility, cost, trust in the doctor, and insurance, which together accounted for approximately three fourths (77%) of all problem. Comments made in a focus group discussion in a study on perceived barriers to care and attitudes about vision and eye care with older African - Americans and eye care providers (Owsley et al, 2006) revealed that attitudes toward eye care were reported positive.

2.7 Theoretical framework of knowledge and preventive eye care practices among commercial motor cycle riders.

The theoretical framework to be adopted for this study will be the PRECEDE-PROCEED Model as was postulated by Green Lawrence (1974). Only the **PRECEDE** aspect of this framework will be employed for the diagnosis of the research problem. The PRECEDE is an acronym that represents **P**redisposing, **R**einforcing, and **E**nabling **C**onstructs for **E**ducational **D**iagnosis and **E**valuation. This model will be used in this study as follows;

Predisposing Factors: These are the antecedents to behavior that provides the rationale for the behavior. They refer to those intrinsic factors that are unique to the research participants and make them liable of practicing preventive eye care. These include but not limited to awareness, knowledge, attitudes, perceptions, level of income and present eye health condition. Most commercial motorcycle riders do not have enough knowledge about the relevance and importance of eye care. Predisposing factors have the potential to influence the decisions people take over their health and their given health behavior. They do this by encouraging the behavior or by inhibiting the behavior from occurring.

Enabling Factors: These are also antecedent to behavior that influences the realization of motives, aspirations, and decisions of an individual. They are environment bound factor which enable action for or against the practice of eye care. These include skills, level of education, financial resources, time, healthcare facilities, trust in the healthcare system and ability to make informed choices about personal health.

Reinforcing Factor: These comprises of the feedback or influence of the significant other or people that influence the continuance or discontinuance of a particular behavior. Examples of these factors include peer pressure, siblings, co-motorcyclists, peer- groups, social support group, social media and mass media. They are also factors that are subsequent to behavior, provide perpetual rewards or incentives for the behavior and contribute to its persistence or extract.

2.8 Theoretical framework

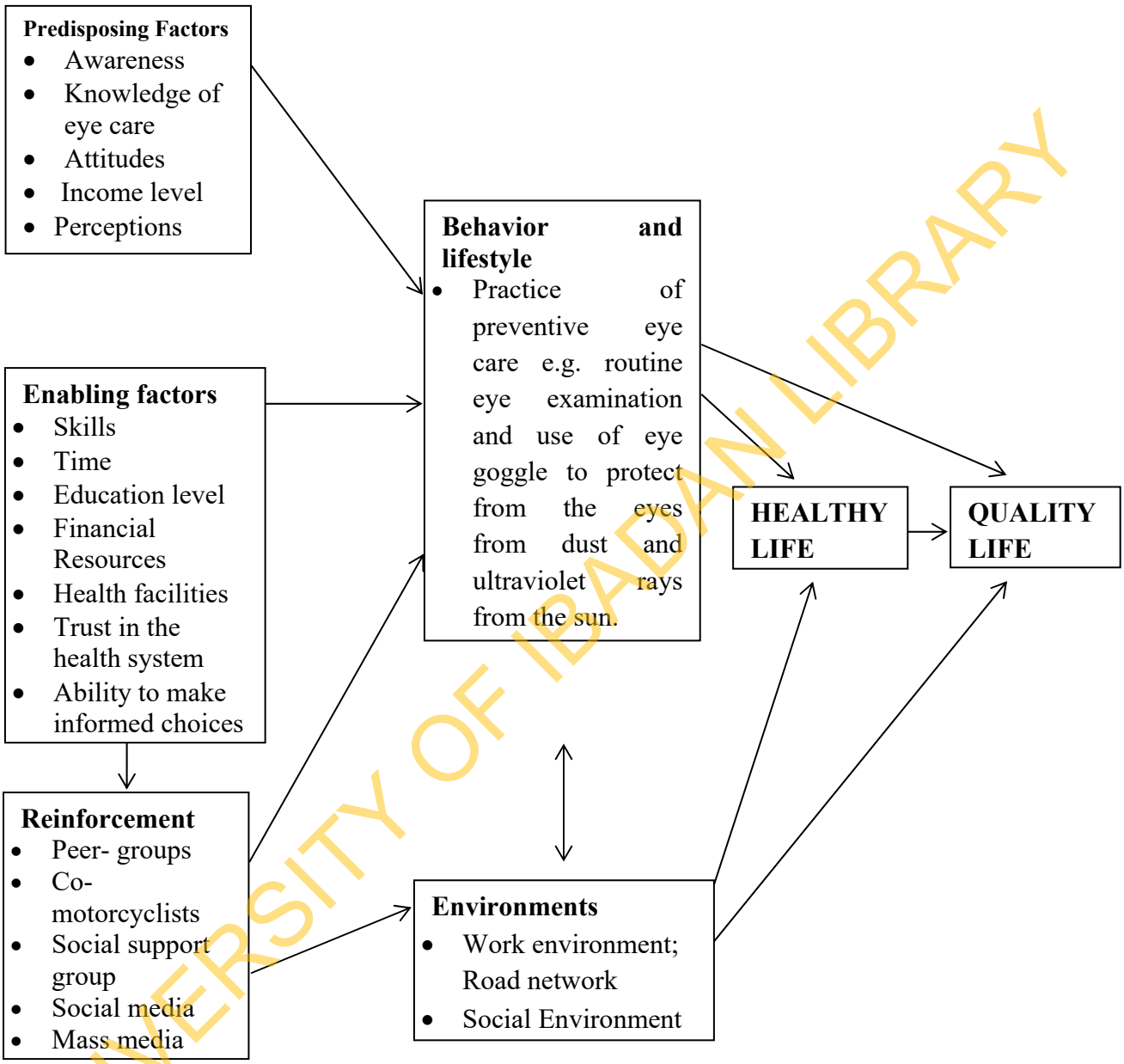

Figure 2.1: Theoretical framework for knowledge and preventive eye care practices among commercial motor cycle riders.

CHAPTER THREE

METHODOLOGY

3.1 Study Design

The study design that was used to assess the knowledge and preventive eye care practices of commercial motor cycle riders in Ibadan South West Local Government area, Ibadan, Oyo State, Nigeria was a descriptive cross – sectional study design.

3.2 Scope of Study

The scope of the study covered the knowledge and preventive eye care practices and also the ocular health status among/of commercial motor cycle riders in Ibadan South West Local Government Area, Ibadan, Oyo State, Nigeria.

3.3 Study Area

The study area is Ibadan South West Local Government Area, Ibadan, Oyo State, Nigeria. It is a local government area in Oyo State, Nigeria with its administrative headquarters located at Oluyole Estate, Ibadan. Its popular areas includes; Ringroad, Oke-Ado, Okebola, Gege etc. it covers a landmass of 1333,500 square kilometers with a population density of 2,401 persons per square kilometre (National Population Commission), (National Bureau of Statistics). The estimated population for the area projected at 320,536 people using a growth rate of 3.2% from 2006 census. The local government is bounded to the North by Ibadan North West and Ido Local Government Areas, by Oluyole Local Government Area to the South, by Ido Local Government Area in the West and Ibadan North and South- East in the East.

There are no serious farming activities in the area for the fact that it is mainly an urban centre. Most of the agricultural products planted outside the area are being processed in the area. Some organized companies and farms such as Zartech, Avians, Ajanla farms practice poultry. The local government is a home for small, medium and large scale industries amongst which are Yale Foods Nigerian Limited, Caps Feed Nigeria Limited, Sumal Foods Nigeria Limited, Ringroad, Vital Foods Nigeria Limited, Ringroad etc. The Local Government is dominated by the Yorubas and there is presence of other tribes who engage in different types of economic activities.

Ibadan South West Local Government Area is divided into 12 wards.

In terms of road transportation, aside the main road that runs through this area, most of the roads are not tarred. These roads are earthen and can hardly accommodate more than one vehicle at a time. Streets are hardly provided with drainages and are regularly over flooded during the rainy seasons.

3.4 Study Population

The target population for this study comprised of male commercial motor cycle riders in Ibadan South West Local Government Area, Ibadan, Oyo State, Nigeria.

3.5 Sample Size Determination

The sample size was calculated using Leslie Kish's formula

- $n=Z^2Pq/d^2$
- n= minimum sample size
- Z=1.96
- P= Prevalence of refractive errors and attitude to spectacle use among drivers of public institutions in Ibadan at 16.7% on average (Bekibele et al., 2007)
- q=1-p, then ,q=1- 0.167 =0.833
- d=5% level of significance
- $n= \underline{1.96^2 \times 0.167 \times 0.833 = 214}$
- 0.05^2
- Adding 10% for non response rate: 214+21.4 = 235.

3.6 Sampling Technique

Multistage sampling technique was used in this study. It involved the following stages:

- Stage 1: Ibadan Southwest Local Government Area was stratified into strata namely; inner core, transitory and peripheral. The total number of motorcycle parks in the entire stratum was determined. Proportionate method was then used to select the number of motorcycle parks that was used for the study.
- Stage 2: Purposive sampling technique was used to select the actual motorcycle parks that were used for the study.

- Stage 3: Proportionate method was also used to determine the number of respondents to be selected in each motorcycle park based on the total population of motorcycle riders in all the selected motorcycle parks and the total sample size. After which, simple random sampling (balloting) was used to select actual participants who participated in the study.

3.7 Training of Research Assistants

Four research assistants comprising of two Doctors of Optometry and two Masters in Public Health (MPH) students were recruited for the study. They were trained for a day on objectives of the study, methods and ethics procedures to be adopted in completing the questionnaire and carrying out ocular examination for/on the respondents.

3.8 Methods for Data Collection

3.8.1 Development of instruments and methods for data collection

A quantitative method of data collection was used for this study. It involved the use of semi-structured, interviewer-administered questionnaire. The questionnaire was divided into five sub-sections (Section A-E), to explore demographic characteristics of the respondents, knowledge of preventive eye care, attitude towards preventive eye care, practice of preventive eye care, barriers to the practice of preventive eye care and ocular health status of the respondents. The questionnaire was read by the interviewer to each respondent in the local language (Yoruba or Hausa) that the respondent understands. Respondents also gave responses in same local language, which was translated by the interviewer to English Language and ticked/written on the questionnaire.

Also ocular examination was carried out to determine the ocular health status of the respondents using the visual acuity chart, penlight and opthalmoscope. The visual acuity chart was used to measure the visual acuity (measure of how well a person sees) of each respondent, the penlight

was used to check the external structures of the eye for medical conditions such as pterygium, pinguecula, lid abnormalities etc. Medical conditions such as glaucoma, cataract and retinal/macula degenerations were checked for and assessed using the ophthalmoscope.

3.8.2 Validity of the Instrument

3.8.2.1 Content Validity

This is the extent to which an instrument represents all facets of a given construct. This was ensured by consulting relevant literature during the draft of the instrument and matching the items on the instrument with stated objectives, research questions and hypotheses during the design of the instrument.

3.8.2.2 Construct Validity

This is the degree to which a test/instrument measures what it claims or purports to measure.

This was ensured by making sure variables in the theoretical framework were represented in the instrument.

3.8.3 Reliability of instrument

Reliability is the accuracy or precision of a research-measuring instrument. The questionnaire was measured for quality and consistency. To measure the reliability of the instrument, it was translated into Yoruba language (which is the local language of the target population- Appendix III & IV) by a Yoruba language expert. It was then pre-tested among 24 motor cycle riders (10% of the total sample size) at Ibadan North Local Government Area, a representative of the study population to ascertain suitability and appropriateness to field situations, determine whether the questions were clear and simple enough for participants' comprehension and determine the trend in the response of participants and the amount of time it took to administer the questionnaire. At the end of the exercise, items that were not easily understood were reframed, those that were

found to be irrelevant were removed and adequate spaces were provided for responses. The pretest questions were analyzed using the SPSS Version 22. The reliability of the questionnaire was tested using the Alpha Cronbach's reliability test and the result was 0.695.

3.9 Ethical considerations

Approval for the study was given by the Oyo State Research Ethics Review Committee before the commencement of data collection (AD 13/479/1006, Appendix VIII). Written informed consent of the respondents was sought, their rights were protected and information received was kept confidential. In ensuring that confidentiality is maintained, the names and addresses of the respondents was not written on the questionnaire. The right and integrity of the respondents was fully protected. The data collected was securely kept to prevent unauthorized access and loss of the materials.

3.10 Data Management and Statistical Analysis

In managing and analyzing the data collected the data were sorted and checked for completeness, the questionnaires were then numbered for recall and good control purposes; a good coding guide was also developed for the questionnaire and data were manually coded and entered into the computer. All the questionnaires were packed in bundles according to serial numbers and kept in a safe box to ensure safety and maintain confidentiality. More so there may be need to refer to them in the course of the research process.

Data entering and analysis was done using IBM Statistical Packages for Social Sciences (SPSS) version 21. Knowledge variables were measured on a 15-point scale. Each correct answer had a score of one (1) for the closed ended questions and two (2) for the open ended questions. Incorrect answers, I don't know and no response each was assigned zero (0) score. The scores

were then summed up to give a composite knowledge score for each respondent. Knowledge scores were categorized into poor knowledge (<8 points), fair knowledge (≥8<11 points) and good knowledge (≥11 points).

Also, attitude towards preventive eye care was measured on a 12-point scale; score of <9 was classified as negative attitude while score of ≥ 9 was classified as positive attitude and practice of preventive eye care was measured on a 14-point scale; score of <11 was classified as poor practice while score of ≥ 11 was classified as good practice.

Frequency and percentage tables were generated and cross tabulations of some variables done using Chi-square (X^2) and Fisher's Exact test. The research hypotheses were tested to establish significant relationship between independent and dependent variables using the chi-square and fisher's exact test at 5% probability level for rejecting the null hypotheses. Cross tabulation of dependent and independent variables was also done to establish relationship between the variables. The results were presented in tables.

3.11 Study Limitations

The study population is a group of people who are always busy and on the move, getting them at their park to collect data was challenging. However, this was overcome by going through their union/association leaders and chairmen and offering to give eye health talk to educate and enlighten the motorcycle riders on good eye health habits. Also the motorcycle riders were excited at the thought that they were going to be having their eyes examined for free by Doctors of Optometry and this made them participate voluntarily in the research.

CHAPTER FOUR

RESULTS

4.1 Socio-demographic characteristics of respondents

Overall, a total of 235 commercial motorcycle riders participated in this study. The mean respondents' age was 37.6±8.0 years with maximum and minimum age of 59 and 20 years respectively. Majority (62.6%) had secondary school education and 85.1% were married. While 52.3% were Muslims, 46.8% were Christians and 0.9% African traditionalists. Also, most (90.2%) were from the Yoruba ethnic group, 5.1% Hausa and 4.7% Igbo. Most (83.0%) of the respondents have been riding motorcycle for commercial purpose for at least 10years. Whereas 59.1% have been involved in a road traffic accident at one time or the other, 68.1% were aware that eye test can be accessed through an eye Doctor. Majority (78.7%) were aware that eye test is important for commercial motorcycle riders and 67.7% had never had an eye test.

Table 4.1: Socio-demographic profile of respondents N=235

Variables		No	%
Age of respondents (in years)	20-29	33	14.0
	30-39	104	44.3
	40-49	77	32.8
	50-59	21	8.9
Educational qualification	Never went to school	12	5.1
	Primary	43	18.3
	Secondary	147	62.6
	Tertiary	33	14.0
Marital Status	Single	29	12.3
	Married	200	85.1
	Separated	4	1.7
	Divorced	2	.9
Religion	Christianity	110	46.8
	Islam	123	52.3
	African traditionalist	2	.9
Ethnicity	Yoruba	212	90.2
	Hausa	12	5.1
	Igbo	11	4.7
Years of riding motor cycle	1-10	195	83.0
	11-20	37	15.7
	21-30	3	1.3
Ever been involved in a road traffic Accident	Yes	139	59.1
	No	96	40.9
Awareness that eyes can be tested by an eye doctor	Yes	160	68.1
	No	75	31.9
Eye test is important as a commercial motorcycle rider	Yes	185	78.7
	No	50	21.3
Ever had an eye test			
	Yes	76	32.3
	No	159	67.7

Mean age=37.6±8.0years; Maximum age=59years and Minimum age=20 years.

4.2 Knowledge of preventive eye care

Respondents' knowledge on preventive eye care is presented in figure 4.1. While few (39.6%) had fair knowledge, 37.9% had good knowledge and 22.6% had poor knowledge on preventive eye care. The mean knowledge score was 9.6±2.9 points with minimum and maximum score of 0 and 15 points respectively.

Majority (67.7%) of the respondents had knowledge of the benefits of having an eye test at least once a year and most (82.7%) reported benefits of eye test was 'to preserve vision/prevent blindness.' Sources of information on eye health as reported by the respondents include hospital (63.5%), radio (44.1%), television (28.2%) and newspaper (14.1%). Other sources include internet, health facilities and at seminars. As reported by the respondents, ways to protect the eyes while riding motorcycle include wearing of helmet (76.2%), wearing of recommended glasses (75.8%), use of protective sunglasses (40.7%) and use of face cap (17.7%). Other protective measures reported were; use of right medication, intake of good diet and having regular eye check-up.

On knowledge of the reasons why it is good for commercial motorcycle riders to protect their eyes, it was reported by majority (71.1%) that 'it will help protect the eyes from dust', 38.3% reported 'it will aid vision and prevents accidents', 30.3% reported 'it will protect the eyes from wind/insects' and 10.0% reported 'it would protect the eye from any form of environmental hazards'. The list of foods that help to improve and maintain vision as reported by the respondents include fish, egg, fruits, vegetables, nut, locust beans, plantain, rice and onions.

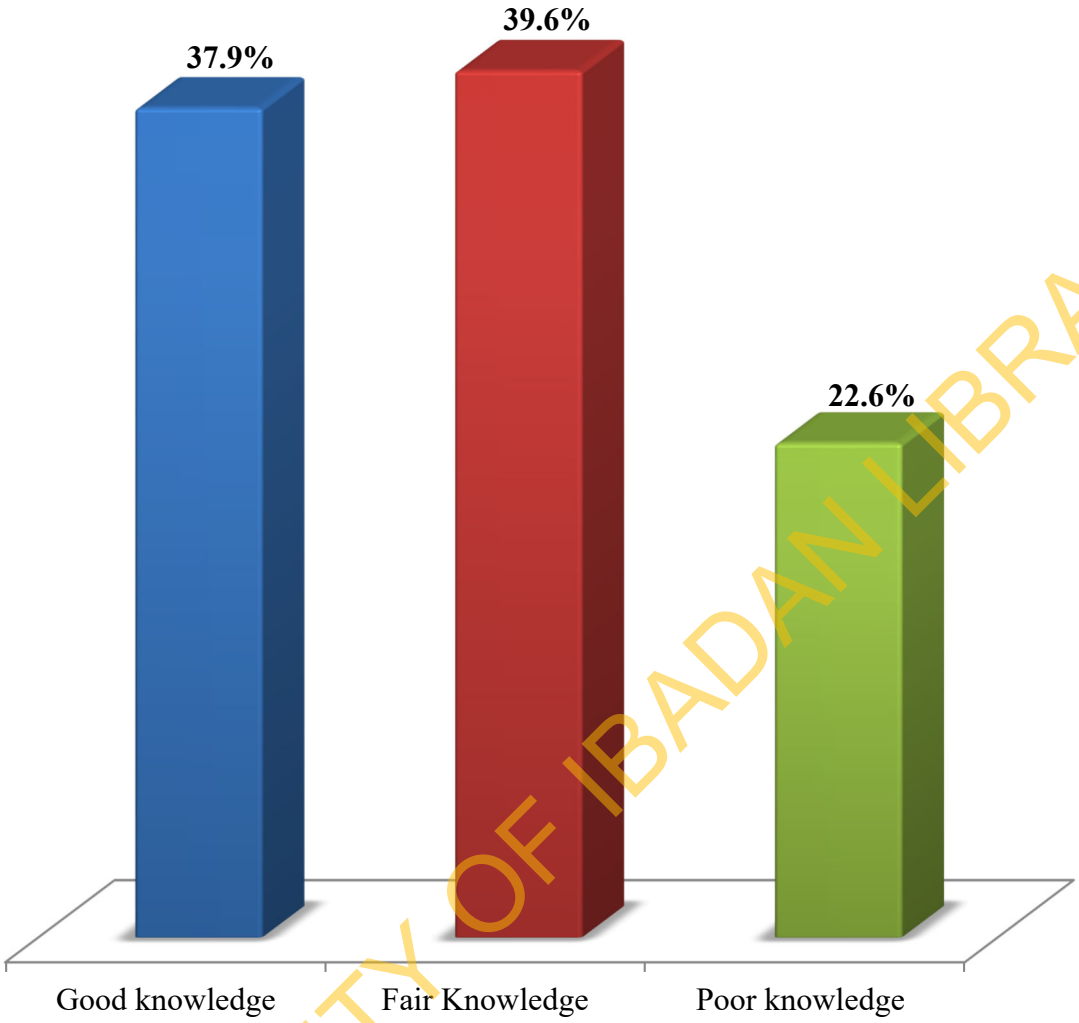

Figure 4.1: Knowledge of respondents on preventive eye care (N = 235)

4.3 Attitude towards preventive eye care

The respondents' attitude towards preventive eye care is presented in table 4.2. Majority (75.3%) had good attitude and 24.7% had poor attitude towards preventive eye care. The mean attitude score was 10.2±2.8 points with minimum and maximum scores of 0 and 12 respectively. While 77.9% were comfortable wearing protective sunglasses when riding motorcycle, 22.1% were not. 70.6% reported they would be comfortable wearing eye glasses if recommended for their eye sight. Most (97.0%) of the respondents can encourage other commercial motorcycle riders to eat regularly, foods such as fruits, vegetables, fish and eggs that are good for eye sight and 94.0% can encourage other commercial motorcycle riders to wear protective sunglasses when riding motorcycle. 84.0% of the respondents supported commercial motorcycle riders wearing recommended eyeglasses when riding motorcycle and 87.7% can encourage other commercial motorcycle riders to have their eyes checked regularly by a specialist.

Table 4.2: Respondents' Attitude towards preventive eye care

N=235

Attitude statements	Yes No (%)	No No (%)
Are you comfortable wearing protective sunglasses when riding your motorcycle?	183 (77.9)	52 (22.1)
I will be comfortable wearing eye glasses if they are recommended for my eye sight	166 (70.6)	69 (29.4)
I can encourage other commercial motorcycle riders to eat foods such as fruits, vegetables, fish and eggs that are good for eye sight regularly	228 (97.0)	7 (3.0)
I can encourage other commercial motorcycle riders to wear protective sunglasses when riding motorcycle	221 (94.0)	14 (6.0)
Do you support commercial motorcycle riders wearing recommended eyeglasses when riding motorcycle?	198 (84.3)	37 (15.7)
I can encourage other commercial motorcycle riders to have their eyes checked regularly by a specialist	206 (87.7)	29 (12.3)

Table 4.3: Respondents' Attitude score

N=235

Attitude Score (AS)	**Frequency**	**%**
Positive Attitude (≥9)	177	75.3
Negative Attitude (<9)	58	24.7
Total	235	100.0

Mean attitude score= 10.2±2.8; Minimum score=0.0, maximum score =12.0

4.4 Respondents' Practice of Preventive Eye Care

The respondents' practice of preventive eye care is presented in table 4.4. Majority (76.6%) had poor practice while 23.4% had good practice of preventive eye care. The mean practice score was 7.1±3.9 points with minimum and maximum score of 0 and 14 points respectively.

While 64.7% of the respondents always wore protective sunglasses when riding motorcycle, 26.8% had their eyes checked at least once a year by a specialist, 34.9% wore eyeglasses for eyesight and 49.4% did physical exercise at least once a week. Also, only 32.3% go to the eye doctor to have eyes checked/tested when they experienced problems with their eyes and 47.7% avoided self-medication whereas 52.3% indulged in self-medication. More so, some (47.3%) ate foods such as fruits, vegetables, fish and eggs more than four times in a week, 42.1% ate it four times and 10.6% ate it only once a week.

Table 4.4: Respondents' Practice of Preventive Eye Care

N=235

Preventive Eye care practices	**Yes** **No (%)**	**No** **No (%)**
I always wear protective sunglasses when riding my motorcycle	152 (64.7)	83 (35.3)
I have my eyes checked at least once a year by a specialist	63 (26.8)	172 (73.2)
I wear eyeglasses for my eyesight	82 (34.9)	153 (65.1)
I do physical exercise at least once a week because I know it is good for my eyesight	116 (49.4)	119 (50.6)
I go to the eye doctor to have my eyes checked/tested when I experience problems with my eyes	76 (32.3)	159 (67.7)
I avoid self-medications	112 (47.7)	123 (52.3)
I eat foods such as fruits, vegetables, fish and eggs (In a week)	Once Four times >four times	25 (10.6) 99 (42.1) 111 (47.3)

Table 4.5: Respondents' Practice score

N=235

Practice Score (PS)	**Frequency**	**%**
Good Practice (P≥9)	55	23.4
Poor Practice (P<9)	180	76.6
Total	235	100.0

Mean attitude score= 7.14±3.9; Minimum score=0.0, maximum score =14.0

4.5 Respondents' Perceived Barriers to Practice of Preventive Eye Care

The respondents' perceived barriers to practice of preventive eye care are presented in table 4.6. Lack of money/cost of eye test was reported by 34.9% of the respondents as barriers that prevent commercial motorcyclist from having an eye test, 26.4% reported lack of time while 22.6% reported it was because they feel they had no eye problem.

Reasons why commercial motorcycle riders do not wear protective sunglasses when riding motorcycle as reported include; poor awareness of the importance (23.8%), non –affordability (20.0%), uncomfortable to use (14.5%), Negligence (7.2%) and 11.5% feel nothing could happen to their eye. On why commercial motorcycle riders don't go to a specialist for eye test at least once a year, it was reported that it is because eye test was expensive (34.9%), lack of time (32.3%) and poor awareness on eye care (3.8%).Other reasons was because they feel they have no eye problem.

Table 4.6: Perceived Barriers to Preventive Eye Care Practices (N=235)

Barriers Statements	Responses	No	%
What can prevent commercial motorcycle riders from having an eye test	-Lack of money/cost of eye test	82	34.9
	-No time to go for the test	62	26.4
	-When there is no problem with the eyes	53	22.6
	-Not knowing where to go for an eye test	1	0.4
	-Nothing	37	15.7
Perception about commercial motorcycle riders who wear recommended eyeglasses while riding their motorcycle	-I think it is good because it will aid their vision and help them to see clearly	120	51.1
	-It will help to cover their eyes and protect it from dust, wind, sunlight and insects.	64	27.2
	-I don't like it	20	8.5
	-No opinion	31	13.2
I would wear recommended eyeglasses while riding my motorcycle if I am advised to do so by an eye doctor	-Yes	185	78.7
	-No	50	21.3
Reasons why commercial motorcycle riders would wear recommended eyeglasses	-It will aid vision and help to see clearly	126	53.6
	-It will also help to cover the eyes and protect it from dust, wind, sunlight and insects.	33	14.0
	-No reason	76	32.4
Reasons why commercial motorcycle riders do not wear protective sunglasses when riding their motorcycle	-Poor awareness of the importance	56	23.8
	-Some of them feel they will not see clearly to ride their motorcycle if they wear it	18	7.7
	-Non-affordability	47	20.0
	-They feel nothing can happen to their eyes	27	11.5
	-Negligence	17	7.2
	-It is not comfortable to use	34	14.5
	-No idea	36	15.3
Reasons why commercial motorcycle riders do not go to a specialist for eye test/ examination at least once a year	-Awareness on eye care is poor	9	3.8
	-They do not know the right professionals that provide eye care.	4	1.7
	-They feel they have no problem with their eyes	51	21.7
	-Eye test is expensive	82	34.9
	-No time	76	32.3
	-No idea	13	5.6
Reasons why commercial motor cycle riders do not eat foods such as fruits, eggs and vegetables which are good for their eyesight always	-They do not know the importance and benefits of those foods	111	47.2
	-They do not have the money to purchase them	94	40.0
	-No idea	30	12.8

4.6 Respondents Ocular health status

The respondents' visual screening result is presented in table 4.7.1. For visual acuity test at 6m, 73.2% of the respondents had no refractive error in both eyes while 27.8% had refractive error on the right and left eyes. Visual acuity at 40cm showed that 57.4% had good vision for both eyes while 42.6% have the presence of Presbyopia.

On external examination of the eye using a penlight as shown in table 4.7.2, 4.4% and 26.2% of the respondents show presence of Pinguecuela, Pterygium in both eyes respectively while 3.4% had brown discoloration of the conjunctiva, 12.6% showed the presence of Pterygium that has already advanced towards and encroached on the cornea.

Also as presented in table 4.7.3, on internal examination of the eye using the ophthalmoscope, conditions such as lens opacity (cataract) (3.1% right eye, 2.1% left eye and 1.6% both eyes) and glaucoma (1.0%) together with other retinal abnormalities (1.0 and 0.6%) were observed among the respondents.

Table 4.7.1: Respondents' visual screening test

N=235

Visual Acuity		**No Refractive Error**	**Presence of refractive error**
		No (%)	**No (%)**
@6m	Right eye	165 (70.2)	70 (29.8)
	Left eye	170 (72.3)	65 (27.7)
	Both eyes	172 (73.2)	63 (27.8)
		No Presbyopia	**Presence of Presbyopia**
@40cm	Right eye	131 (55.7)	104 (44.3)
	Left eye	132 (56.2)	103 (43 .8)
	Both eyes	135 (57.4)	100 (42.6)

Table 4.7.2: Respondents' external eye examination (Using the penlight)

N=235

		No Abnormality Detected (NAD) No (%)	**Pinguecuela No (%)**	**Pterygium No (%)**	**Brown discolouration No (%)**
Lids	Right eye	235 (100.0)	NA	NA	NA
	Left eye	235 (100.0)	NA	NA	NA
	Both eyes	235 (100.0)	NA	NA	NA
Conjunctiva	Right eye	155 (66.3)	13 (5.4)	67 (28.3)	NA
	Left eye	158 (67.2)	12 (4.9)	65 (27.9)	NA
	Both eyes	155 (66.0)	10 (4.4)	62 (26.2)	8 (3.4)
Cornea	Right eye	200 (85.4)	NA	35 (14.6)	NA
	Left eye	205 (87.4)	NA	30 (12.6)	NA
	Both eyes	205 (87.4)	NA	30 (12.6)	NA
Pupil	Right eye	235 (100.0)	NA	NA	NA
	Left eye	235 (100.0)	NA	NA	NA
	Both eyes	235 (100.0)	NA	NA	NA

NA = Not Applicable

Table 4.7.3: Respondents Internal eye examination (Using the Ophthalmoscope)

N=235

		No Abnormality Detected (NAD)	**Opacity**	**Glaucoma and other retinal abnormalities**
		No (%)	**No (%)**	**No (%)**
Lens	Right eye	227 (96.4)	7 (3.1)	NA
	Left eye	229 (97.4)	5 (2.1)	NA
	Both eyes	230 (97.9)	4 (1.6)	NA
Macula	Right eye	231 (98.0)	NA	4 (2.0)
	Left eye	231 (98.0)	NA	4 (2.0)
	Both eyes	231 (98.0)	NA	4 (2.0)
Optic disk	Right eye	231 (98.0)	NA	4 (2.0)
	Left eye	231 (98.0)	NA	4 (2.0)
	Both eyes	231 (98.0)	NA	4 (2.0)
Retina Periphery	Right eye	232 (98.4)	NA	3 (1.6)
	Left eye	232 (98.4)	NA	3 (1.6)
	Both eyes	232 (98.4)	NA	3 (1.6)

NA = Not Applicable

4.7 Significant test of Hypotheses

Hypothesis One: There is no statistical significant difference between knowledge of respondents and their practice of preventive eye care.

Fischer exact test statistics was used to determine the difference between these two variables and was found to be statistically significant (X^2=24.035, p=0.000, df=2).

Therefore, the null hypothesis that there is no statistical significant difference between knowledge of respondents and their practice of preventive eye care was rejected.

Table 4.8.1: Knowledge of respondents and their practice of preventive eye care.

Knowledge	**Practice**		**Total**	**df**	X^2	**p-value**
	Poor	***Good***				
	No *(%)*	**No *(%)***	**No (%)**			
Poor	52 (98.1)	1 (1.9)	53 (100.0)	2	24.035*	0.000+
Fair	69 (74.2)	24 (25.8)	93 (100.0)			
Good	59 (66.3)	30 (33.7)	89 (100.0)			
Total	180 (76.6)	55 (23.4)	235 (100.0)			

*Fischer exact test Statistics was used

+Significant (p<0.05)

Hypothesis Two: There is no statistical significant difference between age of respondents and their practice of preventive eye care.

Chi-Square Statistics was used to determine the difference between these two variables and was found to be statistically significant (X^2=12.494, p=0.006, df =3).

Therefore, the null hypothesis that there is no statistical significant difference between age of respondents and their practice of preventive eye care was rejected.

Table 4.8.2: Age of respondents and their practice of preventive eye care.

Age (in years)	Practice		Total	df	X^2	p-value
	Poor	*Good*				
	No *(%)*	No *(%)*	No (%)			
20-29	27 (81.8)	6 (18.2)	33 (100.0)	3	12.494*	0.006+
30-39	69 (66.3)	35 (33.7)	104 (100.0)			
40-49	68 (88.3)	9 (11.7)	77 (100.0)			
50-59	16 (76.2)	5 (23.8)	21 (100.0)			
Total	180 (76.6)	55 (23.4)	235 (100.0)			

*Chi-Square Statistics was used

+Significant (p<0.05)

Hypothesis Three: There is no statistical significant difference between respondent's level of education and their knowledge of preventive eye care.

Fischer exact test Statistics was used to determine the difference between these two variables and was found to be statistically significant (X^2=14.86, p=0.021, df=6).

Therefore, the null hypothesis that there is no statistical significant difference between knowledge of preventive eye care and level of education was rejected.

Table 4.8.3: Level of education and their knowledge of preventive eye care.

Knowledge	Level of education				Total	df	X^2	p-value
	Never went to school	*primary school*	*Secondary*	*Tertiary*				
	No *(%)*	No *(%)*	No *(%)*	No *(%)*	No (%)			
Poor	4 (7.5)	12 (22.6)	32 (60.4)	5 (9.4)	53 (100.0)	6	14.86*	0.021+
Fair	7 (7.5)	11 (11.8)	55 (59.1)	20 (21.5)	93 (100.0)			
Good	1 (1.1)	20 (22.5)	60 (67.4)	8 (9.0)	89 (100.0)			
Total	12 (5.1)	43 (18.3)	147 (62.6)	33 (14.0)	235 (100.0)			

*Fischer exact test Statistics was used

+Significant (p<0.05)

Hypothesis Four: There is no statistical significant difference between age of respondents and their attitude towards preventive eye care.

Chi-Square Statistics was used to determine the difference between these two variables and was found to not be statistically significant (X^2=6.700, p=0.082, df=3).

Therefore, the null hypothesis that there was no statistical significant difference between age of respondents and their attitude of preventive eye care was not rejected.

Table 4.8.4: Age of respondents and their attitude towards practice of preventive eye care

Age	Attitude		Total	df	X^2	p-value
	Poor	*Good*				
	No *(%)*	No *(%)*	No (%)			
20-29	7 (21.2)	26 (78.8)	33 (100.0)	3	6.700*	0.082+
30-39	20 (19.2)	84 (80.8)	104 (100.0)			
40-49	27 (35.1)	50 (64.9)	77 (100.0)			
50-59	4 (19.0)	17 (81.0)	21 (100.0)			
Total	58 (24.7)	177 (75.3)	235 (100.0)			

*Chi-Square Statistics was used

+Not Significant (P >0.05)

Hypothesis Five:

There is no statistical significant difference between ocular health status of the respondents and their practice of preventive eye care.

Chi-Square Statistics was used to determine the difference between these two variables and was found to not be statistically significant (X^2=2.192, p=0.139, df =1).

Therefore, the null hypothesis that there is no statistical significant difference between the ocular health status of respondents and their practice of preventive eye care was not rejected.

Table 4.8.5: Ocular health status and the practice of preventive eye care.

Ocular health status	**Practice**		**Total**	**df**	**X^2**	**p-value**
	Poor	***Good***				
	No *(%)*	**No *(%)***	**No (%)**			
No refractive error	136 (79.1)	36 (20.9)	172 (100.0)	1	2.192*	0.139+
Presence of refractive error	44 (68.9)	19 (30.2)	63 (100.0)			
Total	180 (76.6)	55 (23.4)	235 (100.0)			

*Chi-Square Statistics was used

+Not Significant (p>0.05)

CHAPTER FIVE

5.0 DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 DISCUSSION

5.1.1 Socio-demographic profiles of respondents

The data collected has shown that the commercial motorcycle riders in Ibadan South-west local government area of Oyo-state are within the age range of 20 and 59 years. Most of the respondents are of the Yoruba ethnicity as expected because the study was carried out in a community that is predominantly Yoruba. While most of them had secondary school education and are married, majority were of the Islamic religion. As commercial motorcycle riders, majority of the respondents had been involved in a road traffic accident of which the lesson learnt in the process is expected to inform them of the need of adherence to road safety measures and eye care. Almost all the respondents were aware that eye test is important for commercial motorcycle riders, their practice of preventive eye care were found to be poor as majority had not even gone for eye test at any point in their life. Hence, the need for more informed education and proper intervention targeting specifically eye test services because their awareness of the importance of eye test has not translated into going for the test or practicing adequate preventive eye care.

It is pertinent to note that religion, marital status, ethnicity and years of riding motorcycle for commercial purposes are not equitably distributed in this study.

5.1.2 Knowledge of preventive eye care

The study revealed the respondents level of knowledge on preventive eye care. A simple majority had fair knowledge score while others have poor and good knowledge. Although, literature is scarce on motorcycle riders' knowledge of preventive eye care, several are available on knowledge of eye care among the general population especially the artisans. The findings from the study was not in line with a similar qualitative and quantitative study among primary healthcare workers in Northern Nigeria by Abdul Rahman *et al.,* (2015), where good knowledge scores of the common eye diseases were documented while skills in recognizing common eye diseases and their management were weak and practices of eye care was often not according to guidelines. The reasons for this disparity in the knowledge score may be due to the difference in the study population because the population in the study that good knowledge was documented was healthcare workers who have some appreciable knowledge of health information and training, whereas, this study was among commercial motorcycle riders with majority having only secondary school education.

Meanwhile, this study was in consonance with a recent finding by Habiba *et al*, (2017) among primary school teachers where a huge gap of knowledge was documented. This demonstrates an important area for concern and the need for improved educational strategies and intervention to train commercial motorcycle riders (who are outdoor workers) about the importance of eye health and the significance of good nutrition, going for regular and proper eye check, wearing protective sunglasses when riding their motorcycle, avoiding self-medications when they experience any health challenges with their eyes, proper hand washing, personal hygiene and other preventive measures for their eye care.

There was a statistically significant difference between knowledge of respondents on practice of preventive eye care and their level of education. This was an indication that increased knowledge influenced the practice of preventive eye care and the level of education makes an individual to be more informed and practice preventive eye care. This is why appropriate health education is pertinent.

5.1.3 Attitudes towards preventive eye care

While various studies have been conducted among the general population and other groups on attitudes towards preventive eye care, few have been specifically focused on commercial motorcycle riders. In this study, good attitude was documented because majority of the respondents were willing to and comfortable wearing protective sunglasses when riding motorcycle and can also encourage others to do so. This was in-line with the report of Islam *et al* (2015) who stated that attitudes towards taking care of the eye are positive and good across board. Although, the people with sufficient funds most of the times were almost twice more likely to have positive/good attitudes towards eye care compared to those with insufficient funds (Islam *et al*, 2015). Provision of effective and accessible eye care services will be a key for effectively controlling any form of visual impairment including blindness and positive attitude of individual will be instrumental in the practice of preventive eye care. This study was also in agreement with the findings among Nigerian Ophthalmologists, where Ogbonnaya *et al*, (2016) reported high/good attitudes among the eye care providers in Nigeria while actual screening practice was found to be below expectation in view of their presumed high knowledge of the risk of blindness from glaucoma, for example.

5.1.4 Practice of preventive eye care

This study clearly indicated that majority of the respondents did not practice preventive eye care. In fact, most of the respondents had poor practice score. Commercial drivers and motorcycle riders are responsible for their safety as well as the safety of all the people who share the road with them (Federal Motor Carrier Safety Administration, 2016). The medical and safety precautions they take such as good eye care practice, to maintain eligibility to drive will confirm their ability to safely perform the demanding job of commercial vehicle driving and keeping the roads safe. Majority of the respondent did not always wear protective sunglasses when riding motorcycle, have eyes checked at least once a year by a specialist, do physical exercise at least once a week, go for eye test or eat foods such as fruits, vegetables, fish and eggs regularly. This inability to regularly practice this preventive eye care might be the reason for the increasing prevalence of eye problem even among the general population. This is also a pointer for the need to motivate motorcycle riders and even the general population on preventive eye care practices as it is in a general saying, 'prevention is better than cure'.

5.1.5 Perceived Barriers to Preventive Eye Care Practices

Lack of money and cost of eye test was identified by majority of the respondents as one of the barriers to preventive eye care. This factor was in line with what was reported by Al-Alawi *et al*, (2016) in a study in Saudi Arabia where the barrier militating against preventive care practices were found to include high cost, fear, complacency, preoccupied with job and gender preference of care giver. Issues of poor awareness of the importance of eye care and ignorance about eye care practices were also reported by respondents as barriers. The poor awareness issue can be attributed to the inadequate education that most of the respondents have, and this can be

supported by the claim by Islam *et al*, (2015) who said a lower proportion of people with no schooling compared to those who had attained some higher level of education did not know that vision loss or eye defect could be prevented and they care less about eye care. To be able to mitigate some of these barriers, more investment is needed in the health sector and especially in the eye care unit. There is also the need to make/enable individuals especially commercial motorcycle riders gain control over their health especially in the area of eye care.

5.1.6 Ocular Health Status/Visual Screening Test

It is worthy of note to state that the majority of the respondents didn't have refractive error in both eyes as discovered from the visual acuity test. However, on external examination of the eye with a penlight, some of the respondents have the presence of Pinguecuela and Pterygium on their conjunctiva and cornea for already encroaching Pterygium. Some also have a brown discolouration of the conjunctiva in both eyes. This is in concordance with a study conducted by Achigbu et al among commercial motorcycle riders in South Eastern Nigeria where a 19.3% prevalence of pterygium was found among the study group. Also, Ukponmwan et al in another study among motorcyclist in Benin City, Nigeria found out a high prevalence (12.5%) of pterygium among the motorcyclists. The reason for the high prevalence of the disease among this group in both studies was because; they are exposed all day to the cause of the defect, which are dust, smoke, wind, and sunlight. This disease is a patch of tissue that obstructs vision by developing sideways from the conjunctiva, and ends up obstructing vision when it encroaches on the cornea and get to the centre of the eye (the pupil) where it obstructs light entering the eye. Once it develops, surgery is the only solution. The best prevention was said to include limiting exposure to the causes which includes using protective sunglasses to shield/cover the eye.

5.1.7 Implications of Finding for Health Promotion and Education

The findings of this study have several implications for planning, development and implementation for health promotion and education on preventive eye care. It has been deduced from this study that knowledge and educational exposure have direct influence on practice of preventive eye care. Therefore, to improve knowledge and encourage commercial motorcycle riders to practice preventive eye care, the following should be put in place:

Public Enlightenment

This can be in form of campaign which could be used to create awareness and influence knowledge and behavior towards practice of preventive eye care. This has the potential of reaching out to larger number of people including men and women and the entire population group in the society. This enlightenment program could involve the use of posters, leaflets, documentaries, jingles and bill board (Whitaker, Baker and Arias, 2007) for behavioral change communication. However, efforts must also be made to combine it with other strategies such as peer education, advocacy and policy intervention to effectively address poor eye care practices among the outdoor workers especially the commercial motorcycle riders. Use of one or more of these information media could be very helpful as the weaknesses of one could be counter-balanced by the strengths of others.

Inter-sectorial approach

Addressing the issue of preventive eye care practices should cut across various sectors not just the health sector but also the education, transportation, communication and social orientation sector. There is a need that, at every point an individual is to be licensed as a commercial motorcycle rider, adequate eye examination be carried out without allowing any form of

maneuvering. This should also be accompanied with basic eye care information to enable, motivate, and encourage motorcycle riders practice preventive eye care.

5.2 Conclusion

The study investigated the knowledge and preventive eye care practices among commercial motor cycle riders in Ibadan South-West Local Government Area, Oyo State. It can be concluded that the level of knowledge was fair as evident in the knowledge score while the practice of preventive eye care was poor. Thus, their knowledge seems to be unable to result in good practice of preventive eye care. The findings suggest that efforts to increase/improve on the knowledge and practice of preventive eye care among commercial motorcycle riders should be intensified. The inability to take the appropriate portion of fruits, vegetables, fish and eggs per day for improved eye sight can be addressed through social marketing in which fruits, vegetables, fish and eggs are made available at an affordable price, at every place and presented neat, attractive and healthy. Cost of eye test/examination can be subsidized by government to enable everyone have access to affordable, accessible and quality eye care.

5.3 Recommendations

Based on the findings from this study, the following recommendations are made:

1. Attempts should be made by all commercial motorcycle riders to pay very good attention to their eye health as well as eye care practices especially regular eye test and use of protective sunglasses when riding motorcycle.
2. Commercial motorcycle riders should be made to compulsorily undergo regular eye test at least once a year at an eye care/health facility.

3. Government can help in subsidizing the cost of eye test so as to make affordable, accessible and quality eye care services available to all
4. Commercial motorcycle riders should be encouraged to wear protective sunglasses while riding motorcycle by making it affordable and easily accessible in the market.
5. Communication strategies through the mass media can be used to educate motorcycle riders on the importance of preventive eye care practices. Social support from family members, peer educators and opinion leaders can be used as strategies for commercial motorcycle riders to practice preventive eye care.
6. Advocacy programs targeting leaders of the association of commercial motorcycle riders should be used to address the need for regular eye check-up among members.

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APPENDIX I

INFORMED CONSENT FORM

Dear Respondent,

I am a Postgraduate Student from Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan. I am undertaking a research titled "Knowledge and Preventive Eye Care Practices among commercial motor cycle riders in Ibadan Southwest Local Government Area, Ibadan, Oyo State, Nigeria".

Participation in this research is voluntary. The information gotten from this research may be used in developing road traffic accident programs. Please note that there is no right or wrong answers to the questions asked, what is required of you is your truthful and honest answers so as to ensure the validity of the findings from the research.

Your identity, responses and opinions will be kept confidential and used for the purpose of this research only.

CONSENT

Now that the study has been well explained to me and I fully understand the extent of the research process and my role in the research, we can start.

……. …….. OR ……

Date Sign Thumb Print

Thank you.

APPENDIX II

QUESTIONNAIRE ON KNOWLEDGE AND PREVENTIVE EYE CARE PRACTICES AMONG COMMERCIAL MOTOR CYCLE RIDERS IN IBADAN SOUTHWEST LOCAL GOVERNMENT AREA, OYO STATE, NIGERIA

Identification Number ……..

Section A: Socio - Demographic Characteristics

1. Age in years …….
2. Educational Qualification (i). Never went to school [ ] (ii). Primary level [ ] (iii). Secondary level [ ] (iv). Tertiary level [ ] (v). Others (specify) ……..
3. Marital Status (i). Single [ ] (ii). Married [ ] (iii). Separated [ ] (iv). Divorced [ ] (v). others (specify) …….
4. Religion (i). Christianity [ ] (ii). Islam [ ] (iii). African Tradition [ ] (iv). Others (specify)…….
5. Ethnicity (i). Yoruba [ ] (ii). Hausa [ ] (iii). Igbo [ ] (iv). Others (specify) ……..
6. How many years have you been riding a motor cycle for commercial purposes? …….
7. Have you ever been involved in a road traffic accident? i. Yes [ ] ii. No [ ]
8. Are you aware that you can have your eyes tested by an eye doctor? i. Yes [ ] ii. No [ ]
9. Do you consider eye test important as a commercial motorcycle rider? i. Yes [ ] ii. No [ ]
10. Have you ever had an eye test before? i. Yes [ ] ii. No [ ]

Section B: Knowledge of Preventive Eye Care

The table below contains set of questions to test your knowledge on preventive eye care practices. Please fill in your responses and tick where necessary.

S/N	Statements	Responses	Score
11.	Do you know you should have your eyes tested by an eye doctor?	✓ Yes [ ] ✓ No [ ]	
12.	Do you know there are benefits associated with having your eyes tested at least once a year?	i. Yes [ ] ii. No [ ]	
13.	Mention two of such benefits	i. ii.	
14.	Mention two sources of eye health information	i. ii.	
15.	Mention three things that a motorcycle rider can do to protect his eyes while riding motorcycle	i. ii. iii.	
16.	Mention two reasons why it is good for commercial motorcycle riders to protect their eyes while riding motorcycle.	i. ii.	
17.	Do you know there are food supplements in form of	(i). Yes [ ]	

	tablets that help to improve and maintain vision?	(ii). No [ ]	
18.	Do you know recommended eyeglasses can help motor cycle riders with poor eye sight to see better when riding motorcycle and prevent accident?	(i). Yes [ ] (ii). No [ ]	
19.	Mention two foods that help to improve and maintain vision?	i. ii.	
20.	**Score Obtained**		
21.	**Code**		

Section C: Attitude towards Preventive Eye Care

The following set of questions will test your attitude towards preventive eye care. Please tick the appropriate box that corresponds with your response

S/N	**Statements**	**Yes**	**No**
22.	Are you comfortable wearing protective sunglasses when riding your motorcycle?		
23.	I will be comfortable wearing eye glasses if they are recommended for my eye sight		
24.	I can encourage other commercial motorcycle riders to eat foods such as fruits, vegetables, fish and eggs that are good for eye sight		

	regularly		
25.	I can encourage other commercial motorcycle riders to wear protective sunglasses when riding motorcycle		
26.	Do you support commercial motorcycle riders wearing recommended eyeglasses when riding motorcycle?		
27.	I can encourage other commercial motorcycle riders to have their eyes checked regularly by a specialist		

Section D: Preventive Eye Care Practices

The following set of questions will test your practice of preventive eye care. Please tick the appropriate box that corresponds with your response

S/N	Statements	Yes	No	Score
28.	I always wear protective sunglasses when riding my motorcycle			
29.	I have my eyes checked at least once a year by a specialist			
30.	I wear eyeglasses for my eyesight			
31.	I do physical exercise at least once a week because I know it is good for my eyesight			
32.	I go to the eye doctor to have my eyes checked/tested when I			

	experience problems with my eyes			
33.	I avoid self-medications			
34.	I eat foods such as fruits, vegetables, fish and eggs		**YES**	**NO**
		Once a week		
		Four times weekly		
		More than four times weekly		
35.	**Score Obtained**			
36.	**Code**			

Section E: Perceived Barriers to Preventive Eye Care Practices

The following set of questions will assess your perceived barriers to practice of preventive eye care. Please fill in your responses and tick where necessary

S/N	Statements	Responses	
37.	What can prevent you from having an eye test?		
38.	What do you think about commercial motorcycle riders who wear recommended eyeglasses while riding motorcycle?		
39.	Would you wear recommended eyeglasses for riding your motorcycle if you were advised to do so by an eye doctor?	Yes	
		No	
40.	Give reasons for your answer		
41.	Why do you think commercial motorcycle riders do not wear protective sunglasses when riding motorcycle?		
42.	Why do you think commercial motorcycle riders do not go to a specialist for eye test/ examination at least once a year?		

43.	Why do you think commercial motor cycle riders do not eat foods such as fruits, eggs and vegetables which are good for their eyesight always?	

APPENDIX III

VISUAL SCREENING TEST FORM

42. Visual Acuity:

@6m: i. Right Eye …… ii. Left Eye ……..... iii. Both Eyes …….

@40cm: i. Right Eye …… ii. Left Eye ……..... iii. Both Eyes …….

43. External Examination:

	Right Eyes	Left Eyes	Both Eyes
Lids			
Conjunctiva			
Cornea			
Pupil			

44. Internal Examination (Opthalmoscopy) :

	Right Eye	Left Eye	Both Eyes
Lens			
Cup-disk ratio			
Macula			
Retina periphery			

45. Other comments ……

APPENDIX IV

TRANSLATED HAUSA QUESTIONNAIRE

BABI NA BAYANIN SANTA

Mai amsa, Mu'yan makarantar Bayanandi giri najami'adaga Ma'aikatar Lafiya da Ilimi, Makarantar Kiwon Lafiyar Jama'a, Kwalejin Kimiyya, Jami'ar Ibadan. Munagudanar da wanibincike da akekira "IliminIlimi da KulawanaKulawa da Gida tsakaninmasuhawanmotsinakasuwanci a Ibadan ta Kudu masoyammacinjihar, Ibadan, JiharOyo ,Najeriya".

Kasancewa a cikinwannanbincikeyana da son rai. Bayanan da aka samudaga wannan bincikeza a iyaamfani dashi wajenbunka sashirye-shiryen hadarinazirga-zirga. Luracewa babu wata damako amsarkuskure gatambayoyin da aka tambaye, abin da akebu ƙatada gagareku ne amso shinkuna gaskiya da gaskiya don tabbatar da ingancin binciken da aka .

Abunshaidarku, amsoshin da ra'ayoyinkuza a kiyayesirrikuma an yiamfani dashi don dalilanwannanbincikenkawai.

YARDA

Yanzudai an yinazarisosai a garenikumanafahimci yadda akegudanar da bincike da kumarawar da nakecikinbincike, za mu fara.

.... ko .....

Kwananwata Sanyakusahannu

Na gode.

TAMBAYOYIN TAMBAYOYI GAME DA SANANNUN KULA DA IDANU DA IDO A TSAKANIN MASU HAWA MOTOCI A JIHOHIN KUDU MASO YAMMACIN KUDU MASO GABASHIN KASAR

Lambarshaidar .....

Sashena A: HarkokinKiwonLafiyarJama'a - YanayinDabaru

1. Shekaru a cikinshekaru.....
2. DarasinaIlimin (i).Kadakutafimakaranta [ ] (ii).Matakinafarko [ ] (iii).Matakinabiyu [ ] (iv).Matsayinagaba [ ] (v).Wasu (saka).....
3. Matsayinaure (i).Single [ ] (ii).Auri [ ] (iii).Raba [ ] (iv).An sake saki [ ] (v). wasu (saka).....
4. Addini (i).Kristanci [ ] (ii).Musulunci [ ] (iii).HadinAfirka [ ] (iv).Wasu (saka).....
5. Yanayi (i).Yoruba [ ] (ii).Hausa [ ] (iii).Igbo [ ] (iv).Wasu (saka).....
6. Shekarun awakaka sance a kanmotarmotsajiki don dalilainakasuwanci? .....
7. Shin kun taɓashigacikinhatsarinzirga-zirga? (i). Ee [ ] (ii). Babu [ ]
8. Kuna san cewazakuiyagwadaidanunku ta likita? (i). Ee [ ] (ii). Babu [ ]
9. Kuna la'akari da gwajinidoyana da mahimmanci a matsayinmahayimaibabur? (i).Ee [ ] (ii).Babu [ ]
10. Shin kun taɓa yin gwajingwajinkafin? (i). Ee [ ] (ii). Babu [ ]

Sashina B: IliminaKulawa da Kulawa Mai Kulawa

Tebur da keƙasayaƙunshisaitintambayoyi don gwadasaninka game da ayyukankula da idonaido. Da fatan a cikabayanankukumakuziraindayacancanta.

S / N	Bayanai	Amsa	Ci
11.	Kuna san yakamataidanunlikitank ugwadaku?	i.Ee [ ] ii.Babu [ ]	
12.	Shin, kuna san akwaialamun da ke hade da samunidanunku a kallasauɗaya a shekara?	i.Ee [ ] ii.Babu [ ]	
13.	Yi ambaci biyudagairin wannanam fani	i. ii.	
14.	Kaam baci wasuhanyoyi gudabiyu nakiwon lafiya	i. ii.	
15.	Yi la'akari da abubuwauku da mahayin maimotsa wazai iyayi don kareida nuyayin hawababur	i. ii. iii.	
16.	Yi la'akari da dalilaibiyu da yasayana da kyaugamasuhawanmotocinamotoci don kareida nuyayinhawa.	i. ii.	

17.	Kuna san akwaiabincinabinci a cikinnau'ina Allunan da ketaimaka wawajen inganta da kulawa?	(i). Ee [ ] (ii). Babu [ ]	
18.	Ka san katafunan da aka ba da shawarar da zaitaimakaw amasuhawan motsajiki tare da idanuma rasakyau don ganinma fialhẽr iyayinha wamotsa da hanahaɗari?	(i). Ee [ ] (ii). Babu [ ]	
19.	Kaambaci abincigu dabiyu da ketaimaka wawajen inganta da kulawa?	i. ii.	
20.	**An samoasali**		
21.	**Lamba**		

Sashena C: HalinhaligaKulawa da Kulawa Mai Kulawa

Tambayoyinagabazasugwadahalinku game da kulawarido. Da fatan a zaɓikasan da ya dace daidai da amsawarku

S / N	**Bayanai**	**Ee**	**A'a**
22.	Kuna jindadinsakatufafinkyalkyalimasukyaulokacinhawa a babur?		
23.	Zanjidadinsakaidanuidanidan an banishawarar don		

	idonaido		
24.	Zaniyaƙarfafawasu 'yankwallinmotocinkasuwanci don cinabinciirinsu' ya'yanitatuwa, kayanlambu, kifi da qwai da suke da kyaugaidonidanuakai-akai		
25.	Zaniyaƙarfafawasu 'yanwasanmotsajikimasusana'a don yin sautunankariyamasukariyalokacinhawamotsa		
26.	Kuna tallafawamahayamotocinmotocimasusakaidanu da aka ba da shawararyayinhawamotsa?		
27.	Zaniyaƙarfafawasu 'yankwallunmotocinkasuwanci don sudubaidanuwansuakai-akai ta hanyargwani		

Sashena D: Ayyukan Kula da KulawanaKulawa

Wadannantambayoyinzasugwadaaikinkanakulaido. Da fatan a zaɓikasan da ya dace daidai da amsawarku

S / N	**Bayanai**	**Ee**	**A'a**
28.	A koyausheinasakullunmasutsarolokacinhawa ta babur		
29.	Na dubaidanusaudaya a kowaceshekara ta hanyargwani		

30.	Ina sakaidanu don idanunaido			
31.	Ina yin motsajiki a kallasaudaya a makosabodana san yana da kyaugaidanuna			
32.	Zan je likitanido don idanunidanunidan aka duba / gwadaidannafuskancimatsaloli tare da idona			
33.	Na kaucewashanmagunguna			
34.	Na ci abinciirinsu 'ya'yanitatuwa, kayanlambu, kifi da kwai	Saudaya a mako		
		Sauhudu a mako		
		Fiye da sauhudu a kowanemako		

Sashena E: GanyayyunhanyoyigaDokokinKulawa da Kulawa

Tambayoyimasuzuwanagabazasutantanceabubuwan da kuke da shi don hanakulawarido. Da fatan a cikabayanankukumakuziraindayacancanta

S / N	Bayanai	Amsa
37.	Menenezaiiyahanakudagagwajinido?	
38.	Yaya kaketunani game da mahayamasumotsamotocimasusayar da motociwadandasukesaidanu da aka ba da	

	shawararyayinhawamotan?		
39.	Za a iyasakaidanunashawarar don hawamotocinidan an umurceka don yin haka ta hanyarlikitanido?	Ee	
		A'a	
40.	Kaba da dalilai don amsarka		
41.	Me yasakaketsammaninmahalartamotocinmotocibasasakaidanumasukyau a yayinmotarmotsa?		
42.	Me yasakaketsammaninmaharanmaharanbakibasu je likita don dubagwajinido a kallasauɗaya a shekara?		
43.	Me yasakaketsammaninmahalartamotocibasucinabinciirinsu 'ya'yanitatuwa, qwai da kayanlambuwaɗandasuke da kyaugaidanuwarsukullum?		

APPENDIX V

TRANSALTED YORUBA QUESTIONNAIRE

FỌỌMU IFOHUNSI

Mo jé akékọ̀ọ́ ẹ̀ka ìgbélékè ìlera àti ètò ẹ̀kọ́, ní ẹ̀ka ẹ̀kọ́ ìlera ará ìlú, kọ́lẹ́jì ti ìwòsàn, Ifáfitì ti ìlú Ìbàdàn. Ẹ́rọ́ńgbà isẹ́ yìí ni láti ṣe ìwádìí lórii **"Ìmo ati Ise Àbójútó Ojú laarin awon onìsòwò to n gun oko alùpùpù ni Ijọba Bile Gúúsù Ìwọ̀ Oòrùn Ibadan, Ipinle Ọyọ, Nàìjíríà"**
Kikopa ninu iwadi yii jẹ atinuwa. A le lo awọn alaye ti a gba lati inu iwadi yii lati se agbekale ètò ìdánilẹ́kọ̀ọ́ fun ìjàǹbá ọkọ̀ lojú pópó. Ejo e kíyè sí pe kòsí ìdáhùn tí ó tònà tàbí tí kò tònà fún àwọn ìbéèrè tí mo bèrè,ohun tí o pọn dandan fún yín ni ṣíṣe òtítọ́ pẹ̀lú òdodo nínú awọn ìdáhùn yin lati mú kí àbájáde èsì ìwádìí yii lẹ́sẹ̀ nílẹ̀.
Gbogbo idanimọ, idahun ati ero yin ní a ó ṣe ní bòńkẹ́lẹ́ tí a o sì lòó fún isẹ́ ìwádìí nìkan.

IFOHUNSI

Nisisiyi t'a ti ṣàlàyé dáadáa fun mi nipa iwadii yi ati pe mo ti ni oye ni kikun nipa ilana iwadii naa ati ipa mi ninu iwadi yi, a le bẹrẹ.

…… …….. TABI ……

Ojo Ìbuwọ́lù Titẹ atanpako

Ese.

ÌWÉ ÀFISÈWÁDÌÍ LORI ÌMỌ́ ATI ISE ÀBÓJÚTÓ OJÚ LAARIN AWON ONÌSÒWÒ TO N GUN OKO ALÙPÙPÙ NI IJOBA BILE GÚÚSÙ ÌWO OÒRÙN IBADAN, IPINLE ỌYO, NÀÌJÍRÍÀ

Nọmba ìdánimọ̀……..

Abala A: ìbéèrè àbùdá ẹni ajẹmọ àwùjọ

1. Kíni ojọ́-orí yín ní ayẹyẹ ọjọ́ ìbí tí ẹ ṣe kojá? _____ (ní ọdún)
2. Ipele ti Eko: (i) O kò ka ìwé [ ] (ii) ẹ̀kọ́ ìwé méfà [ ] (iii) ẹ̀kọ́ ilé ìwé sẹ́kọ́ńdírì [ ] (iv) Ilé ìwé gíga [ ] (v) òmíràn (tọ́ka rẹ̀) _____
3. Ipò ìdílé: (i). Àpọ́n [ ] (ii) alọ́kọ́láya [ ] (iii) Se Ipínyà (iv) akọ́kọ́kaya [ ] (v) òmíràn (tọ́ka rẹ̀) _____
4. ẹ̀sìn : (i). Kristeni [ ] (ii). Musulumi [ ] (iii). élésìn ìbílẹ̀ [ ] (iv). ẹ̀sìn òmíràn (tọ́ka rẹ̀) _____
5. ẹ̀yà: 1. Yoruba [ ] 2. Hausa [ ] 3. Igbo [ ] 4. ẹ̀yà òmíràn (tọ́ka rẹ̀) _____
6. O t'Ọdun melo ti o ti n gun oko alupupu fun ise òwò? _____
7. Njẹ o ti kopa ninu ìjàǹbá ọkọ̀ lojú pópó ri? i. Beeni [ ] ii. Beeko [ ]
8. Ṣe o mọ pe o le se ayẹwo oju rẹ pelu dokita oju? i. Beeni [ ] ii. Beeko [ ]
9. Ṣe o ri ayẹwo oju bii pataki gegebi onìsòwò to n gun okada ? i. Beeni [ ] ii. Beeko [ ]
10. Ṣe o ti se ayẹwo oju ri? i. Beeni [ ] ii. Beeko [ ]

Abala B: Imo nipa àbójútó ojú

Awon ibeere wonyi ma ṣe ayẹwo imọ rẹ lori awọn iṣe ti a fi n sabojuto oju. Jọwọ fọwọsi awọn esi rẹ ki o si s'ami nibi ti o yẹ.

S/N	**Awon gbólóhùn**	Ìdáhùn	Máàkì
11.	Ṣe o mọ pe o le se ayẹwo oju rẹ pelu dokita oju?	i. Beeni [ ] ii. Beeko [ ]	
12.	Ṣe o mọ pe awọn anfani wa ti o ni ṣe pẹlu sise ayewo oju rẹ ó kéré tán lẹ́ẹ̀kan lọdun?	i. Beeni [ ] ii. Beeko [ ]	
13.	Darukọ meji ninu awọn anfani bẹẹ	i. ii.	
14.	Darukọ awọn orisun meji ti a leri alaye nipa ilera oju	i. ii.	
15.	Darukọ awọn ohun mẹta ti awon to n gun oko alupupu le ṣe lati dabobo oju rẹ nigba ti o ba nwa alupupu	i. ii. iii.	
16.	Darukọ idi meji ti o ṣe dara fun awọn onisowo to n gun oko alupupu lati dabobo oju wọn nigba ti o ba nwa alupupu	i. ii.	

17.	Ṣe o mọ pe awọn afikun ounjẹ nipa oògùn tableti wa ti o le ṣe iranlọwọ lati setọjú ati lati se atunse iran?	i. Beeni [ ] ii. Beeko [ ]	
18.	Ṣe o mọ pe wiwo ìgò ójú nipa ámọ̀ràn dokita le ṣe iranlọwọ fun awọn to n gun oko alupupu pẹlu oju ti ko dara lati riran dada nigba ti won ba n wako ati lati dẹkun ijamba?	i. Beeni [ ] ii. Beeko [ ]	

Abala C: Iwa si àbójútó ojú

Awon ibeere wonyi ma ṣe ayẹwo iwa rẹ si abojuto oju. Jọwọ fọwọsi awọn esi rẹ ki o si s'ami nibi ti o yẹ.

S/N	Awon gbólóhùn	Beeni	Beeko
19.	Ṣe o rọ̀ e lorùn lati wọ igo oju idabobo nigba ti o ba n gun ọkọ alupupu re?		
20.	A rọ̀ mi lorùn lati wo ìgò ójú ti a ba dámọ̀ràn e fun ìríran oju mi		
21.	Mo le gbà awọn onisowo alupupu mi toku níyànjú lati je awon ounje bii eso, ẹfọ, eja ati eyin ti o dara fun ìríran oju ni ojojumo		
22.	Mo le gbà awọn onisowo alupupu mi toku níyànjú lati wọ igo oju idabobo nigba ti won ba n gun ọkọ alupupu		
23.	Ṣe o fara mo pe ki onisowo alupupu wo ìgò ójú ti a ba dámọ̀ràn ti won ba n gun ọkọ alupupu?		
24.	Mo le gbà awọn onisowo alupupu mi toku níyànjú lati se ayewo oju won déédéé pelu ògbóǹtagí oju		

Abala D: Ise àbójútó ojú

Awon ibeere wonyi ma ṣe ayẹwo ise rẹ si abojuto oju. Jọwọ fọwọsi awọn esi rẹ ki o si s'ami nibi ti o yẹ.

S/N	Awon gbólóhùn	Beeni	Beeko
28.	Mo ma n wọ igo oju idabobo ni gbogbo igba ti mo ba n gun ọkọ alupupu mi		
29.	Mo ma n se ayewo oju mi pelu ògbóǹtagí oju ó kéré tán lẹẹkan lọdun		

30.	Mo ma n wo igo oju fun iriran oju mi			
31.	Mo ma nse eré ìdárayá ó kéré tán lẹẹkan lose nitoripe mo mo pe o daa fun iriran oju mi			
32.	Mo ma n lo se ayewo lodo dokita oju nigba ti mo ba ni ìṣòro oju.			
33.	Mo ma n yago fun lílo oògùn tí oníṣègùn kò júwe fún mi			
34.	Mo ma n je ojunje bi eso, ẹfọ, eja ati eyin	Ni ekan l'ose		
		Ni emẹrin l'ọsẹ		
		Ju igba merin lo l'ọsẹ		

Abala E: Awon idena ti a roye si àbójútó ojú

Awon ibeere wonyi a ṣe ayẹwo awon idena ti e roye si ise abojuto oju. Jọwọ fọwọsi awọn esi rẹ ki o si s'ami nibi ti o yẹ.

S/N	**Awon gbólóhùn**	Ìdáhùn	
35.	Kini o le ṣe idiwọ fun ọ lati ṣe ayẹwo oju?		
36.	Kini o ro nipa awọn onisowo oko alupupu ti o n wo ìgò ójú nipa ámọ̀ràn dokita nigba ti won n gun oko alupupu won?		
37.	Se o le wo ìgò ójú nigba ti o ba n gun oko alupupu re ti òǵbóǹtagí dokita oju ba gba e ni imoran?	Beeni	
		Beeko	
38.	So idi re		
39.	Kini idi ti o rò pe awọn onisowo oko alupupu kii wo igo oju idabobo ti wọn ba n gun oko alupupu won?		
40.	Kini idi ti o rò pe awọn onisowo oko alupupu kii lo sodo òǵbóǹtagí oju ó kéré tán lẹẹkan lọdun?		
41.	Kini idi ti o rò pe awọn onisowo oko alupupu kii je awon ounje bii eso, ẹfọ, eja ati eyin ti o dara fun ìríran oju ni ojojumo?		

APPENDIX VI

KNOWLEDGE QUESTIONS WITH CORRECT ANSWERS

Knowledge of Preventive Eye Care

S/N	STATEMENTS	RESPONSES
11.	Do you know you should have your eyes tested by an eye doctor?	i. Yes [*] ii. No [ ]
12.	Do you know there are benefits associated with having your eyes tested at least once a year?	i. Yes [*] ii. No [ ]
13.	Mention two of such benefits	• To know the state/condition of the eye, • to know the right medications/treatment to use, • to preserve vision/prevent blindness, • to detect disease status early and start treatment
14.	Mention two sources of eye health information	• television • radio

		• newspaper • internet • Hospital • Health centers • seminars/health talk by professionals
15.	Mention three things that a motorcycle rider can do to protect his eyes while riding motorcycle	• wear helmet • wear protective sunglasses • wear recommended glasses • use the right medications • have regular eye check-ups • have a good diet • avoid smoking • using eye supplements
16.	Mention two reasons why it is good for commercial motorcycle riders to protect their eyes while riding motorcycle.	• to protect the eyes from dust • to protect the eyes from wind/insects

		• to protect the eye from injury during accidents • to protect the eye from any form of environmental hazard • to aid vision and prevent accidents
17.	Do you know there are food supplements in form of tablets that help to improve and maintain vision?	(i). Yes [*] (ii). No [ ]
18.	Do you know recommended eyeglasses can help motor cycle riders with poor eye sight to see better when riding motorcycle and prevent accident?	(i). Yes [*] (ii). No [ ]
19.	Mention two foods that help to improve and maintain vision?	• Fish • eggs • fruits • vegetables • nuts

APPENDIX VII

PRACTICE QUESTIONS WITH CORRECT ANSWERS

Preventive Eye Care Practices

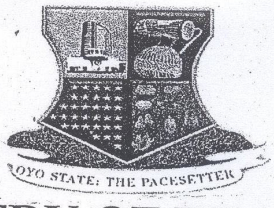
S/N	Statements	YES	NO	
28.	I always wear protective sunglasses when riding my motorcycle	✓		
29.	I have my eyes checked at least once a year by a specialist	✓		
30.	I wear eyeglasses for my eyesight	✓		
31.	I do physical exercise at least once a week because I know it is good for my eyesight	✓		
32.	I go to the eye doctor to have my eyes checked/tested when I experience problems with my eyes	✓		
33.	I avoid self-medications	✓		
34.	I eat foods such as fruits, vegetables, fish and eggs		YES	NO
		Once a week		

		Four times weekly	✓	
		More than four times weekly	✓	

APPENDIX VIII

ETHICAL CONSIDERATION

TELEGRAMS..... TELEPHONE.....



MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No. .....

All communications should be addressed to the Honorable Commissioner quoting

Our Ref. No. AD 13/479/1006

15th November, 2018

The Principal Investigator,
Department of Health Promotion and Education,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan.

Attention: Idhugwe Mishael

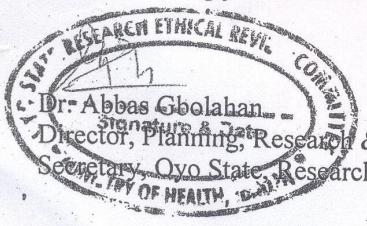
ETHICS APPROVAL FOR THE IMPLEMENTATION
OF YOUR RESEARCH PROPOSAL IN OYO STATE

This is to acknowledge that your Research Proposal titled: "Knowledge and Preventive Eye Care Practices among Commercial Motorcycles Riders in Ibadan Southwest Local Government, Ibadan, Oyo State, Nigeria" has been reviewed by the Oyo State Ethics Review Committee.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.

4. Wishing you all the best.



Dr. Abbas Gbolahan
Signature & Date
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethics Review Committee